April 2025

PR24 redeterminations

Risk and return – common issues

Ofwat

About this document

This document sets out important background and context to our PR24 decisions on risk and return for consideration by the CMA in the PR24 redeterminations. We start by providing a summary of our position on the key points raised by companies in their Statements of Case. In Sections 2-10 respond to detailed points raised by the disputing companies in their Statements of Case.

Our submission is accompanied by two papers as follows:

- CEPA, 'Supplementary evidence on the cost of equity: response to statements of case'.
- Mason, Robertson and Wright, 'Report for Ofwat as part of the appeal to the CMA of the PR24 final determination'

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1. Introduction

1.1 The methodology we put in place for the PR24 price review was an evolution of our approach for PR19. As for previous price reviews, our approach was designed to meet our statutory duties overall. Our approach maintained many of the features that have endured through successive price controls, while recalibrating our determinations to reflect evidence and learnings from recent regulatory periods.

1.2 Many of the enduring features mitigate or insulate investors from sources of risk that equity investors are more usually exposed to. Investment entered into the RCV is protected; companies are not exposed to demand risk; historic average debt costs are captured in the allowed rate of return; and, through indexation of the RCV to outturn inflation, investors' nominal returns will keep pace with economy-wide inflation. At the same time, we continued to allocate risks to companies where they are best placed to manage them and to align company and investor interests with those of customers through the use of incentives that reward companies for outperformance and adjust for underperformance.

1.3 There is significant evidence that, based on this overall approach, the sector remains 'investible'. On the basis of our allowed returns for the 2020-25 period, over £5.0 billion equity was announced by companies as raised in the period. We assess that over £4.3 billion of this has been reported as injected into the balance sheets of the regulated companies to date. We estimate that around two-thirds of this was to support companies with weak levels of financial resilience and one-third to support investment growth. This is an important consideration, as companies also have a role to ensure adequate levels of financial resilience need to be maintained if the 'investability' of the sector is to be maintained.

1.4 Importantly, the actions taken by a number of companies go beyond statements made by companies as part of the PR24 process. While some of these instances reflect the need for individual companies to support their financial resilience, overall, they support the view that the sector remains 'investable'. For example:

- South West Water did not consider equity financing to be necessary in either its business plan or its draft determination representation (as summarised in our draft and final determinations)[1,2]. However, the group carried out a rights issue in January 2025, successfully raising £490 million of new equity.
- South East Water raised £75 million equity in December 2024. While this was to improve the company's liquidity position (a matter relevant to a recent rating assessment by Moody's Ratings (Moody's)), this was additional to the £75 million to

[1] [OF-OA-020] Ofwat PR24 draft determinations: Aligning risk and return –appendix, December 2024, Table 13.
2 [OF-OA-020] Ofwat PR24 final determinations: Aligning risk and return –appendix, December 2024, Table 11.

£125 million equity that its investors had already proposed as necessary to support investment in the 2025-30 period.[3]

- Affinity Water proposed no new equity in its PR24 representation to its draft determination. [4] It has since confirmed that its investors have entered into a legally binding and unconditional agreement to inject £150 million equity into Affinity Water Limited before 31 March 2026.[5]
- Southern Water announced that it will raise £900 million of committed equity to support its 2025-30 investment programme.[6] This announcement, made in February 2025, after our final determination, is greater than the £650 million proposed in its PR24 representation to the draft determination. [7]

Summary response to the issues raised by disputing companies

1.5 Each of the companies that has asked for a redetermination has requested a recalibration of the risk and return package and a significant increase in the base allowed return. Statements of case include new evidence, not presented as part of the PR24 process and cost of equity requests exceed even the levels proposed by those companies through the PR24 process.

1.6 Acceptance of these cases would result in a material recalibration of the incentive package that underpinned our determinations. To the extent that the proposals put forward seek to limit downside risk or support the valuation of existing equity by altering the overall balance of risk and return, this may have the effect of shifting equity risk and increasing charges to customers.

1.7 The cases put forward by disputing companies go above and beyond the recalibration requests that were included in their PR24 representations. This is founded to varying degrees on an assertion that risk has increased and that investors therefore require additional compensation.

1.8 But the reasons for any claimed increase in risk require careful consideration. Customers have, through their bills, paid a return to companies that is predicated on those companies managing certain risks. We understand that public expectations on water companies are perhaps higher now than they had been in the recent past and this can impact on investor sentiment. This does require water companies to step up to deliver on their obligations and commitments and to deliver a step increase to investment. But for purposes of setting the allowed return, there is a need for a robust assessment of the reasons for any impacts on investor sentiment, the evidence of investor support (as referenced above) and an assessment of the many protections

[3] [OF-OA-005] South East Water - Statement of Case, March, 2025 paragraph 2.55(e)
[4] [OF-OA-020] Ofwat PR24 final determinations: Aligning risk and return –appendix, December 2024,Table 11.
[5] [OF-RR-001] Affinity Water PLC, corporate announcement, 17 February 2025
[6] [RR-OF-002] SW (Finance) I Plc, corporate update, 18 February 2025
[7] [OF-OA-020] Ofwat PR24 final determinations: Aligning risk and return – appendix, Table 11.

that are in place (which have been expanded in our PR24 determination), before conclusions can be drawn on the impacts for the allowed return.

1.9 The calibration of the risk and uncertainty package at PR24, was designed to support the large amount of investment required at PR24. In doing so, we have not lost sight of the fundamental protections that make the regime amenable to new investment; protections that investors in competitive sectors do not enjoy and reasons why the RAB model is being considered as a template for other infrastructure sectors. We have maintained a consistent and predictable approach to assessing equity returns (and allocating risk around movements in equity discount rates) – and we responded to indications of higher debt costs to a far greater degree than acknowledged in the Statements of Case

1.10 We were satisfied that the balance of risk and return is reasonable, taking account of our duties, PR24 and the historical context. And in order to give effect to the fair allocation of risk and return over the long-term, we have maintained our approach – consistent with UKRN guidance – of adopting a relatively stable assessment of the required total market return. There are periods where this approach has likely benefited companies and their investors, but this is within the range of accepted outcomes of this approach to allocating risk.

1.11 We set our allowed return with reference to the Bank of England's long-term 2% inflation target rather than presently higher market-based forecasts, with a zero CPI/CPIH wedge. But to the extent that disputing companies have asked for the allowed return to be revisited, we consider recent evidence published by the Office for Budget Responsibility on long term CPIH should also now be considered as part of setting the allowed return.

1.12 There will also be individual companies that benefit over multiple price control periods. Some of the risk that companies are exposed to relates to their own performance. A company that is able to sustain a high level of performance over multiple periods can expect to sustain a return greater than our baseline allowed return.

1.13 We consider that the allowed return for the sector should be underpinned by an expectation that is it set for an efficient firm, and in a manner fairly remunerates investors for risk over the long term. Adjusting the methodology for setting the allowed return specifically in response to short-term market conditions would favour investors over customers if equivalent adjustments were not made in periods where market returns are lower. Moral hazard risks arise if the regulatory regime reduced the risk exposure for companies in response to their relatively poorer levels of performance or because their past financing decisions have put them in a weak financial position today.

Targeting an appropriate balance of risk and return

1.14 Our aim was to set the determinations such that they were consistent in three important respects:

- First, the level of the allowed return must be set to best meet the long term interest of customers and investors. It must be sufficient to reward investors for the risks that are allocated to companies and to allow companies to attract the finance that is necessary to support required investment on reasonable terms. And the level of the allowed return must be justified for customers. If it is too high, such that company returns are excessive, this may raise questions about the legitimacy of the regime and would not be consistent with protecting the interests of customers.
- Second, the allocation of risks between customers and companies is underpinned by an objective that the outcomes for customers can be best delivered where risk is allocated to companies where they are best placed to manage those risks. Through the efficient allocation of risk, we seek to encourage companies to deliver the best outcomes for customers and the environment over the long term.
- Third, we aim to calibrate the incentive package such that the interests of customers and investors are aligned. Through calibration of the incentive package, we aim to increase the focus of company management on performance measures that matter for customers and the environment. If performance incentives are too weak, then companies may not be adequately incentivised to drive performance improvements. If performance incentives are too strong, they could lead to excess returns for outperformance or lead to excessive penalties on investors for underperformance. Our aim was to ensure the incentives were sufficient to encourage companies to deliver improved levels of performance, while ensuring the protections in place were sufficient to protect customers and companies from material out- or under-performance that can arise as a result of mis-calibration of the regulatory determination.

1.15 Together, these points imply that both customers and companies can expect a 'fair bet' over the long-term where a company operates efficiently; and equity investors in an efficient company have a reasonable prospect of earning the base allowed return.

1.16 In competitive markets, investor capital (both debt and equity) is at risk. Investors accept a return that is commensurate with that risk. In calibrating the incentive regime, there is a tension between (i) putting returns at risk to incentivise company performance and (ii) the levels of returns at risk, which can increase cost to customers (upside) or impact on the attractiveness to investors (downside). The 'fair bet' principle requires both downside and upside to have sufficient weight over the long-term. Taking into account the financing duty, it is important that we do not expose companies to downside risks that are disproportionately large relative to the returns they are allowed. But taking into account of the interests of customers, it is equally important that we do not expose companies to downside risks that are disproportionately small relative to the returns they are allowed.

1.17 Outturn investor returns could be higher or lower than the base allowed return, and this can reflect two broad categories of risk:

- A company's outturn returns will reflect its performance in delivering against the package of costs and incentives set in our final determination. This means that in any five year regulatory period, deviations in the equity return will arise; companies with strong operational performance can expect to earn higher returns than the base allowed return and vice versa. Equity returns will be impacted by financing performance and the capital structure adopted by each company. Financing performance is driven to a large extent by past financing decisions made by each company, whose impacts can endure beyond the period of a single price control.
- Returns will also be influenced by wider sources of risk, where these are best managed by companies rather than customers. For example, economy-wide inflation and the interest rate environment, while not controllable or part of company performance, will influence outturn returns. Companies are protected from market wide changes in the cost of debt through indexation of the cost of new debt. They are also protected from market wide changes in the portfolio of embedded debt over time, to the extent that the cost of embedded debt is set by reference a benchmark that is set by reference to the debt instruments on company balance sheets.

1.18 When outturn risks materialise, there are implications for both existing and prospective new investors. New investors will expect valuations to adjust to outturn risks in order to accommodate a reasonable expected return on their investment. It is important that our approach to calibrating risk and return does not interfere with this market-driven process where risks materialise that are within the expected range of outcomes.

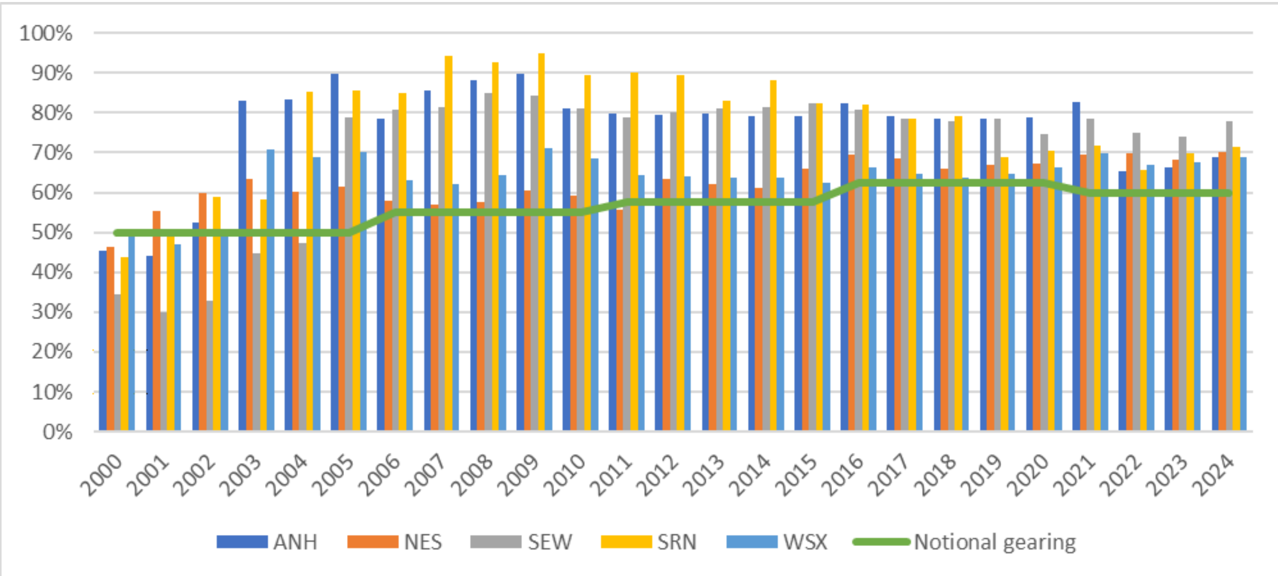
Notional and actual capital structures

1.19 A key element of our approach is to set our determinations by reference to a notional capital structure for a company that is efficient. The use of a notional capital structure aims to protect customers from bearing risks associated with financing decisions companies make under their actual financial structures, while providing a clear signal to companies and investors about the level and allocation of risk within our determinations.

1.20 Consistent with the approach taken in previous determinations, our aim was to set the determinations such that a company under the notional capital structure, could achieve a credit rating that is well within the investment grade, at Baa1/BBB+. We consider this is necessary to support the ability of efficient companies to access finance on reasonable terms under all market conditions. Of course, companies under their actual structures exhibit a range of credit ratings, taking account of the level of risk embedded in their chosen capital structure and their levels of performance.

1.21 Figure 1 shows the gearing from 2000 to 2024 for each of the disputing companies and the notional level set in our determinations. Since 2005, gearing levels of all of the disputing companies have been at levels that are consistently above the notional level and three of the disputing companies have adopted capital structures that depart materially from the notional structure. In some cases these structures have endured for over two decades following capital restructurings carried out in the 2000s.

Figure 1 – Regulatory gearing from 2000



Source: Ofwat analysis of annual reporting

1.22 Between 2002 and 2005, Anglian Water, South East Water and Southern Water adopted highly geared structures, with the introduction of whole business securitisations.[8] These companies have, in recent years, taken steps to simplify their capital structures – for example Anglian Water and South East Water have removed the intercompany loans issued to parent companies which have been repaid out of dividends paid by the regulated companies, and Southern Water's intercompany loan has been partially repaid through funding introduced in the corporate structure above the regulated company. However, the financing arrangements in place today,

[8] The whole business securitisation provides a set of covenant and security arrangements that provides additional protection for creditors and enabled the company to maintain investment grade credit ratings with a higher level of gearing.

continue to be impacted by the financing choices made by these companies over time:

- South East Water has carried a high level of gearing since 2004, and has operated with a capital structure that has carried a greater level of risk than the notional structure, and hence credit ratings that are below the level set for the notional capital structure, for many years.
- While Anglian Water reduced the gearing levels at the level of the appointee in 2021, this was accomplished through the issuance of debt in its holding company structure. Anglian Water's holding companies carry the highest proportion of holding company debt (measured by RCV) among the companies we regulate and there is evidence from credit rating agencies that this weighs on the credit rating that can be achieved by the regulated company. This is because dividend flows from the regulated company are the primary source of funds to meet interest payments on holding company debt, meaning that issues with servicing or refinancing holding company debt can impact on the credit rating of the regulated company,[9] and act as an impediment to the raising of the new equity required over 2025 –30 and beyond.
- Southern Water was the subject of a distressed sale in 2021. It carries a credit rating that is in the sub-investment grade category, reflecting both the need for the company to manage the levels of risk within its capital structure and the need to deliver a performance turnaround. Prior to the distressed sale, Southern Water had carried out risky swap restructuring arrangements in 2018 and 2020. These arrangements had the effect of improving cash flows in the short term to defer risks associated with its financing structure. However, these swaps remain in place; their effect endures and impacts on the current credit rating assessment of the company. We commented on the risky use of swaps in our Financial Resilience discussion paper.[10]

1.24 At all times we have sought to be clear about the allocation of risk and the application of the notional capital structure in our respective determinations, to ensure that any incoming investors have a clear understanding of the allocation of risk at the time they have made their investment decisions.

1.25 It is important to note that, even for a company with a credit rating that is well within the investment grade, there is a non-negligible risk of negative financial outcomes such as downgrade within, or even below, the investment grade over time. Given the aim stated in our PR24 methodology to target a credit rating of Baa1/BBB+ for the notional capital structure, it would be inconsistent with the calibration of

[9] [OF-RR-054] Moody's Ratings, 'Rating Action: Moody's Ratings downgrades Anglian Water to Baa1, outlook negative', February 2025
[10] [OF-RR-049] Ofwat, Financial Resilience in the water sector: a discussion paper Southern Water case study, 2021 pp. 12-13, use of derivatives pp. 14-17

determinations if the various protections and mitigations in our regime prevented or precluded these downgrade scenarios entirely.

1.26 The capital financing decisions made by a number of companies have made financial distress much more likely. The probability of extreme financial outcomes rises exponentially where a company has a lower initial credit rating. Since gearing is an important determinant of financial risk and credit rating, the range of outcomes – in particular the likelihood of downgrade or default – can be, to a large extent, the result of a company's financing choices, even if it relates to historical financing decisions.

1.27 We must evaluate outturn performance in light of these financing choices. Where the disputing companies have sought less stringent targets or enhanced protection to mitigate the risk inherent in their financing choices, we consider this represents an unwarranted transfer of equity risk to customers. It could reduce the incentive on companies and their investors to maintain financial structures that carry adequate levels of financial headroom to the extent it is perceived that a regulator will adjust the balance of risk and return to the favour of investors where financial resilience is at risk.

1.28 Furthermore, evidence presented to the CMA suggests that companies are seeking to use the redetermination process as a means to enhance their returns. For example, in its presentation to the CMA, Northumbrian Water set out that the allowed return on equity was insufficient to support equity investment in the next period. [11] However, we note that Northumbrian Water's RCV (£5.44 billion as at 31 March 2024) is larger than the combined RCV of the water companies in the Pennon Group (£5.15 billion as at 31 March 2024). However, Pennon successfully raised a greater amount of equity (£490 million) in January 2025 than proposed by Northumbrian Water. We note that South West Water's operational performance (as measured by return on regulated equity) was lower than Northumbrian Water's in the period 2020-24. This evidence suggests boosting returns to existing shareholders, rather than attracting new investment, may be the main motivation in making a reference to the CMA.

Calibrating the risk and return package for PR24

1.29 Our incentive arrangements include a number of risk sharing arrangements that share out- and under-performance with customers and risk protection mechanisms that provide protection to companies and investors in the event of extreme out and under performance. We adapt and adjust these risk sharing and uncertainty mechanisms at each price control. At PR24 we introduced new risk sharing mechanisms, and made adjustments to several of the existing mechanisms to take account of company performance in the 2020-24 period and to support companies to deliver necessary levels of investment, while encouraging companies to be efficient and maintain adequate levels of resilience, acknowledging that investor returns (and

11 [redacted]

in extremis, investor capital) is, and should be, at risk. To support these objectives, the incentive and risk protection mechanisms were carefully calibrated.

1.30 The significant revisions made to the risk and return package, including to increased cost allowances, revised cost sharing rates, the greater use of relative price effect adjustments, the outturn adjustment mechanism and the introduction of the aggregate sharing mechanisms, mean that companies receive much greater downside protection in 2025-30 than they did in the 2020-25 period. Indeed, the introduction of the aggregate sharing mechanisms themselves, which are calibrated to minimise the risk of negative real equity returns for outcomes and totex performance, materially reduce the scope for the whole of the notional allowed return on equity to be at risk due to operational performance.

1.31 We set our determinations in the context of a need for companies to deliver a material step up in investment and to raise material amounts of finance to support investment in the 2025-30 period and beyond. This required us to set a determination that supports companies to raise the finance necessary to support growth at a cost that is sufficient to ensure efficient companies are able to raise the finance they need, as and when required, while fairly balancing the interests of customers. We were mindful of our responsibility to protect the interests of customers and the undesirability of hampering economic growth by imposing unnecessary costs on the residential and business customers whose bills will fund that investment.

1.32 We took careful account of the views of companies and investors both in development of the PR24 methodology and following our draft determinations.

1.33 Reflecting on this, the representations to the draft determinations and updated performance information reported by companies in the 2024 Annual Performance Reports, we made a number of targeted changes to the risk and return package in our final determinations.

1.34 Table 1 compares PR24 risk sharing and risk protection mechanisms to PR19. Increased cost protection for relative price effects (energy cost indexation and indexation of material plant and equipment costs for enhancement), and the use of enhanced cost sharing rates, have the effect of reducing the exposure of equity investors to systematic risk. Several other mechanisms, including the scope for in-period reopening mechanisms, gated allowances for large projects, aggregate sharing mechanisms and the outturn adjustment mechanism have the effect of reducing risk (and hence spread) of investor returns than would otherwise be the case.

Table 1 - Risk sharing and risk protection mechanisms – comparison PR19 and PR24

	PR19	PR24
Major projects – DPC/SIPR	5 projects	27 projects
Large projects – gated	1 company, 2 schemes	7 companies, 28 schemes
Return on equity	Midpoint	High point in the range
Debt indexation	Negative adjustment below benchmark cost of debt	Positive adjustment above benchmark cost of debt
Relative price effects – cost protection	c. 30% of costs (labour)	c. 55% of costs (labour, energy, and materials, plant and equipment for enhancement)
Sector wide reopeners		Storm overflows, PFAS, cyber security, spreading sludge to land and potential additional base allowances for asset health.
Standard cost sharing[12]	Sharing rate: 50-75% Network plus controls Water resources	Sharing rate: 50-60% Network plus controls Water resources Bioresources
Enhanced cost sharing	Business rates (20%)	Enhancement (40%) Areas with high risk of cost saving (40% companies and 10% customers) Areas with higher uncertainty (25%) Business rates (10%)
Outcomes	Benchmark set at upper quartile	Benchmark set at median
Other		Aggregate sharing mechanisms Outturn adjustment mechanism Timing of RCV reconciliations Customer funding of new equity listing

1.35 Going forward, the calibration of the aggregate sharing mechanisms included in our price determinations will constrain returns for operational performance largely within the level of the real allowed return on equity. Outturn performance beyond that range remains possible for extreme levels of underperformance and the range of returns at risk will be wider where a company adopts more risky financing arrangements than applied in our determinations. However, this is consistent with the principles of risk allocation that have been in place since privatisation – that companies and their

[12] The cost sharing rates in the table set out the proportion of additional spend that the company would pay if it spends beyond our cost allowances. For example at PR19 companies had to fund up to 75% of additional spend beyond our cost allowances. At PR24 the greatest amount is 60%, although the maximum for any of the disputing companies is 50%. For PR24 this applies to base costs for water network plus, wastewater network plus, water resources and bioresources price controls.

investors are better placed than customers to bear the risks and rewards of a company's financing decisions.

1.36 Given our careful calibration of these mechanisms, we consider it is neither necessary nor appropriate to accept a recalibration of the aggregate sharing mechanisms, as proposed by

1.37 Water and South East Water. Reducing the thresholds for the aggregate sharing mechanisms would have the effect of dialling down the incentives on companies to improve performance. Indeed, further amendments to cost sharing rates as a result of an amendment to the trigger threshold for the costs aggregate sharing mechanism could result in a perverse outcome that the cost sharing rate might no longer incentivise efficiency. This could occur for example if the company or its investors were to anticipate a future sale at a premium on the RCV - perverse outcomes could arise if the company share of totex is less than the expected potential gain from such a premium on the resulting increase in the RCV.

Our approach to setting the allowed return

1.38 We followed the approach set out in the UKRN Cost of Capital Guidance in setting the allowed return on equity[13]. This peer-reviewed guidance document was developed following a request by the then Department for Business, Energy & Industrial Strategy (now Department for Business and Trade) for economic regulators to work together to achieve improved levels of consistency, and to adopt a common methodology, where appropriate[14]. The guidance itself draws on the approaches taken in past regulatory determinations, including those made by the CMA. The CMA participated in the development of the guidance as an observer.

Allowed return on equity

1.39 We set the allowed return on equity using the Capital Asset Pricing Model (CAPM), which has an established track record of use by UK economic regulators and financial practitioners. While we recognise the CAPM has limitations, its strength is nonetheless that it is an implementable and accessible approach to setting the allowed equity return.[15] It requires only three inputs, for which input data can be derived with relative ease, and its measure of risk (equity beta) has a stable and positive association with returns over the long run. It is also a simple model, and hence can be easily understood by a broad range of stakeholders, including consumer representative

[13] [OF-RR-017] UKRN, Guidance for regulators on the methodology for setting the cost of capital, 2023
[14] [OF-RR-027] Government, Strategic priorities and cross sectoral opportunities article, January, 2022
[15] The use of CAPM is discussed in a report on behalf of the UKRN. Wright, Burns, Mason and Pickford (2018) Estimating the cost of capital for implementation of price controls by economic regulators.

bodies. It is supported by our academic advisers who set out their case for using the CAPM as an approach that remains implementable and defensible.[16]

1.40 We have not found the variety of competing methodologies proposed by some companies and their advisers over the course of PR24 to be suitable alternatives to the CAPM (e.g. multi-factor models, 'inference analysis'). Not all companies relied on information provided under these approaches in preparing their business plans.[17] And our review of the multi-factor models shared through the price review process has found that alongside the material increase in complexity (which introduces challenges to the replicability of the results), the instability in risk premia and betas for the extra factors casts significant doubt on the ability of the framework to make long horizon forecasts, as required by regulators.

1.41 The challenges associated with the accessibility of underlying data to underpin multi-factor analysis for regulatory purposes are illustrated in our letter to Northumbrian Water dated 20 November 2023[18]. When the data was received, we and our academic advisers identified serious flaws in the data compilation and assumptions informing these models[19], speaking to shortcomings in the quality assurance that would be appropriate for such approaches. While we have considered the further iterations of the multi-factor models prepared by KPMG and Kairos, as set out in section 4, not all of the challenges we have raised have been addressed.

1.42 The UKRN Cost of Capital guidance offers a framework for setting the allowed return in accordance with the CAPM methodology and for choosing a point estimate. We support the aim of regulators aligning their approaches, where it is feasible to do so, in setting regulatory determinations. We would welcome the continued application of the UKRN framework in these redeterminations. We consider the UKRN cost of capital guidance supports an approach that can be understood by consumer bodies as well as investors, and setting the allowed return in accordance with the UKRN framework should serve to improve the transparency and predictability of regulatory decision making over successive price controls.

1.43 Consistent with the approach taken in our final determinations, we would welcome a redetermination that aligns with the UKRN approach and which is underpinned by

[16] [OF-OA-084] Mason, Robertson and Wright, A report on allowed return issues in disputing companies' statements of case, April, 2025, pp.30-31.

[17] For example, we understand that Severn Trent, Welsh Water and Dŵr Cymru were not part of the WaterUK steering group that took forward KPMG's work on multi-factor models. [redacted]

[18] [OF-RR-041] Ofwat, Letter from Andrew Chesworth to Northumbrian Water, April 2025

[19] See for example, [OF-RR-042] Robertson & Wright 'Multifactor models and cost of equity estimates: an assessment of KPMG's arguments' May 2024 and Mason, Robertson and Wright, [OF-RR-043] 'Responses to KPMG's August 2024 report on the cost of equity', December 2024.

parameter estimates that align with the long-term investment horizon. If any variation is required to calculations driven on the basis of the long-term assessment, these should be addressed under the framework set in the UKRN cost of capital guidance for choosing a point estimate within a range, using a reasoned assessment of cross check evidence. Overall, we consider this is the approach that also best aligns, and is consistent, with the aims of the Government's Strategic Policy Statement which requested us 'to provide the regulatory conditions to foster a culture which gives proper consideration of the long-term'.

1.44 The allowed return on equity was set at PR24 as part of an iterative process. We first set it alongside our PR24 methodology with subsequent updates and revisions made in our draft and final determinations. At each stage we have updated our assessment and responded to evidence provided by companies and their advisers, and at each stage, this has resulted in methodological changes that have placed upward movement on the allowed return.

1.45 Our final determination adopted a rigorous assessment of the evidence. However, disputing companies and their advisers have been selective in their use of arguments on the allowed return, and have almost universally focused on reasons why the allowed return should be higher. The result is an inevitable asymmetry of evidence that will be considered in this redetermination.

1.46 Elements of the evidence that would have pointed to a lower allowed return on equity also need to be recognised:

- **Risk free rate** – We considered a range of proxies for the risk-free rate in our final determinations,[20] but ultimately set an assumption based solely on the 20 year RPI-linked gilts rate. Placing weight on the 10 year RPI-linked gilts rate, consistent with our 10-20 year CAPM horizon, would have resulted in a risk-free rate assumption lower by 30 basis points (bps). Similarly, placing weight on SONIA[21] swap rates would also have resulted in a lower figure. SONIA reflects a measure that the Bank of England have described as 'the risk-free rate for the sterling market', which points to a significantly lower interest rate and the benchmark over which the majority of water companies borrow for floating rate debt[22].
- **Total Market Return** – we considered average historical equity returns at 10 year and 20 year holding periods. The resultant mid-point estimate of 6.92% for ex-post returns was higher than the 6.70% ex-post return indicated by our advisors, CEPA. The CEPA approach relied on a broader set of data points, including those measures previously used by the CMA, including Blume and JKM estimators. The

[20] [OF-OA-021] Ofwat,PR24 Final Determination: Allowed return appendix, December 2024, Figure 1.
[21] SONIA is the Sterling Overnight Index Average. It is maintained by the Bank of England who reference it as the 'risk-free rate for sterling markets'.
[22] [OF-RR-003] CEPA, PR24 Cost of Equity, July 2024.

geometric-to-arithmetic conversion approach favoured by Wright and Smithers (2014) indicated estimates of 6.22-6.87%, reflecting evidence of serial correlation in historical returns. For ex-ante returns, we determined a range of 6.68-6.91%, based on 'DMS decompositional' and 'Fama-French dividend growth' models. We chose not to place any weight on Barclays Equity Gilt Study (BEGS) evidence for the Final Determination, following representations from companies. CEPA had indicated that the BEGS data points would have implied an additional downwards ex-ante adjustment of 50 bps, relative to our actual approach of using the dataset curated by authors Dimson, Marsh and Staunton (DMS).

- **Beta** – we determined betas based on spot 5 year and 10 year unlevered betas for Severn Trent and United Utilities, giving a range of 0.268 to 0.295, with a mid-point of 0.282. Including a broader set of results would have given a range of 0.229 to 0.304 across different estimation windows and rolling averages if not including the 2 year daily spot beta of 0.329, which showed material volatility[23]. The beta approach did not adjust for non pure-play elements of the listed companies, used a net debt measure of gearing[24], and did not make adjustments for shock events that drove higher betas (e.g. the Truss Government September 2022 mini budget). An application of the vertical averaging approach used by the CMA in the PR19 redetermination would give a range of 0.266-0.277.
- **Inflation** – in considering the deflation to real rates we applied a zero long term wedge between CPI and CPIH. However, the Office for Budget Responsibility has now set out a long term forecast for CPIH and indicated that the long term wedge between CPI and CPIH is 0.4%. As we set out below we consider this should be accounted for in any redetermination of the allowed return.

1.47 Companies have also raised arguments through the PR24 process, and now in their statements of case that individual parameters set in our final determinations should be higher. These arguments were considered as part of our Final Determination and we summarise the most material points relevant to the allowed return on equity below:

- Risk-free rate: disputing companies have not supplied any credible evidence supporting the existence of a positive convenience yield in 20 year RPI-linked gilts. In their note that accompanies our submission, Professor's Mason, Robertson and Wright set out a range of current evidence which suggests convenience yields are lower than when this issue was considered at PR19, are lower at longer durations and may even be negative.[25]

[23] Estimates for weekly betas are consistently lower than daily betas, where an average of each day of the week is used to mitigate 'reference day' effects.
[24] Ofcom, for example, have consistently used gross debt gearing, which gives higher gearing and consequently a lower unlevered beta for listed comparators.
[25] [OF-OA-084] Mason, Robertson & Mason, A report on allowed return issues in disputing companies' statements of case April 2025

- Total Market Return: disputing companies dismissed evidence of serial correlation to simplistically focus on 1-year holding periods, which we consider likely to result in upwardly-biased estimates. In addition one company argued our approach focusing on long-run averages was liable to understate true TMR because of the increase in interest rates since 2022. Implementations of the CAPM that are more sensitive to inflation rate changes exist (aka the 'Additive TMR approach'[26]). However, as we set out in our final determinations, adopting such an approach would have on average yielded a lower Total Market Return than our allowances between 2000 and 2024.[27] In addition, while critical of the outcomes of our current 'Fixed TMR' policy, criticism did not recognise that the TMR would have been much lower in PR14 and PR19 under an 'Additive TMR' approach[28].
- Beta: companies continue to challenge our exclusion of Pennon in beta estimation and our decision to not reweight beta data affected by the Covid-19 pandemic, harnessing novel approaches to support their arguments involving including dummy variables in the beta regressions. We disagree with arguments to exclude or reweight periods of beta data, noting that adopting slightly different assumptions for the start date of affected period can lead to radically different beta estimates, and that data during the periods of shocks is likely to be important to help best understand water betas. We also note that the number of potential candidates for dummy variables is large. Disputing companies do not propose downwards adjustment to beta for the significant increase in betas from the September 2022 Truss Government mini-budget or for other data periods, suggesting their approach is one-sided in nature.

1.48 While we acknowledge that a range of conclusions can be drawn in determining the reasonable allowed return on capital, our aim has been to adopt an assessment of the evidence that best meets our duties. This objective underpins our approach to place weight on long term gilt, total market return and beta calculations, underpinned by market to asset valuations as the primary cross-check. The proposed real post-tax cost of equity recommended by our independent advisors, CEPA, was 4.75%, compared to the 5.10% included in our final determination[29].

1.49 We also note that market parameters can change over time. The increase to the 20 year gilt rate in early 2025 is a factor in company decisions to appeal their determination. We consulted on the potential to index the allowed return on equity in the early phases of development of the PR24 methodology; but we chose not to pursue an indexation approach following consideration of company and stakeholder responses. While the relatively higher stability of index-linked gilts at the time of our

[26] Additive TMR is distinguished from our current 'Fixed TMR approach' in that the former adds an average of the market risk premium to a recent figure of the risk-free rate to derive an estimate of TMR, while the 'Stable TMR' approach simply uses long-run averages of equity returns.
[27] [OF-OA-021], Ofwat, PR24 final determinations: Allowed return Appendix, December, 2024, Figure 3, p. 28.
[28] [OF-OA-021], Ofwat, PR24 final determinations: Allowed return Appendix, December, 2024, Figure 3, p. 28.
[29] [OF-RR-007] CEPA PR24 Cost of Equity December 2024

draft and final determinations persuaded us to not index it, our PR24 methodology signaled that we likely would have decided differently if we had experienced the levels of volatility seen since the final determination.[30] We would accordingly welcome the CMA considering whether its redetermined allowed return on equity should be an indexed allowance to increase the confidence that it is accurate and can reflect prevailing interest rate conditions over 2025-30.

1.50 We note that, in total, we have identified that new submissions relevant to the allowed return on equity alone amount to over 570 pages, accompanied by 111 databook files. While we have aimed to address key points raised in the submissions, it has not been possible for us to provide our comprehensive consideration of all points raised in the Statements of Case even supported by our economic and academic consultants. In a number of instances it has been necessary to request additional information from the firms representing the interests of the disputing companies, where information was not provided in initial submissions or was not fully transparent.

1.51 We consider it a fundamental expectation that information on which our determinations are made should be transparent and accessible to a range of stakeholders. Where information does not meet these expectations or where new information is provided at a late stage in the overall price review process, we consider there should be a high bar in determining the weight that should be placed on it for the purposes of setting a determination. Points that are not addressed in our response should not be interpreted as our tacit agreement to those made in the Statements of Case and we reserve the right to make further representations on this information to the extent that is it relied upon for setting a redetermination.

Allowed return on debt

1.52 We set the allowed return on debt through a weighted mixture of existing and new debt, with a provision for issuance and liquidity costs. The cost of new debt will be indexed, with an end of period adjustment to be consistent with the approach at PR19. The share of new debt is 24%, based on an industry RCV growth rate assumption and refinancing needs.

1.53 The cost of embedded debt is based on an 'industry balance sheet approach', whereby it reflects the rate of debt issued prior to PR24, which is in place for at least part of the 2025-30 control period. This approach focused on senior debt and excluded swaps, with amendments from draft determinations including company debt issuance

[30] [OF-OU-001] Creating tomorrow together: Our final methodology for PR24, 2022, p.95 Our PR24 methodology set an early view of the allowed return and that this was set in a period of market volatility and movements in interest rates. As a result we said that we would keep open the question of risk-free rate indexation should comparable volatility in interest rates persist into 2024.

expected for 2024-25 and a revised approach for treating index-linked debt instruments not issued at par.

1.54 The balance-sheet derived nominal cost of embedded debt of 4.82% was higher than approaches using notional benchmarks (A and BBB rated GBP non-financial 10yr+ indices) over 15yr and 20yr trailing averages of different forms. Those approaches indicated allowances of 3.9-4.6% nominal, but we made no downward adjustment. The sample of debt instruments included in the balance sheet approach includes debt instruments or issuers that carry a lower credit rating than is targeted for the notional company, and this places upward pressure on the cost of debt assessed in the balance-sheet approach.

1.55 The 4.82% nominal figure was then deflated to calculate an allowed return in real terms. We deflated the nominal cost of debt figure using the Bank of England's CPI inflation target of 2.0%, under the assumption that CPI and CPIH closely approximate over time.[31] We consider the implications if the central forecast of long term CPIH is likely to be greater than CPI below.

1.56 The allowed cost of new debt is based on a benchmark approach, using A and BBB GBP 10yr+ indices. Our final determinations included an upward adjustment to the benchmark of 30 bps, compared with a zero benchmark adjustment in our draft determinations. The benchmark adjustment was included to reflect our observation that the spread on debt costs for water companies with credit ratings equivalent to the target credit rating had increased in the primary and secondary markets through 2024. While this was a recent phenomenon, and the CMA's PR19 precedent had rejected a (negative) benchmark in the PR19 redetermination, we consider the benchmark adjustment reasonable to support companies to raise necessary levels of debt investment in the 2025-30 period. While companies have argued for slightly higher benchmark adjustments, the CMA's PR19 precedent decision may be reason to consider a zero benchmark adjustment.

1.57 The cost of debt is increased by 15 bps to account for issuance costs (5 bps), liquidity and cost of carry (10 bps). Companies argue for higher adjustments, but have not presented evidence that companies across the industry incur such high costs, neither did companies provide robust provide evidence in support of their claims through the PR24 process in response to our challenge for companies to provide this through the PR24 process.

Compensation for inflation

1.58 In the water sector, like other regulated sectors, investors earn the real part of their return through the revenue allowance, and the inflationary component of the return

[31] [OF-OA-021], Ofwat, PR24 final determinations: Allowed return Appendix, December, 2024. Pp,128-130

through the indexation of the RCV. We set the real return in CPIH terms and we index the RCV to CPIH. This means that we must assess future inflation for two reasons:

- to convert nominal cost of debt benchmarks into real-CPIH terms; and
- to adjust RPI-linked risk free rate benchmarks into real-CPIH terms.

1.59 There are various approaches and sources that can be used for this. The Office of Budgetary Responsibility (OBR) produces independent forecasts for the following five years; historically these have only been for CPI and normally that CPI forecast would revert to 2% by at least the fifth forecast year. Market based measures are also available based on transactions converting nominal payment streams into real terms or based on inference from the difference between nominal and index-linked rates of return for comparable credit quality and tenor. In our final determinations, we assumed that CPIH is equal to CPI over the long term.

1.60 At any particular point in time, outturn inflation may be above or below the long term figure used in our determination. Equity investors benefit in circumstances where outturn inflation is high or above the inflation assumption on which our determinations are set in two ways.

- When the inflationary growth in the RCV is greater than the growth of fixed rate debt (which does not rise with inflation). A period of high inflation should result in a reduction in gearing levels over time, and hence provide a benefit to equity investors. Citizens Advice has estimated the effect of this to have provided energy companies with a 'windfall gain' of £3.9 billion in RIIO-2[32] and has calculated an equivalent 'windfall' benefit to equity investors in water companies of c.£2.0 billion in the period 2020-24, equivalent to 2% of the RCV.[33]
- Equity investors will also benefit to the extent that the assumption we used to deflate nominal returns to real returns is less than outturn CPIH inflation which is used to index the RCV. This is more difficult to value as expected nominal returns are likely to be impacted by expectations of long-term inflation and so more judgement is required on the overall unexpected benefit that investors have received in the 2020-25 period.

1.61 We comment further on the effects of inflation and the extent to which this provides favourable outcomes to companies in the commentary on 'finance risk' in Section 1. However, overall we find that the disputing companies have failed to engage adequately with the beneficial effects of inflation in their Statements of Case.

[32] [OF-RR-006] Citizens Advice 2025, Debt to society: what the network companies should do with their windfall profits, February, 2025
[33] [OF-RR-010] Citizens Advice, Third party submission for the water PR24 redeterminations, April 2025, p.6.

1.62 In our final determinations we observed that it was not unusual for CPI and CPIH to diverge in the short term and that CPI had been above CPIH in March 2023, whereas the reverse was true at the time of our final determination, but that the average long-run difference was relatively small. However, we noted the need for ongoing review of the behaviour of both measures to gain assurance that assumptions that are made do not imply an inequitable allocation of risk in favour of either customers or investors.[34]

1.63 As part of the overall balance of risk in our final determinations we took account that mean CPI and CPIH has a tendency to outturn above 2.0% over time, even if the central value of CPI and CPIH that has occurred over time (ie the median) had been reasonably close to 2.0% in line with the Bank of England target. This leads to a more likely than not benefit for water companies, even if the central estimate of long term CPIH inflation is 2.0%.

1.64 On 30 October 2024, the OBR published its view that it considered the long term CPIH-CPI wedge is 0.4 percentage points, materially greater than the zero wedge that was included in our final determinations. [35] This was published beyond the data cut off date (30 September 2024) that had been confirmed for our final determinations, and was published at a time beyond which it would have been possible to consult on the implications for our final determinations. Furthermore, from March 2025 the OBR has added detailed CPIH forecasts to the previous forecasts it made of CPI and RPI that is projects for the forthcoming five-year periods.

1.65 This evidence suggests that on a forward looking basis the central estimate of long term CPIH is greater than CPI. If the long term CPIH assumption is not changed then this would have a direct benefit to equity returns as set out above. However, we consider that there remains a greater range of potential upward variation from this central forecast than the potential range of downward variation. This is, as we have observed in the past we expect that over the long term mean CPIH will continue to be greater than median CPIH to the benefit of water companies with a range of financial structures.

1.66 To the extent that the disputing companies have requested a redetermination of the allowed return, we consider that the OBR's assessment of the long-term CPI/CPIH wedge is a matter that should be considered both for setting the allowed return on debt and the allowed return on equity. We have not identified that companies have referenced this for consideration in their Statements of Case.

Market to asset ratio cross checks

[34] [OF-OA-021] Ofwat, PR24 final determinations: Allowed return Appendix, December, 2024. p,130
35 [OF-RR-004] Office for Budget Responsibility, Economic and fiscal outlook', October 2024, p. 38, Box 2.3.

1.67 Our final determinations used top-down Market-to-Asset Ratios (MARs) as the primary cross-checks for assessing the suitability of the allowed return on equity and overall package as a whole. This analysis includes private transactions and evidence from the trading value of listed companies in the water sector. MARs are also relevant to other utility benchmarks presented by companies and their advisers, for example, energy networks in Great Britain and the USA.

1.68 MAR analysis is widely used by investors and utility equity analysts as a guide to investor sentiment and can provide an indication of the suitability of the regulatory package, including required equity return. The treatment of MARs over time needs to be consistent. High observed MARs historically have not led to a reduction in the allowed return on equity or tightening of the regulatory package. This suggests that the same caution in utilising evidence needs to apply in periods where the MAR is weaker.

1.69 Our analysis for the listed companies in September 2024 found an average MAR premium of 9%. This is close to the long-run average for the sector of 10%. There are company-specific drivers of valuations with some indication that Severn Trent and United Utilities were stronger performers. Our advisor, CEPA, indicated that the equity MAR premium would require investor expectations of 2-3% RoRE outperformance or above to consider that our proposed draft determination allowed return on equity (4.8%) was insufficient, which CEPA found to be unlikely.[36] Such RoRE assumptions sat at the upper limit of equity analyst expectations and above projections from the companies and Moody's[37], suggesting that it was not the case that RoRE outperformance masked an insufficient allowed return on equity. Indeed, our own survey of equity analysts' expectations of the allowed return at Final determinations found a median (3.98%) and mean (4.00%) of return expectations of equity analysts, within a range of 3.81% to 4.14%, which aligned with the final determination decision of 4.03%.[38]

1.70 Evidence from private transactions demonstrates investor appetite for the sector. SES Water was acquired by Pennon in January 2024 at a reported premium of 6%. Previous private water company transactions in June and July 2022 indicated premia of 44%[39] and around 50%[40] for the Bristol Water and Northumbrian Water transactions. These premia were well in excess of the then current trading premia of the listed water

[36] [OF-RR-007] CEPA PR24 Cost of Equity, December 2024, p. 58.
[37][OF-RR-007] CEPA PR24 Cost of Equity, December 2024, p. 44.
[38] [OF-OA-019] Ofwat, PR24 final determinations, aligning risk and return, December 2024, p.11.
[39] [OF-RR-103] Pennon, Acquisition of the Bristol Water Group and proposed Special Dividend and Share Consolidation, June 2021
[40] [RR-OF-104] Morning Star, 'CK Infrastructure to See Gain With Cheung Kong Group Sale of Northumbrian Water', July 2022 reported a premium of around 47% to the estimated year-end regulated asset value, whilst an analyst report from HSBC Global Research referenced the premia as 50%

companies of 21-22%, as indicated by the market-to-asset ratio chart presented in our final determination.[41]

1.71 Companies and their advisers have pointed to benchmarks from energy networks in the UK and the USA as indicating insufficient returns available in water. MARs are relevant in these cases to assess two factors: i) how investors view the returns available under the package, and ii) the effective returns available to investors.

1.72 A large MAR premium likely indicates that the buyer expects outperformance, as the RAB (or RCV) reflects the present value of future cashflows under a neutral regime. If an investor pays an equity premium of 100% (i.e. pays double the value of the equity RAB), the headline allowed return on equity is not the effective return they will receive.

1.73 This is the case in US utility rate cases where the headline nominal equity returns are typically higher than set at PR24, but the MAR premia for those assets is shown by CEPA to be 25% to 80% in 2024[42].

1.74 For UK energy networks, the Ofgem RIIO-3 Sector Specific Methodology Decision has been presented by companies as a benchmark. When considering private transactions (in the absence of a pure play listed regulated networks), we observe asset premia for private energy transactions of above 60% for Western Power Distribution, National Gas and ENWL across 2021-2024, with the valuation of Scottish and Southern Electricity Networks in 2022 was equal to twice the asset base,[43] suggesting that there remains strong investor appetite for regulated infrastructure investments in the UK.

[41] [OF-OA-021} Ofwat, PR24 final determinations: Allowed return appendix, December 2024 Figure 10, p.68
[42] [OF-RR-007] CEPA PR24 Cost of Equity, December 2024, Figure 10.2 on p. 68.
[43] Evidence of private transaction MARs was reported in [OF-RR-007] CEPA, PR24 Cost of equity, December 2024 p.57.

2 Balance of Risk

2.1 In this section we first consider company views on the overall balance of risk before considering in turn the elements of finance, wholesale cost and retail cost. Our assessment on the outcomes element can be found in PR24 redeterminations – outcomes – common issues.

Final determinations

- Our aim in calibrating our final determinations was to ensure that efficient companies should have a reasonable prospect of earning the base allowed return on equity.

Companies' statement of case

- All disputing companies criticise the final determinations for not being balanced. Anglian Water, Southern Water and South East Water cite issues with the data we have used, distributions selected and lack of using Monte Carlo analysis throughout our risk analysis. They also contend that we should focus on the precise P50 calculation such as that which Monte Carlo analysis can provide.

Our response

- Monte Carlo analysis is dependent on sufficient data and robust assumptions. It is not always appropriate. Water companies overly focus on the 2020-24 period, it is reasonable to use longer term datasets where available, as the 2020-24 period represents only one set of data that can be used for the purposes of setting a price control.
- But even if risk is projected forward based on the 2020-24 period, the package is balanced if the full suite of changes and protections included in our final determinations are considered. Furthermore, companies are not taking into account the likelihood that CPIH inflation will be above our assumption which benefits companies. Latest OBR assumptions expect an average CPIH inflation of 2.4% both over the 2025-30 period and in the long term.

Overall balance

Our final determinations

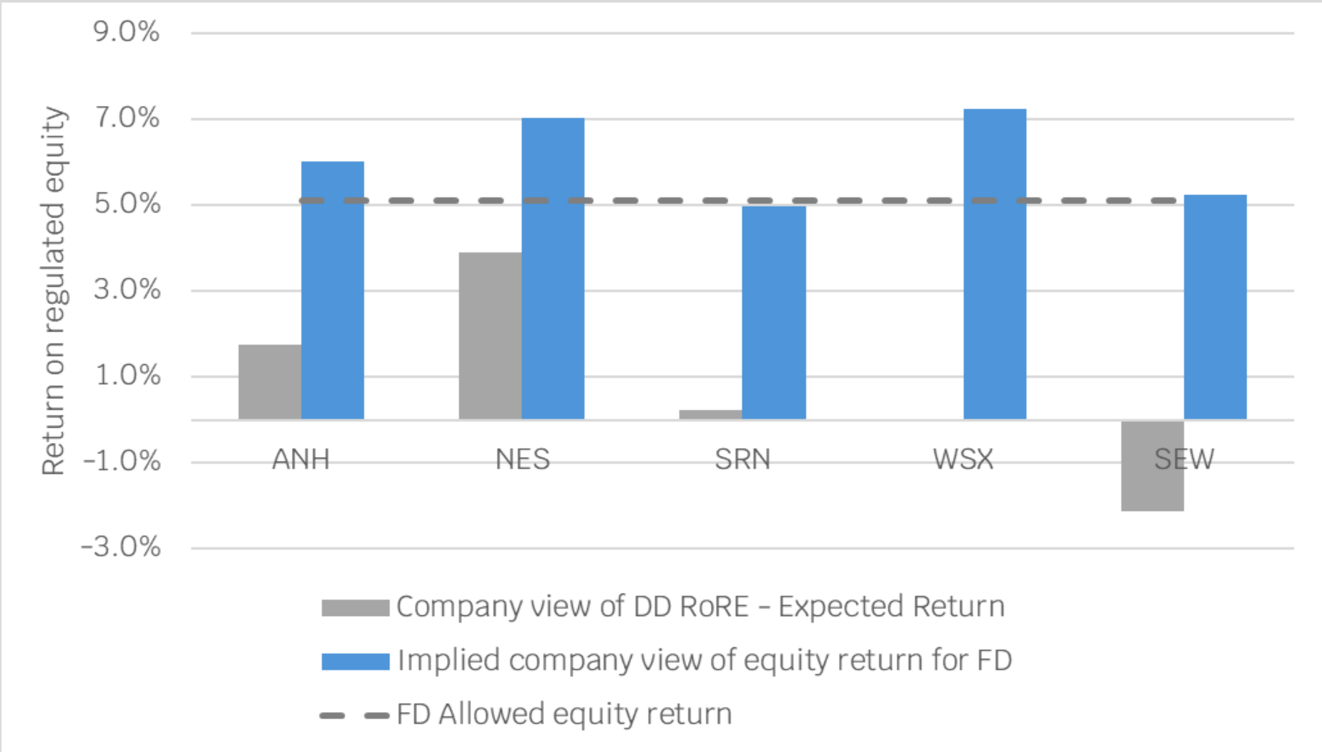
2.2 Our aim in calibrating our final determinations was to ensure that efficient companies should have a reasonable prospect of earning the base allowed return on equity. We reached this view after assessing the calibration of our determination package and considering the range of upside and downside for each company. It is possible that the current levels of performance of individual companies will impact their ability to earn the base allowed return on equity (because they are relatively efficient or inefficient).

2.3 We also reviewed the company views of risk in relation to the draft determinations. Company representations found the scope for out- or under-performance had a generally symmetrical impact on expected equity returns, however, the expected central return was significantly below the allowed return (this is illustrated by the grey bar in Figure 2.1).

2.4 We made material revisions to the risk and return package as part of our final determinations. Compared with the draft determinations, we increased the allowed return, we made material changes to cost allowances and we revised the outcomes package. Together these revisions should have made a material change to how companies view the central estimate of performance for an efficient company. For example, the increase in allowed return should have directly impacted company views of the expected return, reducing the perceived level of underestimating required equity returns. We presented the results of our analysis in the final determination. We summarise the outcome of this assessment in Figure 2.1, where the blue bars take each company's central view of equity returns for the notional company in their PR24 draft determination representation, which we adjust for changes to the risk and return package for the final determination.

2.5 After making these adjustments for the disputing companies all but Southern Water were above our PR24 allowed return and Southern Water was only 0.1% below.

Figure 2.1 Implied company view of FD24 expected return based on their representations



Issues raised by disputing companies

2.6 Disputing water companies consider that returns have reduced over time.44

2.7 All disputing companies criticise the final determinations for not being balanced. Anglian Water, Southern Water and South East Water cite issues with the data we have used, distributions selected and lack of using Monte Carlo analysis throughout our risk analysis. They also contend that we should focus on the precise P50 calculation such as that which Monte Carlo analysis can provide.

2.8 That said, Northumbrian Water's view is slightly different. It notes that:

"Risk analysis is inherently challenging and can only ever provide an indication of the expected outturn performance of the sector. However, based principally on the limitations highlighted on Ofwat's RoRE risk analysis, we consider that KPMG's analysis

[44] [OF-OA-001] Anglian Water - Statement of Case, March, 2025, p7; [OF-OA-002] Northumbrian Water - Statement of Case March, 2025, p.45; quoted from [OF-RR-105] Economic Insights page 4; Economic Insight, Evidence on overall company returns in the water industry, March 2025, also submitted by Wessex Water.

is superior and much more likely to reflect the outturn performance of AMP8 under Ofwat's FD24 for the notional company."

2.9 However, it also notes that the notional company is not reflective of any company and suggests we should have used the 2020-24 period to base risk analysis upon, is critical of the distributions we have selected and also suggests the use of precise P50 calculations, which it suggests generally requires the use of Monte Carlo analysis.

2.10 Wessex Water did not raise the balance of risk and return as an issue but reserves the right to comment later and notes:

"a fully balanced package would need to address the sources of these issues as well, or else adjust the return to appropriately compensate for such skew."

Our assessment

2.11 Our view of risk analysis is to consider the reasonable upside and downside cases to ensure that there is overall balance for an efficient company with the notional capital structure. We consider the central view of risk directly when setting cost allowances, performance commitment levels (PCLs) and the cost of debt. We carried out a robust assessment of the risk and return balance, taking account of information contained in company representations to our draft determinations, and as referenced above, our determinations were calibrated to allow companies to achieve the base allowed return, even based on the central forecasts of performance that underpinned the representations of the companies that have requested a redetermination.

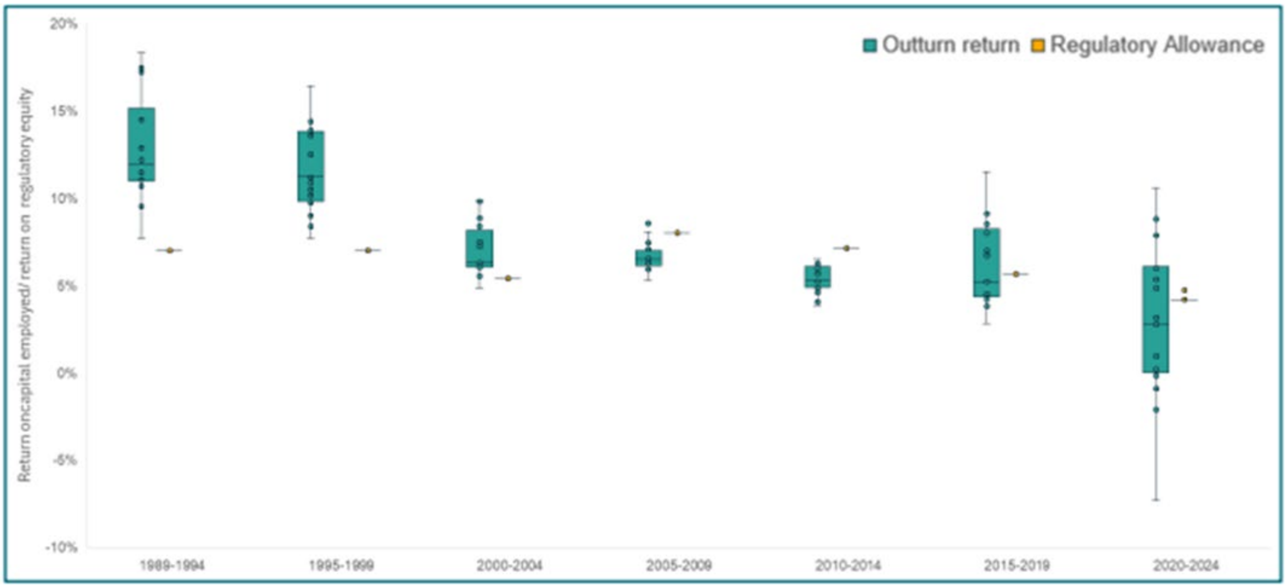
2.12 Our approach is to adopt a proportionate approach to the reasonable assessment of the range of returns that are at risk in our determination, having carried out detailed analysis to set cost allowances and PCLs. Water companies themselves have recognised that the 2020-24 period has been challenging, with operational underperformance prevalent across the sector. We took significant steps at PR24 to recalibrate the determination package to take account of performance in the 2020-24 period, and for this reason we do not consider that performance in this period should drive the assessment of risk ranges for PR24.

2.13 We consider that statements of case neither provide a fair narrative of investor returns that have been achieved to date nor suggest an appropriate role for the analysis of the balance of incentives as part of price setting. We cover both of these points in turn, before responding to the more detailed disputing company points on the balance of risk for finance and totex.

Narrative on investor returns

2.14 The recent history of companies' realised returns is mixed – as it should be in order to reflect their relative performance in meeting their obligations and commitments to customers and given the risks they manage. Anglian Water's submission refers to the chart reproduced in Figure 2.2 below;[45] this is also referenced in the Cunliffe Review 'Call for Evidence'. It sets out the evolution of outturn returns against the regulatory allowance over time. It is necessary to interpret the evidence from the chart with care; for a number of reasons the chart is not fully comparable over time and in addition, the allowed return has reduced through the period, reflecting the evolution of interest rates and the reduction to the allowed return required by investors over time. As we will show in this section, there are alternative ways of capturing the level and range of companies' collective financial performance. Nevertheless, it is a recognisable piece of contextual information.

Figure 2.2. Cunliffe Review analysis on real equity returns over time



Source: Cunliffe Review 'Call for Evidence', 27 February 2025.

2.15 The chart illustrates that:

- All companies were able to outperform the regulatory allowance in the first decade following privatisation. This reflected a period where the companies had only recently been privatised and there were significant opportunities for companies to drive efficiencies and hence opportunities to enhance investor returns.
- AMPs 3-5 saw a tighter spread of equity returns, and in the latter two of these three periods the allowed returns were relatively high (for example, the NAO referenced in 2015 that water companies had made net windfall gains of c.£800

[45] [OF-OA-001] Anglian Water Statement of Case RRCR1, p.170

million in the period 2010-15 from lower than expected corporation tax rates and interest rates)[46].

- AMPs 6 and 7 saw a progressive lowering of the allowed return in response to a change in market rates and widening of outturn returns.

2.16 We focus our attention on the wider spread in returns in the 2015-25 period. In this period we introduced the outcomes regime which has increased focus on incentives for behavioural change as recommended in the Gray Review. it has contributed to the ability of well performing companies to earn enhanced returns and sought to encourage companies and investors to focus on performance delivery rather than a bias towards capex and financial structuring. There are a number of factors that drive the increased ranges.

- In the 2015-20 period average returns were around the base return allowed at PR14 driven with slight outperformance on finance offsetting the performance on totex and outcomes. The top of the range was driven by South West Water with +570 bps returns greater than the allowed return and Wessex Water (+350 bps) that performed well across outcomes, totex and finance. Combined with the base return this provided investors with real returns around 10%.
- The low end of the return range was driven by Portsmouth Water and Hafren Dyfrdwy (-230 bps) that performed below our expectations in several areas and Thames Water (-180 bps) which had the worst performance on outcomes and totex in the industry but this was offset by positive performance on finance. All companies received a positive return overall.
- The 2020-24 period has been characterised as a period that has been particularly challenging to the water companies, as a consequence of the wider economic backdrop and a challenging price control. Average returns are around 130 bps less than the base return allowed at PR19. While there has been totex underperformance in AMP7 (- 260 bps), this was partly driven by very high inflation which has delivered an offsetting financial benefit to equity investors through indexation of the RCV (+ 210 bps). The small underperformance on outcomes (- 70 bps) is well within the +-300 bps expectation set at PR19 on outcome delivery incentives, with all companies within +-200 bps. The top of the overall range is driven by Hafren Dyfrdwy (+630 bps), Severn Trent Water (+480 bps) and United Utilities (+390 bps) where underperformance on totex is outweighed by good performance on outcomes and finance.
- The low end of the return range in 2020-24 is driven by the performance of Southern Water (-1121 bps), which is a company that has been the subject to a distressed sale, whose returns have been impacted throughout the period by the outcome of enforcement action and whose need to deliver a performance turnaround has led to material levels of investment above the PR19 allowance.

[46] [OF-RR-008] National Audit Office, The economic regulation of the water sector, October, 2015

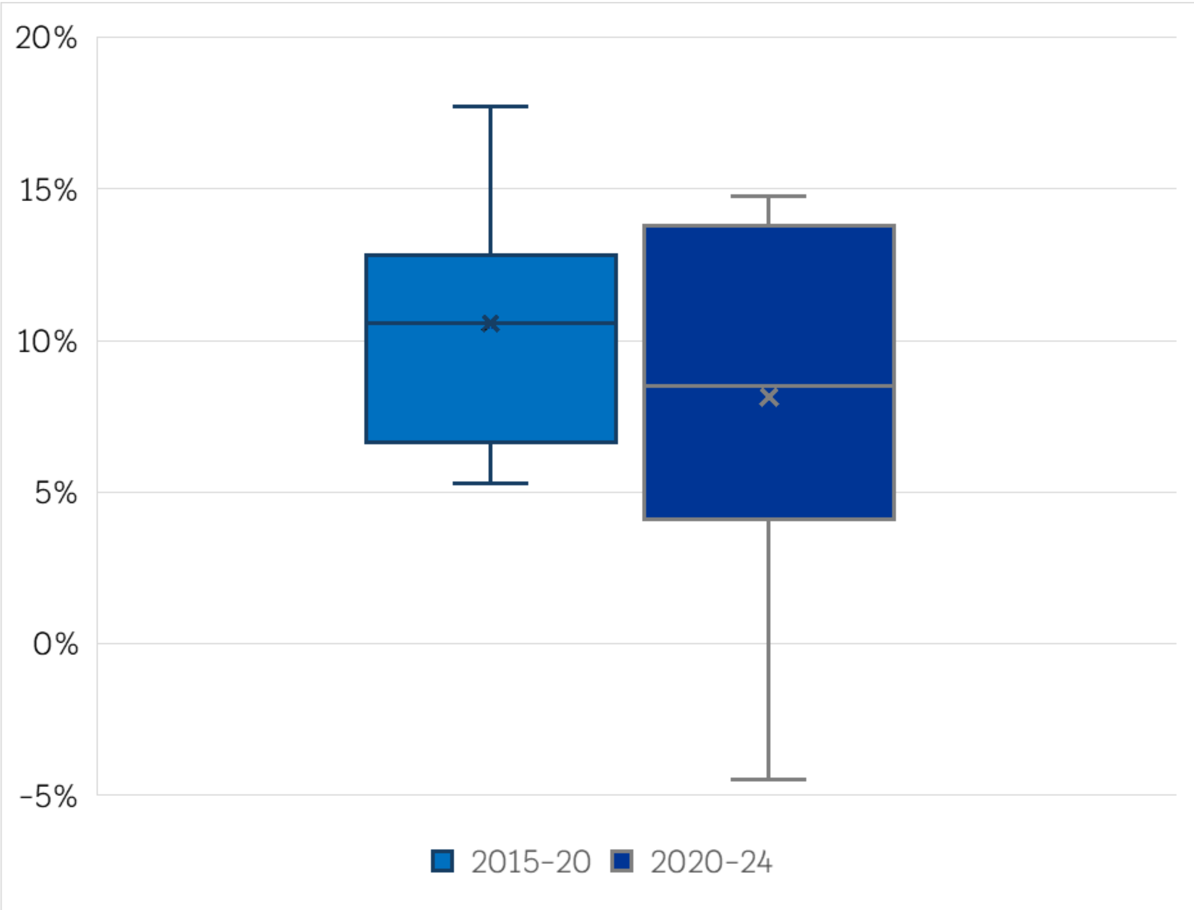
- Poor performance is a factor that has impacted returns for other companies that have reported negative real returns over the 2020-24 period. For example, in our water company performance reports, we have referenced Welsh Water's performance as 'lagging behind' for the last three years (-474 bps). We have referenced South East Water's performance as 'lagging behind' in two of the last four years, and we have identified it as a company with 'action required' on financial resilience in our recent Monitoring Financial Resilience Reports (-407 bps).

2.17 We have reflected on all of the factors referenced above in carrying forward our recalibration of the balance of risk and return at PR24.

Returns as measured by RoRE only measures a part of the investor return.

2.18 We developed a total shareholder return metric in consultation with the companies we regulate. It was introduced so that companies could report on a return metric that reasonably reflected the returns generated by equity investors over time, taking account of both the real and the inflationary component of the return. Companies report on this metric in their Annual Performance Reports. We collate that information in our Monitoring Financial Resilience report, which is the source of the data presented in Figure 2.3.

Figure 2.3: Total shareholder return



2.19 Total shareholder return is measured as the base allowed return on equity, adjusted for financial and operational performance and outturn inflation. Median performance (indicated by the 'x' in the chart) was 10.6% in the period 2015-20 and 8.5%- in the period 2020-24. In total, of the 17 companies we regulate, seven reported a total shareholder return in excess of 10% in the period 2020-24 and six reported a figure less than 5%.

2.20 Furthermore, the returns stated in Figure 2.3 are stated in real terms, if adjusted on a nominal basis, even taking into account the period up to 2024, nominal regulated equity returns have been almost universally positive. In comparison returns for the entire FTSE 100 index were negative in 11 out of the 30 years.

Implications

2.21 Prior to PR19, real returns on regulated equity had universally been positive, with limited downside relative to our baseline allowed return and favourable trends in interest rates. Over the long-term, however, our allowed return is predicated on investor capital being at risk, and the financial performance of the poorest-performing companies up to PR19 was higher than would be expected over the long-term.

2.22 Overall regulated companies have a lower risk exposure than the rest of the economy:

- Undiversifiable macro risk - companies are largely sheltered from this through absence of demand risk, inflation indexation, embedded debt allowance, cost benchmarking and real price effect mechanisms. This is a key reason why the cost of capital is and will remain low; and
- Performance risk - this is shared as a result of cost benchmarking, sharing factors, individual performance trajectories and ASM/OAM. The remainder that is left with companies is entirely appropriate to maintain incentives.

2.23 Companies retain risks around departing from the notional finance structure, treasury management and raising debt in line with market rates, but this is appropriate as companies are best placed to manage these risks.

2.24 It is inevitable that conditions vary from one price control to the next. During PR19 wider economic conditions became more challenging: there was an episode of unusually high inflation and the era of ultra-low interest rates ended. PR19 was also the second price control incorporating a regime of outcome incentives. Against this backdrop, the difference in real returns between the highest and lowest performing companies widened.

2.25 This overall spread of 2020-24 returns has been consistent with the long-term calibration of risk and return in the sector. The most significant driver of operational under-performance has been seen in outturn costs relative to our benchmark, driven in part by high inflation. But in line with the allocation of risk, companies have also benefited from high inflation through RCV indexation – a fact largely missed from companies' Statements of Case.

Approach to assessing the overall balance of risk

2.26 Statements of case appear to suggest that the way to set price limits is to feed totex baselines, PCLs, distributions and correlations into a Monte Carlo model and run simulations until a combination is found for which the P50 of a given number of runs is zero. This begs the question of what an efficient central estimate is in the first place and whether the analysis is proportionate to the assessment of risk that is within the determination. Rather than focus on the primary question of what an efficient baseline is, there is a risk of an excessive focus on selecting appropriate distributions and making assumptions on correlations which are secondary in nature. Furthermore, Monte Carlo analysis can only be used to provide insights to the returns at risk, we do not consider it can serve the primary purpose of determining efficient baseline allowances.

2.27 An example of why such an approach needs to be taken with caution is financing risk. As we show in the next section the view that finance risk has a negative skew is without merit and it is an example of where adding more complex analysis distorts risk analysis, rather than providing greater insights.

Finance Risk

Our final determinations

2.28 Our view of finance risk was that there was a range of impact on regulatory equity of between -0.8% and +1.3% (P10 to P90 range). Our assessment took account of the impact on equity returns of:

- The effect of differences in outturn inflation compared with the long-term inflation forecasts that underpinned the allowed cost of debt calculations in our determinations; and,
- The effect of companies performing better or worse than the benchmark index we use for setting the cost of new debt.

2.29 Our assessment found that there is an upward skew in the risk and return package primarily because inflation has had a tendency to outturn above the 2% inflation target set for the Bank of England, but also because there is scope for the wedge between CPIH and RPI or CPI to vary from the value we include in our determination.

Issues raised by disputing companies

2.30 Only Anglian Water, Southern Water and South East Water included the quantification of financial risk in their statements of case. These all refer to a KPMG report. It reports a range of -1.92% to +1.66% return on regulatory equity. To reach this view KPMG has used subsets of the data that we have used; made assumptions of correlations to use in Monte Carlo analysis; and also included within the risk range an assessment of the 'risk' that our allowed cost of embedded debt will be different to companies actual embedded cost of debt.

Our assessment

2.31 Our view is that financing risk is in the region of ±1% with a slight positive skew. KPMG's view is that it is closer to ±2% with a negative skew. We consider each of the points of difference in turn to show that the use of Monte Carlo analysis is neither as straightforward as presented by the KPMG report nor indeed necessary to understand finance risk.

2.32 The first difference is that KPMG has "Simulated risk of embedded debt based on the sector's expected cost of debt performance on embedded debt vs allowance". Our position is that the difference in cost between companies' embedded debt and allowance must be allocated to companies and should not be considered in a forward-looking assessment of returns at risk in setting price limits for a company with the notional capital structure. Over the long term, companies are responsible for their own financing strategies, this extends to the quantum of debt that is raised, the type of debt that is raised and the duration of each instrument. These in turn impact on the amount of 'embedded debt' each company has in place under its actual structure and the cost.

2.33 For the purposes of our RoRE assessment, we made an assumption that a company with the notional capital structure is able to achieve the cost of embedded debt, and that any difference between the actual cost of embedded debt and the notional allowance is captured as an equity risk. This is consistent with the allocation of risk and return in our overall approach to price setting, where companies and their investors must bear the rewards and consequences of their financing decisions over the long term, it is a risk that is known and can be priced by equity investors and is consistent with the approach taken in previous determinations.

2.34 The second difference relates to new debt. KPMG assess the range as -0.53% to +0.14%.[47] It is not clear what date range has been used to assess this. Our range is -0.28% to +0.30% based on sterling debt issuances that are more than 10 years of initial duration over the five-year period to September 2024 compared to our benchmark index plus 30 bps benchmark adjustment. We did not publish this analysis for licensing reasons.

2.35 KPMG suggest a correlation between the cost of embedded debt and the cost of new debt of 1,[48] meaning perfect correlation. It is not clear how this is derived. As shown in section 3 the ability of companies to raise debt can change over time. Debt spreads to our benchmark index can change over time, reflecting a number of factors, but predominantly driven by changes in credit risk, or the markets perception of changes in credit risk. Therefore, it is not necessarily the case that companies with new debt above the benchmark index will also have expensive embedded debt above our index and vice versa. For instance, in 2023 Thames Water issued a 17-year bond at 191 bps more than the benchmark index, but the cost of Thames Water's embedded debt,

[47] [OF-RR-009] KPMG, PR24 Final Determinations –risk analysis for a notional company, 24 January 2025 p.40
[48] [OF-RR-009] KPMG, PR24 Final Determinations –risk analysis for a notional company, 24 January 2025 p.58

despite including this recent high issuance, is median in the industry. A correlation of 1 is not supported by actual evidence.

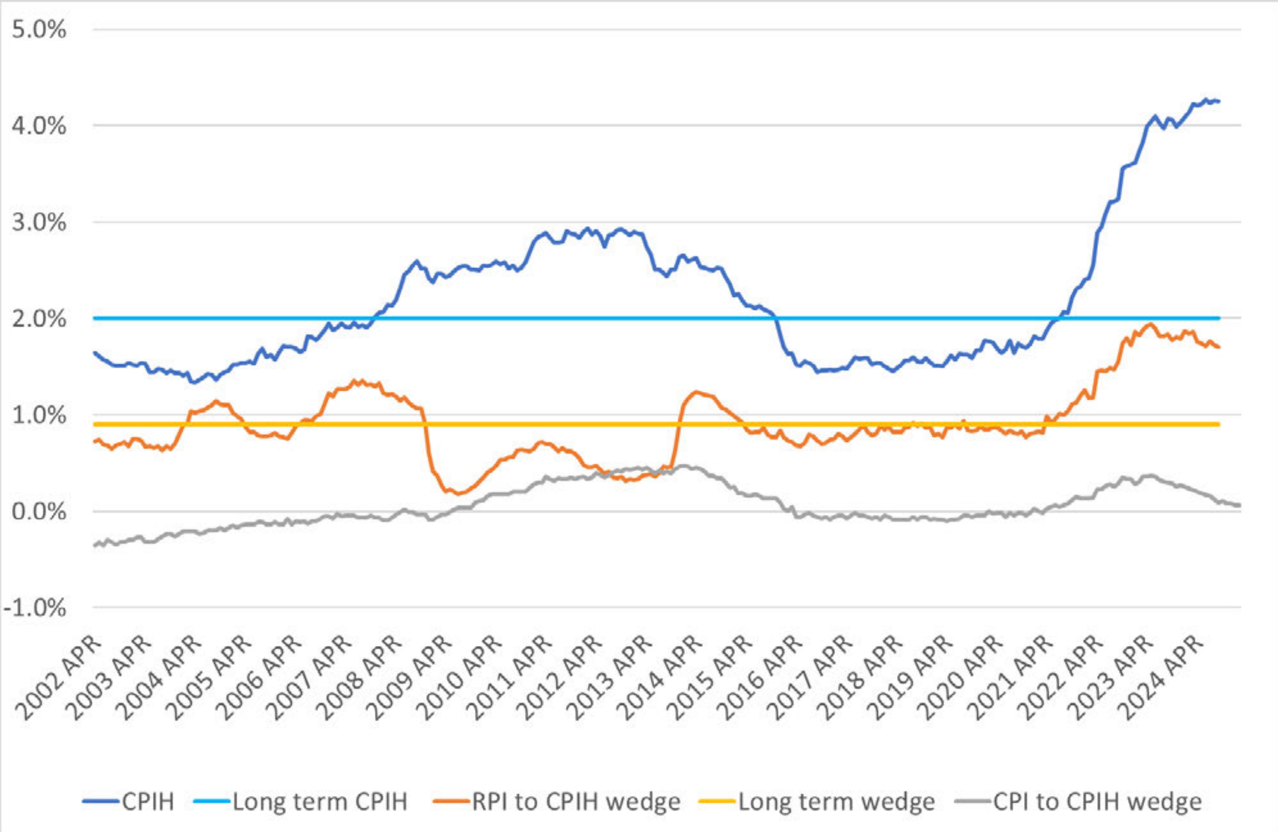
2.36 The third difference relates to indexation. In terms of fixed debt companies are exposed to the risk that inflation is different to the long-term assumption of 2% that we have used for the purposes of setting the allowed return on debt. They are also exposed to the risk that the wedge between CPIH and RPI, or CPI, is different to that applied in our determination. Most indexed linked debt accretes over the period of the bond and so this risk materialises partially throughout the period through higher or lower interest costs, but mainly at maturity when a higher principal needs to be repaid. This risk therefore also tends to be one that companies must manage under their actual capital structure.

2.37 In assessing the risk range, KPMG considered CPIH for two periods: March 2015 – November 2021; and November 2021 – September 2024. It's not clear why these periods were chosen, neither of which reflect the five-year duration of a price control, nor is it clear precisely how these were used. KPMG choose to consider RPI and CPI wedges from 2000 to September 2024. This is similar to the date range we used, but our approach to assess the risk is different. KPMG modelled the risk of the different elements of inflation separately and then used Monte Carlo analysis with assumed correlations to combine in the overall finance risk. How it derived these correlation assumptions is not clear. KPMG found the RoRE risk for CPIH is -1.27% (P10) to 1.29% (P90); for the RPI-CPIH wedge is -0.37 (P10) to 0.47 (P90); and for the CPI-CPIH wedge was 0 (P10) to 0.12% (P90).

2.38 KPMG mischaracterised our approach as simply considering the "+/-1.00% shock to the long-term assumption."[49] This was not our approach to the draft determinations or the final determinations. Our analysis used CPIH and RPI inflation data using data for the full period starting from the point at which the Bank of England was given independence. As the aim is to assess the risk ranges over the five-year period of the price control, we analysed the five-year change for each month. Rather than find distributions and correlations for each index separately, we analysed all inflation elements at the same time for each month. By basing our analysis on the full span of data, we avoid the risk of being selective in the choice of data series, which would impact on any correlations. Figure 2.4 shows the five-year average inflation on a monthly basis.

[49] [OF-RR-009] KPMG, PR24 Final Determinations –risk analysis for a notional company, 24 January 2025 p.57

Figure 2.4 Five-year average inflation on a monthly basis.



2.39 For the draft determinations and final determinations we did not include the CPI to CPIH wedge due to the small amount of CPI linked debt issued by companies. In any case we considered including it would lead to a narrower risk range as there is less variation from our long term assumption that CPIH is equal to CPI.

2.40 In response to the KPMG analysis we illustrate an assumption that 4% of debt is linked to CPI and found that the impact of the CPI to CPIH wedge has no significant impact on the analysis, as shown in Table 2.1. It is important to note that, the median value of both CPI and CPIH has been close to 2%, but on average both have been above this value for the period since the Bank of England was given its independence. That is as can be seen in Figure 2.4 above, while CPI has been most likely to be 2% when CPI has been higher than 2% it has been to greater extent than when they have been lower than 2%.

2.41 Inflation risk has a positive skew in the calculation of the risk ranges. This result is not dependent on the precise specification of the notional company; it arises in any situation where fixed rate debt is in place as high inflation leads to faster growth of the RCV than debt, where fixed rate debt is in place (and hence the equity component of the RCV grows faster than the debt component). As a result, the P90 is greater than the P10 for a large range of possible structures. Table 2.1 shows the latest results based on inflation up to February 2025, together with sensitivity analysis that both increases gearing and doubles indexed linked debt compared to the a company with notional capital structure.

Table 2.1 Inflation RORE risk

	FD	FD including CPI/CPIH wedge impact	Sensitivities		
			Higher gearing	Double indexed linked debt	Higher gearing and indexed linked debt
Gearing	55%	55%	70%	55%	70%
RPI linked	33%	29%	29%	58%	58%
CPI linked	0%	4%	4%	8%	8%
Fixed	67%	67%	67%	34%	34%
Impact on equity from CPIH	82%	82%	156%	42%	79%
Impact on equity from RPI wedge	40%	36%	68%	71%	136%
Impact on equity from CPI wedge	0%	5%	9%	9%	18%
RORE P10	-0.4%	-0.4%	-0.7%	-0.2%	-0.4%
RORE P90	1.0%	1.0%	1.8%	0.6%	1.1%

2.42 It is not clear what was the combined range that KPMG reached for inflation.

2.43 Overall, we consider it is unnecessary to use Monte Carlo analysis to understand finance risk. If it is used care must be taken to avoid adopting spurious answers from black box models over clear information. KPMG suggests that there is a negative skew for an efficient notional company, but this does not tally with reality with the underlying evidence base:

- Companies have generally benefited from financing over time. Data presented in our Monitoring Financial Resilience reports, itself based on data reported by companies in their Annual Performance Reports, shows that in 2015-20 the median large company reported 1.1% RoRE outperformance and the range of performance was 2.8% to -0.3% RoRE.[50] So far in the 2020-24 period the median large company gained 1.4% and the range was 5.1% to -1.0% RoRE.[51]

[50] [OF-RR-110] Ofwat, Monitoring Financial Resilience report 2019-20 charts and underlying data, 2020, tab S11. Return on Reg Eq.
[51] [OF-OA-064] Ofwat, Monitoring Financial Resilience report 2023-24 charts and underlying data, 2024, tab Return on Regulatory Equity, section AMP to date. We have only included large companies as this excludes outliers such as HDD that have a gain from finance in 2020-24 of 11.5%. Includes benefits from reduced corporation tax compared to final determination expectations.

- Companies individually may expect to out or under-perform our cost of debt allowance, but this can be a consequence of a number of factors, that link also to past financing choices and company performance. For example, South East Water has maintained credit ratings that are below the target applied for the notional company over successive price control periods, and Southern Water's debt issuance costs are impacted by its current credit rating; it is inevitable that companies will incur higher debt costs where these are issued at a credit rating that is lower than the notional target. Our approach has been to ensure that investors, rather than customers, bear the consequence of a company's financing choices and operational performance, so that customer bills reflect only the efficient costs.
- At referenced above, historical evidence suggests that average inflation has persistently been above the Bank of England target to the extent this may persist, it is clear that companies will continue to benefit from inflation where outturn inflation is above the 2% long term inflation target that was used in our determination for setting the allowed return on debt.

2.44 The likelihood of gain from inflation has grown since we made our final determinations. Based on the latest OBR March 2025 forecast a company with the notional structure would receive an average 0.4% RoRE benefit over the five years if the OBR central estimate occurs. Table 2.2 sets out this information plus the same sensitivities as used for Table 2.1 that show this result is likely to hold for a range of possible structures.

Table 2.2 RoRE impact of OBR March 2025 inflation forecasts

	FD calcs	FD including CPI/CPIH wedge impact	Sensitivities		
			Higher gearing (70%)	Double indexed linked debt	Higher gearing and indexed linked debt
RORE benefit if OBR central forecast occurs	0.4%	0.4%	0.8%	0.3%	0.6%

2.45 Table 2.2 is based on the latest OBR central forecast. We consider that history suggests the risk range around this benefit is also positively skewed. As part of the redetermination process, Citizens Advice has submitted evidence that values the benefit to investors arising from high inflation as £2 billion for the water sector in the 2020-24 period.[52] We have been clear that companies should not distribute such benefits, and that these benefits should be retained to strengthen financial resilience

[52] [OF-RR-010] Citizen's Advice Bureau, Third party submission, April 2025

or to support investment.[53] And while there is currently no offsetting element that could remove this upward skew in the PR24 final determinations, we note that in the energy sector, Ofgem has proposed that its forthcoming determinations switch to a price determination that is set on a part-real, part-nominal basis.[54]

2.46 As set out in Section 3.3 the current evidence is that our PR24 cost of debt is in line with the rates companies are able to achieve. And this is despite a likely ongoing impact of the default risk of Thames Water having a negative impact on the sector

2.47 Therefore, based on both latest and historic data, finance risk provides a positive skew within overall RORE. To understand this does not require Monte Carlo analysis.

Cost Risk

Our final determinations

2.48 We noted that enhancement costs were likely to have wider variations than base costs, but after applying higher cost sharing rates, the overall risk for companies post reconciliation was likely to be similar.[55] We considered that when all factors are taken into account that the relevant cost risk range could be narrower than suggested by performance in previous determinations.

2.49 Overall, we consider that it remained appropriate to use the 2015-20 risk range of +/- 8.5% for wholesale totex over/underspend compared to our baseline. This reflects the widest outturn cost performance range of any five-year period from 2000 until 2020.

2.50 We took account of the risk from price control deliverable (PCD) time incentives using the available information. We did not take into account the element of the PCD that returns funding to customers where enhancement improvements are not delivered. Our rationale was that it is not appropriate that customers should pay for quality or environmental improvements that are not delivered. This element of the PCD calculation is intended to ensure customers do not pay for investments that are not delivered, and should mean that the company is no better or worse off. We considered the scenario where a company incurs significant abortive costs, that cannot be considered as design work for future improvements, should not be a material risk for an efficient company. It is important that this risk is fully allocated to companies so

[53] [OF-RR-011] Ofwat, IN 23/04 Guidance on factors Ofwat considers in assessing dividends declared or paid, June 2023

[54] [OF-RR-012] Ofgem, RIIO-3 Sector Specific Methodology Decision – Finance Annex, July 2024, pp. 24-39

[55] We set cost sharing rates so that companies only have 25% of the risk for IED enhancement expenditure, environmental permitting regulation (EPR) permits, schemes included in enhanced engagement and the large scheme gated process. For all other enhancement schemes companies will bear the risk of 40% of overspends. This is different to the 50:50 cost sharing rates that disputing companies have for base costs.

that they have a strong incentive to deliver required enhancements at an efficient cost.

Issues raised by disputing companies

2.51 Companies consider that we have understated cost risk as:

- RoRE analysis for both wholesale and retail costs should use latest data, ie 2020-24, rather than 2015-20;
- risks for base costs and enhancement costs should be considered separately; and
- RoRE analysis should include risk of PCD clawback.

2.52 Companies referenced the KPMG report for any specific analysis.

Our assessment

2.53 Companies have drawn purely from the 2020-24 period and not considered any wider information in assessing their risk ranges. We consider it is difficult to draw conclusions purely on this period given:

- the concentration of atypical events in this period;[56] and,
- the material changes to the risk and return package introduced at PR24 that reduce risk for water companies. These include, the expanded use of relative price effect mechanisms, the revised approach to cost sharing rates, the expanded use of reopening mechanisms, the increased use of third party investment for large projects (under the DPC and SIPR regimes) and the introduction of aggregate sharing mechanisms. These mechanisms act to reduced expenditure gaps and risks compared with the package applied at PR19. We summarise these changes in Table 1.

2.54 We consider that KPMG's calculations do not take appropriate account of a number of factors including:

- Efficiency. KPMG consider that no account should be taken that firms can become more efficient over time and their calculations did not reflect that 2025-30 base investment should be more efficiently delivered than 2020-25 investment. This is a central part of our expectation of a notional company.
- Approach to setting base costs. Reflecting sector wide performance delivered in the 2020-24 period, we have revised our assessment of what an efficient company can deliver for base costs. As a result companies are less exposed to challenges in what they need to deliver for base costs at PR24 compared to PR19. At PR19 we

[56] For example, companies have been impacted by COVID-19 and a subsequent period of high inflation have had significant impacts in 2020-24.

expected that a 15% reduction in leakage could be delivered within base cost allowances. At PR24 we have changed our policy so that all improvements are financed either through base costs or enhancement costs.

- Reopening mechanisms. This includes the possibility set out in our final determination that companies may be allowed additional base expenditure allowances, if this is necessary, following improvement in our understanding of asset condition in the water sector.

2.55 The changes we have made to the overall package mean that the risk and return package is broadly balanced taking account of sector wide performance in the 2020-24 period. Even so, we consider it inappropriate to base risk assessment only on such an atypical period.

2.56 KPMG provides references to further documents that it considers adds weight to its dataset on infrastructure projects. We did not place weight on KPMG's equivalent evidence in making our final determinations given the relatively small number of projects with values of less than £100 million (noting that schemes below this threshold would be subject to the standard 60:40 cost sharing rates in our final determinations) and the potential lack of comparability across regimes. We considered that our approach to large projects already took into account the greater variation in risk that large schemes can have. Our review of these new documents suggests these are also focused on large projects and so do not suggest any more weight should be placed on the KPMG infrastructure database

Table 2.3: Our assessment of evidence cited by KPMG in its assessment of cost risk

Reference	Relevance to projects less than £100m (ie not large projects)
BCG (2021), International Major Infrastructure Projects Benchmarking Review.	Projects tend to be grouped in a way that shows they are clearly large projects. For instance grouped into \$0.25-0.5 billion, \$0.5- 1 billion, and \$1-5 billion ranges on page 29.
IMF (2019), Costing of Infrastructure Projects	The underlying source is Megaprojects and Risk (2003), Bent Flyvbjerg, Werner Rothengatter based on "Economic Appraisal of Large-Scale Transport Infrastructure Investments" by Mette K. Skamris and this suggests this is relevant for large projects.
Institution of civil engineers (2019), Reducing the gap between cost estimates and outturns for major infrastructure projects and programmes.	An early statement in the report is ".. nine out of ten projects with a value of over \$1bn go over budget or over deadline around the world." We were unable to identify the finding "higher cost overruns across transport and infrastructure between 20%-80%" and so could not understand if it is relevant but the overall focus of the paper on large projects indicates it is not.
Flyvbjerg, B., & Gardner, D. (2023), How Big Things Get Done.	The database of 16,000 projects is split between 25 categories and the water projects mean overrun of 20% is better than 18 other sectors including buildings (62%), rail (39%), and health (29%). There is no information on the source of the water projects or indeed how large the sample is. It seems likely that the projects could be skewed large projects given that there may be more public information about such projects.

2.57 KPMG also referenced data from four water companies on time and cost performance which it said "indicate the following AMP7 performance for completed projects". It did not provide this data or even state which of the four companies had provided data. We requested the underlying data from disputing companies and once received we identified concerns that impact on the validity of the data for assessing our RoRE risk ranges:

- Southern Water's data does not reflect AMP7 projects and almost all the planned start dates are in AMP6. The "actual" data provided is imprecise and actual start dates are always 1 April of the year and end dates are 31 March of the year.
- Thames Water's data focussed on a small sample of only 33 projects; no clarity was given as to how the sample was selected.
- Anglian Water's calculations include 250 of the 592 projects. But the accompanying time data does not have actual end dates despite having actual costs and the actual duration of projects for which calculations are used is always exactly the same as for the planned duration. We question if it is the case that if Anglian Water can start a project it will always have exactly the duration that it expected.
- South East Water's data is focused on AMP6. Only 10 of its 34 projects completed in AMP7 and only 3 started in it.

2.58 As well as these deficiencies in the data that KPMG's analysis is based upon, we also question whether these four companies could provide a sample that is representative of the sector or for an assessment of an efficient company. We note the cost data provided by Anglian Water that is based on AMP7 projects and is a larger sample than any other company shows that there was a roughly equal under- and overspend risk for projects. Mean performance of the 250 projects where data was provided was -8.5% underspend, with a P90 underspend of -42.2% and a P10 overspend of 46.6%.

2.59 Overall, we continue to consider that material weight should not be placed on the data provided by KPMG on enhancement schemes and that the increased protection from the differing cost sharing rates for enhancement expenditure are sufficient to mitigate the risk that enhancement costs are more risky than base costs.

2.60 We also continue to consider that the clawback PCD element recovers additional funding not returned under cost sharing, resulting in a company being no worse off. We note that the CMA reached the same conclusion in its PR19 redeterminations about ODIs relating to clawback of enhancement totex allowances.[57] This incentive mechanism at PR19 is equivalent to PCDs at PR24. Our views on the time incentive are included in section 7 expenditure allowances common issues.

[57] [OF-RR-013] CMA, Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, final report. March 2021, see 7.314 or 8.187-9,

2.61 On retail costs it is important to note that company retail costs are driven to a significant extent by provisions on bad debt, which is in turn driven largely by the performance of companies in collecting bad debt and the choices companies make about the accounting treatment and reporting of bad debt provisions in their accounts.

2.62 There was substantial variation in water company views with respect to the risk at the draft determinations.[58] The retail cost allowances included in our final determination were 3% higher than outturn costs in the period 2019-24, and already incorporate an increase in bad debt costs because of increased water bills. Our view is therefore that the risk ranges calculated by KPMG are substantially inflated as it is based on the 2020-24 data and that the approach we applied in our final determinations is appropriate.

Aggregate Sharing Mechanisms

Our final determinations

2.63 We introduced separate aggregate sharing mechanisms (ASMs) for cost and outcome performance at PR24. These mechanisms were designed to protect customers by reducing the impact of extreme levels of outperformance on customer bills, and to support ongoing investment in cases of extreme underperformance.

2.64 The wholesale totex ASM will reduce the effect of out- or under-performance on equity returns by 50% once a 200 bps return on equity trigger has been passed. It will be applied using expenditure subject to cost sharing but will exclude any adjustments from PCDs. There will be a single calculation across the five years for each company at the appointee level across the wholesale price controls (the network plus, water resources and bioresources price controls).

2.65 The outcomes ASM will trigger if the annual impact of Outcome Delivery Incentives (including C-MEX, D-MEX and BR-MEX) is greater than 300 bps of service regulated equity in any year. The ASM will share excess returns or penalties beyond the trigger threshold (calculated annually and separately for water and wastewater services) equally between companies and customers. Beyond a trigger threshold of 500 bps, the sharing of excess returns or penalties is 90% to customers and 10% to companies

[58] [OF-OA-20] Ofwat, PR24 final determinations, Aligning Risk and Return Appendix, December 2024. P,25.

Issues raised by disputing companies

2.66 Southern Water considers that the ASM thresholds are too wide and puts the whole of the equity return at risk. It also considers that the Wholesale Totex ASM applying across both water and wastewater price controls but the Outcomes ASM applying separately between water and wastewater price controls may confer advantages and disadvantages to companies based on whether they are a water only company (WoC) or a water and sewerage company (WaSC). Southern Water suggests that the thresholds should be separate for water and wastewater for both costs and outcomes with 50% sharing at ±150 bps and 90% sharing at ±200 bps.

2.67 South East Water suggests that the Outcomes ASM thresholds reflect 50% sharing at ±200 bps and 90% sharing at ±300 bps.

Our assessment

2.68 We consider a recalibration of the ASM thresholds to be neither necessary nor appropriate. The aggregate sharing mechanisms introduce a material additional protection at PR24 and were calibrated to constrain returns for operational performance largely within the level of the real allowed return on equity. Reducing the thresholds for the aggregate sharing mechanisms would have the effect of dialling down the incentives on poorer performing companies to deliver improved levels of service to customers.

2.69 Furthermore, in the case of the Wholesale Totex ASM it is important to consider that investors could anticipate a future sale providing a premium on the RCV. It is important that the company share of totex remains higher than the potential gain from this premium to avoid a perverse incentive where a company might expect to benefit financially in the long term if it incurred inefficient investment that had no benefit to customers or the environment.

Outturn Adjustment Mechanism

Our final determinations

2.70 Following stakeholder representations to the draft determination, we considered if there were further ways we could provide confidence to customers and investors that would achieve our aim that customers would only pay for additional returns for surpassing stretching targets, but efficient companies will be able to achieve the allowed return. We published a consultation on a potential new mechanism, the outturn adjustment mechanism (OAM), on 15 October 2024.[59] We held a workshop with

[59] [OF-RR-014] Ofwat, PR24: Consultation on outturn adjustment mechanism, October 2024

water companies on 22 October 2024 and subsequently published a note of our answers to questions that had been raised.[60]

2.71 In their responses, most stakeholders welcomed a mechanism, albeit almost all asked for changes. There was opposition from stakeholders including CCW and Thames Water who considered our original proposal would:

- increase the uncertainty companies will face regarding the impact of their performance on equity returns;
- risk diluting incentives to improve performance, including because of possible behavioural factors which might influence a company's decision-making and choices under uncertainty such as satisficing or default bias;
- risk customers paying for service improvements which may not materialise if the entire sector performs poorly, but some companies would still receive rewards because they were in the top half of poor performers;
- reduce transparency and increase complexity of the regime;
- increase the challenge for the sector to raise necessary levels of finance (because half of companies would always be in penalty under the mechanism, irrespective of performance); and
- reduce incentives for companies to collaborate to share best practice as the mechanism would more strongly incentivise companies to outperform their peers.

2.72 After considering the comments we received, we adopted a modified version of the OAM in our final determinations. In particular we considered that adding a deadband would mitigate the impact of the most serious issues raised as it would reduce the uncertainty as the mechanism would not automatically apply each year. Many of the issues raised result from the mechanism applying each year leading to uncertainty for individual companies and impacting incentives. Instead, it would only be triggered if there is a clear difference in outturn returns across the sector than expected, where performance of the median benchmark passes a trigger threshold of 50 bps impact on the notional equity return. If triggered the sector wide adjustment will be the difference between the median benchmark and the deadband trigger threshold.

Issues raised by disputing companies

2.73 Northumbrian Water, Anglian Water, South East Water and Southern Water welcome the introduction of the OAM and the change we made for this to be applied on an annual basis, but ask for the deadband to be removed and noted the short time to respond to the consultation. Wessex Water only noted that the OAM would help to mitigate the overall balance of risk.

[60] [OF-RR-015] Ofwat, Q and A on Outturn Adjustment Mechanism, October 2024

2.74 Northumbrian Water considers that the deadband does not address the concerns we set out. It considers that at least half of companies will earn negative returns anyway, that competing against the median company provides strong incentives to outperform and regulation already means that water companies compete against each other and that introducing a deadband would not mitigate a disincentive to collaborate.

2.75 Anglian Water, South East Water and Southern Water consider that removing the deadband will remove the expected skew for outcomes and so reinstate the fair bet.

Our assessment

2.76 We continue to consider that a deadband will address valid concerns expressed in consultation responses that we describe above and provide a more stable and predictable regulatory framework for investment to improve performance.

2.77 While the disputing companies consider that it is certain that the median company will have net penalty ODI payments, others disagree. Severn Trent Water considers that it is more likely that the OAM will result in limiting its outperformance payments and it assumes the median company will have 65 bps of outperformance.[61] Moody's also note there is net outperformance for the median company using companies' performance expectations in their draft determination representations.[62] Without a deadband this would reduce ODI payments for all companies.

2.78 Whether incentives that are based on ex ante targets or relative targets provide stronger incentives depends to a large extent on behavioural aspects to how water companies respond to such targets. Companies that position themselves as industry leading would have strong incentives to outperform relative targets. However, if a majority of companies focused on a median position it could reduce incentives for all companies and in the worst case could lead to companies bunching around similar poor performance.

2.79 We disagree with Northumbrian Water that removing the deadband would not impact incentives for companies to collaborate. Collaborating helps other companies and so is likely to also help the median company. Without a deadband this would automatically act to reduce returns for all companies and therefore leads to an immediate negative for any company that collaborates. This is different to our cost models that are backward looking over multiple years. In this case the benefit of improved efficiency

[61] At its capital markets day on 5 March 2025, Severn Trent Water stated "Of note, we assume a 15 bps downward OAM (Outturn Adjustment Mechanism) adjustment in our 1.1% estimate. With six referrals to the CMA, there is potential for this OAM to increase, in our view."

[62] [OF-RR-005] Moody's, Regulated Water Utilities – UK: Increased business risk weakens credit quality, despite improved settlement, 28 March 2025, p. 8, This is based on company point estimates each year and not a probabilistic Monte Carlo risk analysis.

from collaboration in the long term has more chance of outweighing the risk of reducing cost allowances. And while a small risk to collaboration remains with an OAM deadband it would only materialise in rare circumstances, meaning that the benefits of collaboration could still outweigh the risk.

2.80 If the deadband were removed, it would alter the overall balance of risk and reward. In our final determinations we considered that the overall balance of risk was broadly balanced. As set out in Section 5 Outcomes – common issues the estimate of P10 RoRE for the median company is greater than the P90 estimate and the average is -26 bps. If the OAM is implemented without a deadband the median RoRE for the median company would be zero. If this is removed it would leave an upward skew in finance risk that we set out in section 2.2. There are a number of ways to remove the upward skew in finance risk that include amending the CPIH inflation rate that is used to setting the allowed return on debt, and/or adopting the approach proposed by Ofgem in its RIIO-3 price controls, to set a component of the RCV on a fixed nominal (rather than inflation-linked) basis.

3. Notional capital structure

Final determinations

- We maintained gearing for the notional capital structure at 55% as set in the final methodology, having signalled a reduction from PR19 in the draft methodology.
- The level of inflation over 2020-25 means that the a company with the notional capital structure would naturally reduce gearing by more than the 5% movement from PR19 to PR24.

Companies' statement of case

- Two companies have set out that the CMA should revert to the PR19 level of notional gearing at 60%, arguing that we have not made the case that a lower level of gearing is required.

Our response

- Companies have not made new arguments relating to notional gearing. We set out our response to the arguments raised by the companies in our final determinations.
- We would support the CMA deprioritising the redetermination of the notional capital structure. Companies have had sufficient time to align their capital structure to the notional gearing level should they wish to, and we consider it incorrect to ignore the effect that high levels of inflation would have on notional gearing.
- Our approach to setting the level of notional gearing is consistent with the UKRN, which sets out that 'the notional gearing assumption should reflect the regulator's assessment of the balance of risks facing the regulated company, a wide range of benchmarks on gearing levels and overall regulatory policy objectives, not just that of the actual company (or companies) in question."

3.1 We set our final determinations by reference to an efficient company with a notional capital structure. The use of a notional capital structure is a long-standing regulatory policy that has been in place since privatisation used by a range of UK regulators and the CMA in previous price determinations. The use of a notional capital structure protects customers from bearing much of the risk of companies' actual financing decisions. It provides an important signal to companies and investors about the regulatory, and ultimately customer, backing for a level of debt in company structures. It sets out a view about the prudent level of risk within the capital structure, reflecting that companies need to raise significant amounts of finance to meet their obligations and deliver their investment programmes, and these investments should be financed efficiently.

3.2 Companies have freedom to deviate from the notional capital structure, within the constraints of the price control determination, the licence and their wider obligations. However, they do so at their own risk.

3.3 At PR24 we have set out that gearing levels that exceed 70% may not be sustainable in the long term. Therefore we have signalled more firmly than before our view that gearing levels that exceed 70% are above the level that is consistent with water companies meeting the requirement of maintaining long-term financial resilience.

3.4 Other assumptions in relation to the capital structure and financing arrangements for the notional company are required for the financeability assessment, including the mix of debt between fixed rate and index-linked, and the dividend yield; these were set out in our final determinations and underpinned our financeability assessment.

Our final determinations

3.5 We set gearing for the notional capital structure at 55%. This was a reduction from 60% at PR19, reflecting our view that there was a stronger role for equity in the notional capital structure than used in our recent determinations. The notional gearing assumption reflected our assessment of the balance of risks facing the regulated company. Our approach was consistent with the UKRN's cost of capital guidance which implies a range of regulatory discretion.[63]

3.6 We set notional gearing at 55% in our final methodology in 2022, having previously signalled that a lower level of notional gearing may be appropriate in the draft methodology and in our discussion document in 2021.[64] This has provided companies with the opportunity to better align their capital structures with the notional gearing level of 55%, should they have wished to. We considered that a higher equity buffer than applied at PR19 would support investment and help ensure the notional capital structure remains resilient to the challenges placed on the sector, noting the level of revenue that is at risk as a result of service performance.

3.7 A five percentage point change in notional gearing from one price review to another is not unprecedented and is well within the range of 50% to 62.5% for notional gearing at

[63] [OF-RR-015] UK Regulators Network, UKRN guidance for regulators on the methodology for setting the cost of capital, 2023, Notional gearing p.33 – Recommendation 9: The notional gearing assumption should reflect the regulator's assessment of the risks facing the regulated company, a wide range of benchmarks on gearing levels and overall regulatory policy objectives, not just that of the actual company (or companies) in question.
[64] [OF-RR-019] Ofwat, PR24 and beyond: Discussion paper on risk and return, December 2001, Section 5.3 Notional capital structure, emerging thinking, p. 42-46

previous price control periods. The period of elevated inflation that has characterised PR19 has resulted in downward pressure on gearing levels for the a company with notional capital structure and for companies under their actual structures where nominal fixed rate debt is in place. This is because gearing is measured as net debt divided by RCV, and where a proportion of net debt is fixed rate debt (such as in the notional capital structure), high levels of inflation mean that RCV can grow faster relative to net debt, leading to a reduction in gearing. We consider this supported the ability of companies, under the notional capital structure, to achieve the five percentage point reduction in gearing compared with that applied at PR19.

3.8 We also noted that, in our final determinations, companies logged-up certain PR19 reconciliation adjustments to the value of nearly £4.2 billion to the RCV ahead of PR24.[65]

Issues raised by disputing companies

3.9 Two of the disputing companies, Southern Water and Wessex Water,[66] have asked the CMA to reconsider the reduction to notional gearing in our PR24 determinations. Southern Water suggests this should remain at 60%.[67] The arguments put forward are substantially the same as were put forward in representations to our draft determination and were addressed in our final determination.[68] The companies argue that the reduction in gearing is not justified, raising the following issues:

- The reduction was driven by a desire to improve financeability.
- It is not in line with actual gearing of the sector.
- The level of notional gearing is out of line with other regulatory decisions, such as the target credit rating.
- The reduction in notional gearing increases the requirement to raise new equity, increasing the risk that companies cannot access sufficient equity.
- Reducing gearing does not reduce the overall business risk, just transfers it from debt to equity.

[65] This includes £0.3 billion of reconciliation adjustments that update for outturn data for the period 2019-20
[66] [OF-OA-004] Wessex Water, Statement of Case, March 2025, para 10.12 (g), p.90
[67] [OF-OA-003] Southern Water, Statement of Case, March 2025, para 205, p.91
[68] [OF-OA-19] Ofwat, PR24 final determinations: Aligning risk and return –appendix, December 2024, Section 2, p.34-39

3.10 Southern Water states that the reduction to notional gearing is an error because:[69]

- We have increased business risk for the notional company but sought to offset the impact of this on the notional company's financial resilience by reducing its gearing. Southern Water argues that this does not reduce risk at the enterprise level, rather transfers risk from debt to equity and could instead worsen risk at the enterprise level as ODI exposure increases mechanistically in proportion to the quantum of regulated equity;

- Southern Water also argues that as we place weight on actual debt costs to estimate the allowed return on debt, we should also place weight on actual gearing levels to estimate notional gearing, to maintain consistency across the allowed return. It states the sector average gearing as 68.9%; and

- The companies argue that 60% gearing typically implies a Moody's and Fitch Rating (Fitch)'s rating of A3/A-. The companies argue that this suggests that gearing is not a constraint for the notional company.

3.11 Southern Water also argues that:

- we have used notional gearing to solve financeability constraints in the notional company over successive price control periods.[70] Notional gearing was reduced from 62.5% to 60% at PR19 and to 55% at PR24. The company argues this undermines the role of financeability as a meaningful cross-check on the calibration of the price control. Having allowed the approach at PR19, it considers it would be inappropriate to endorse the approach at PR24, especially as the rate of reduction is double the reduction at PR19;
- a reduction in notional gearing increases the requirement for new capital which increases the risk that companies are not able to secure the financing required to deliver the capital programme;[71] and
- the reduction may have unintended consequences such as increasing agency costs, on the basis that higher interest payments on debt reduces the cash available to management to use on undertaking wasteful expenditure.[72]

3.12 Wessex Water has stated that:

[69] [OF-OA-003] Southern Water, Southern Water Statement of Case, March 2025, Executive summary, para 63, p.23
[70] [OF-OA-003] Southern Water, Southern Water Statement of Case, March 2025, Chapter 7 WACC, paras 566-570, pps.500-501
[71] [OF-OA-003] Southern Water, Southern Water Statement of Case, March 2025, Chapter 7 WACC, para 571, p.501
[72] [OF-OA-003] Southern Water, Southern Water Statement of Case, March 2025, Chapter 7 WACC, paras 572-574, p.501

- "Ofwat's decision to reduce the level of notional gearing to 55% rests on the assumption that an efficient water company would (i) be able to attract more equity to finance the investment required at PR24; and (ii) naturally aim to finance more of its capital structure through equity at PR24 than at PR19. Moreover, Ofwat does not appear to have considered whether a gearing of 55% is, in fact, efficient, nor whether it is consistent with the other assumptions it makes regarding the efficient company, including the cost of debt (for example) under its Final determinations."[73]
- Wessex refers to work by Economic Insight from 2024.[74] The report suggests an efficient level of gearing for an average UK water company between 58% and 70%, with a point estimate of 66% based on its own regression modelling. The report also argues that harm to customers may arise from setting the notional gearing level too low as well as too high, due to under-funding companies for the allowed return and overstating the financeability assessment.
- Southern Water also argues that we are wrong to assume that companies can reduce notional gearing naturally through inflation.[75] It suggests this contradicts a previous information notice that companies should reinvest inflationary gains rather than pay these out as dividends. Southern Water also state that we have overlooked that a third of the notional companies' borrowings are inflation linked and therefore the notional company is less sensitive to inflation. And, in practice, companies have a significantly higher share of index linked debt, setting out a sector average of 54.7% as at 31 March 2024. The company argues that the reliance on midnight adjustments from previous price controls is inconsistent with the longstanding regulatory position that each price control is set on a standalone basis. In consequence, it states that the impact of midnight adjustments are not relevant for the calibration of notional gearing for AMP8.

Our assessment

3.13 We would support the CMA deprioritising the redetermination of the notional capital structure. As noted above, we set notional gearing at 55% in our final methodology in 2022, having previously signaled that a lower level of notional gearing may be appropriate, providing companies with the opportunity to better align their capital structures with the notional gearing level should they wish to.

3.14 We consider it incorrect to ignore the effect that high levels of inflation have had on companies in the 2020-24 period in assessing the evolution of notional gearing from one price determination to the next. We assess that the level of inflation over 2020-

[73] [OF-OA-004] Wessex Water, Wessex Water - statement of case, March 2025, 10.12 (g) p93
[74] [OF-RR-019] Economic Insight, 'Evaluating the case for a gearing incentive mechanism, A report for Southern Water', April 2024
[75] [OF-OA-003] Southern Water, Southern Water Statement of Case, March 2025, Chapter 7 WACC, paras 579-584, p.501

2025 means that the a company with the notional capital structure would naturally de-gear by more than 5%.

3.15 Our approach to setting the level of notional gearing is consistent with the UKRN, which sets out that 'the notional gearing assumption should reflect the regulator's assessment of the balance of risks facing the regulated company, a wide range of benchmarks on gearing levels and overall regulatory policy objectives, not just that of the actual company (or companies) in question."[76] However, we respond to the issues raised by the companies in the following section for completeness.

3.16 The points raised by the disputing companies are broadly the same as were raised and addressed by us through the PR24 process. Most of the points were raised in response to our draft methodology and were addressed in the final methodology.[77] Additional points raised by Wessex Water in its PR24 business plan were addressed in our draft determinations. We also draw the CMA's attention to the fact that four companies accepted or did not challenge the gearing level of 55% that underpinned our draft determinations. Furthermore, our understanding is that not all of the disputing companies have raised concerns about the level of notional gearing in their statements of case.

3.17 As our position on these matters was set out in our PR24 documentation, we do not include any new material in our response, the following text summarises our position on these issues as we have previously set out.

3.18 Our view remains that there is a case for a stronger role for equity in the notional capital structure. A higher equity buffer than applied at PR19 will help to ensure the notional capital structure is resilient to a more uncertain future and that it remains resilient in the context of the revenue that is at risk as a result of service performance. We consider there are benefits to adopting a lower notional gearing level at PR24, as it helps to ensure a company with the notional capital structure has the capacity to continue to raise finance efficiently to enable it to deliver the expected programme of investment.

3.19 We consider a reduction in gearing of circa five percentage points is achievable for the a company with the notional capital structure ahead of 2025, taking account of the benefits of high inflation for equity in the current regulatory period. These considerations underpin our decision to set notional gearing at 55%. We signal our decision now as this provides companies the opportunity to revisit and align their structures with the notional level ahead of PR24 should they want to.

[76] [OF-RR-015] UK Regulators Network, UKRN guidance for regulators on the methodology for setting the cost of capital, Notional gearing, March 2023, Recommendation 9
[77] [OF-RR-020] Ofwat 'Creating tomorrow, together: Our final methodology for PR24', section 4, pp24-33

3.20 The level of notional gearing in all previous regulatory determinations in the water sector (including water sector determinations made by the CMA and its predecessors) have been in the range 50%-62.5%. We have not chosen gearing that aligns with the actual levels maintained by water companies, reflecting our position that companies remain responsible for their own financing choices within the context of our determinations, their licence and company law. We first proposed the notional gearing level at 55% in the PR24 final methodology, having set it under a framework that we had first consulted on in our risk and return discussion paper published in December 2021.[78] This has provided companies with opportunity to better align with the notional capital structure should they wish to.

3.21 We considered the analysis put forward by Economic Insight as part of our draft determinations, where we set out the shortcomings in the analysis: [79]

- EI's proposed efficient level of gearing is towards the top of Moody's revised guidance for the credit rating two notches above the minimum investment grade (Baa1); this could suggest that a gearing level of 66% provides little headroom within the Baa1 category.
- It is not clear how valid the comparative analysis is for the specific issues within the water sector. Our economic advisor, CEPA sets out that EI does not explain how their model controls for differences across industries and regulatory regimes. Insufficient evidence has been provided to demonstrate that EI's prediction is relevant for water companies when the model is estimated on a broad comparator set, or to demonstrate the validity and robustness of their results.
- EI provide no indication that its predicted level of gearing is efficient. The point estimate reflects observed levels of gearing, and firms are not necessarily optimising their capital structure.

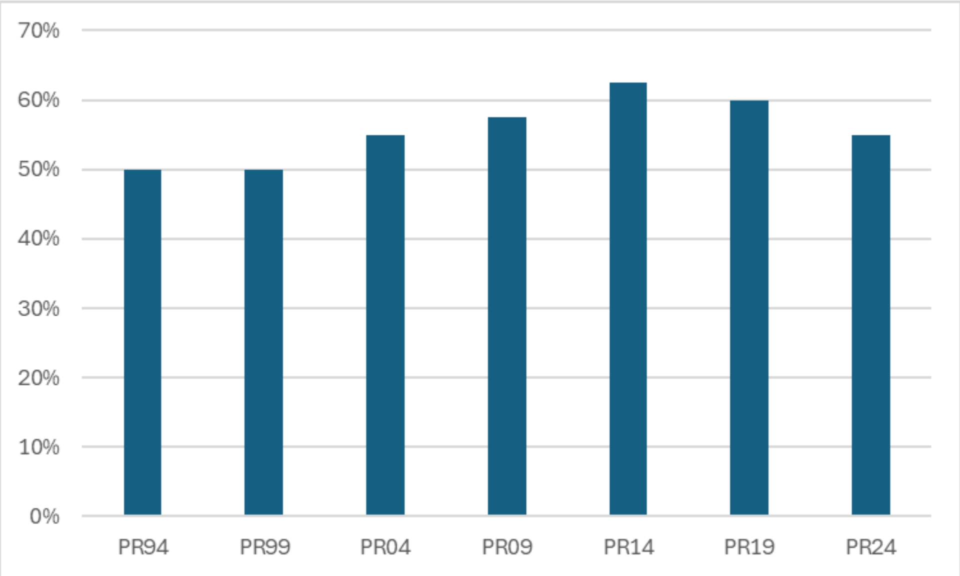
3.22 As Southern Water sets out, our information notice in relation to assessing dividends declared or paid states that we would not expect exceptional gains accruing as a result of high inflation to be distributed as dividends.[80] However, Southern Water fails to fully recognise our position that benefits could be retained to strengthen financial resilience *or* reinvested. Southern Water suggests that companies overspending on totex over AMP7 may be evidence of reinvestment. However, in this case, we would expect this to be evident in the level of performance for customers and the environment, it is contrary to arguments put forward by companies that have reported overspend in 2020-25 and in the case of Southern Water is contrary to the position

[78] [OF-RR-018], Ofwat, 'PR24 and beyond: Discussion paper on risk and return', December 2021, p.40.
[79] [OF-OA-019], Ofwat 'PR24 final determinations: Aligning risk and return, December 2024 pp37-38
[80] [OF-OA-011] Ofwat, IN 23/04 Guidance on factors Ofwat considers in assessing dividends declared or paid, June 2023

that at least part of the overspend is the result of the need for the company to deliver a turnaround in performance.

3.23 We have revised our assessment of notional gearing at most previous price control periods and we have not provided funding at previous price reviews specifically for changes to notional gearing. Indeed there was no such remuneration provided for this in our PR19 determinations or the CMA's PR19 redeterminations, where the notional gearing level had reduced from 62.5% at PR14 to 60% at PR19. And we had set out in the PR24 final methodology that had moved by 5 percentage points between reviews in previous regulatory determinations. We reproduce the chart from our PR24 final methodology that illustrated this in Figure 3.1.

Figure 3.1 Notional gearing from 1995 to 2025



Source: Ofwat prior price determinations

3.24 In the final determination, we updated our illustrative analysis of the impact of inflation on notional gearing between 1 March 2022 and 2025, based on out-turn inflation and latest Office for Budget Responsibility (OBR) inflation forecasts for 2024 and 2025, which showed that notional gearing could reduce by up to 7% by the start of the 2025-30 period[81]. This analysis, combined with the dilutionary effect of high levels of inflation before 2022 suggested that a 5% gearing reduction would have been likely to be achievable even with higher input prices. Therefore, we maintain that an efficient company with the notional capital structure would have reduced gearing due to the impact of high inflation over 2020-25.

[81] [OF-OA-020] Ofwat, 'PR24 final determinations: Aligning risk and return –appendix', December 2024, Table 2:illustrative impact of forecast inflation on notional gearing between 31 March 2022 and 2025, p.38

4. Allowed Return on Cost of Debt

Final determinations

- We set an allowed return consistent with an efficient company with the notional structure.

Companies' statement of case

- Disputing companies raise concerns with the cost of debt in the final determination. These focus on the methodology used to estimate embedded debt, the treatment of company-specific characteristics, the calculation of the benchmark index adjustment and the additional costs for liquidity, cost of carry and basis risk.

Our response

- Most changes that companies proposed have very little impact on the allowed return. Those that have a more material impact are not backed up with robust evidence. In the case of the benchmark index adjustment, we question the company analysis of its quantum and in any case there is no evidence that it will not reduce. In the case of cost of carry and basis risk, there is no evidence that water companies across the industry are incurring the costs that are claimed.

Embedded Cost of Debt

Our final determinations

4.1 In our final determinations we followed the approach we set out in our PR24 methodology and draft determinations, which largely followed the approach taken in the CMA's PR19 redeterminations. The PR24 approach benefitted from the data improvements resulting from improvements we have made to the reporting requirements for the cost of debt. For the final determinations, we updated for data in the companies' 2024 Annual Performance reports.

4.2 Our approach placed equal weight on two benchmarks:

- 'All-in' costs, which are derived from debt instruments in the same proportions of fixed rate, floating and index-linked debt held by companies; and,

- ‘notional-actual’ costs, which focus exclusively on fixed and index-linked instruments constrained to match the proportions defined in our notional structure.

4.3 As in our draft determinations, we excluded certain instruments from our benchmarking assessment. These included swaps, junior debt, and wrapping fees. These instruments do not reflect the debt structure of an efficient company operating with the notional capital structure.

4.4 We considered stakeholder representations, including those referencing the KPMG model commissioned by Water UK. While we acknowledged that the model provided greater granularity, we did not consider its material increase in complexity to be proportionate or suitable for adoption.[82] Most material differences between the models related to differences of view that were policy-related.

4.5 We made two changes to our policy approach in response to representations:

- We revised our treatment of 2024-25 embedded debt. Rather than basing this on forecast RCV growth and notional gearing, we used actual debt issuance up to September 2024 and forecast issuance to March 2025, as reported by companies, to reflect more accurately expected sector financing needs.

- We implemented the adjustment for index-linked debt not issued at par value. This slightly improved the accuracy of our assessment without significantly increasing model complexity.

4.6 We used data from the average of the A and BBB-rated GBP iBoxx non-financials 10+ year indices as a cross-check on our assessment. The scenarios used for our cross check were universally lower, and in some cases much lower, than the assessment determined from the balance sheet approach. However, for our final determinations, we decided not to treat this cross-check as an upper limit. We considered that doing so could have posed a risk of under-remunerating reasonable debt costs, which could negatively impact investor returns and hence affect investor sentiment toward the water sector.

[82] KPMG's model calculated the cost of embedded debt considering specific dates and attempts to model bespoke features of company debt instruments, resulting in a large and complex model. As we use constant long-term assumptions over the 2025-30 period, there is little impact from calculating on a daily basis. Any impact would be further muted when taking an average for large companies.

Issues raised by disputing companies

4.7 Northumbrian Water does not have material concerns regarding the methodology for the allowed return for the cost of embedded debt. Other disputing companies concerns focus on the methodology used to estimate embedded debt, the treatment of company-specific characteristics, and mechanisms to address risk and market conditions. Anglian Water, Southern Water, South East Water and Wessex Water raise concerns about over-reliance on the 'notional-actual' approach, which adjusts only for debt mix; they argue the structure is not achievable under the actual structure. Anglian Water, Southern Water, Wessex Water and the KMPG report submitted by Anglian Water, Southern Water and South East Water raise concerns about the exclusion of swap costs, particularly interest rate, inflation, and currency swaps, and consider these to be part of efficient debt management.

4.8 Southern Water and South East Water suggests that more account should be taken of water company actual embedded debt costs.

4.9 Southern Water suggests the embedded debt allowance underfunds actual company costs, on the grounds that the sector average allowance does not capture timing, market conditions, or risk management strategies. Southern Water proposes a 25:75 risk-sharing mechanism for embedded debt, arguing the current 0:100 allocation is inconsistent with other cost areas and it is wrong to allocate 100% of the risk between allowance and actual costs to companies. Southern Water state that a symmetric approach would better support incentives, reduce underfunding risk, and improve financeability, as actual costs are often driven by factors outside management control. South East Water similarly suggests that interest cost underperformance, linked to infrequent issuance, should be shared with customers, in line with totex sharing. We expand further with the comments South East Water makes in Section 6 below.

4.10 Disputing companies also request that the CMA reflect the latest market evidence for 2024-25.

Our assessment

‘Notional-actual’ approach

4.11 The ‘notional-actual’ approach was introduced by the CMA as part of its PR19 redeterminations and we adopted this approach for our PR24 methodology.[83]

[83] [OF-RR-013], CMA, Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, final report. March 2021. See 9.615 and 9.794

4.12 One aspect of the 'notional-actual' approach is that it focuses only on an assessment of the cost of index-linked and fixed rate debt, ignoring the impact of floating rate debt. In our final determinations we used the rates as at September 2024 for the assessment of floating rate debt. This does not reflect current expectations of rates over the 2025-30 period. For instance, the OBR expects the base rate to fall to below 4% within the 2025-26 financial year.[84] As shown in Table 4.1, if a change to 3.75% is included in the cost of debt model, it closes much of the gap between the 'all in' and 'notional-actual' approaches and aligns with the nominal cost of embedded debt set in our determination.

Table 4.1: Assessment of the cost of embedded debt

Embedded Debt Approach	Nominal Rate
FD 'all in'	4.89%
FD 'notional-actual'	4.76%
FD 'all in' with updated floating rates based on bank rate changing to 3.75%.	4.82%

Excluded instruments

4.13 Most disputing companies and the underlying KPMG report make substantial points about debt instruments that we excluded in our benchmarking assessment, particularly regarding swaps.

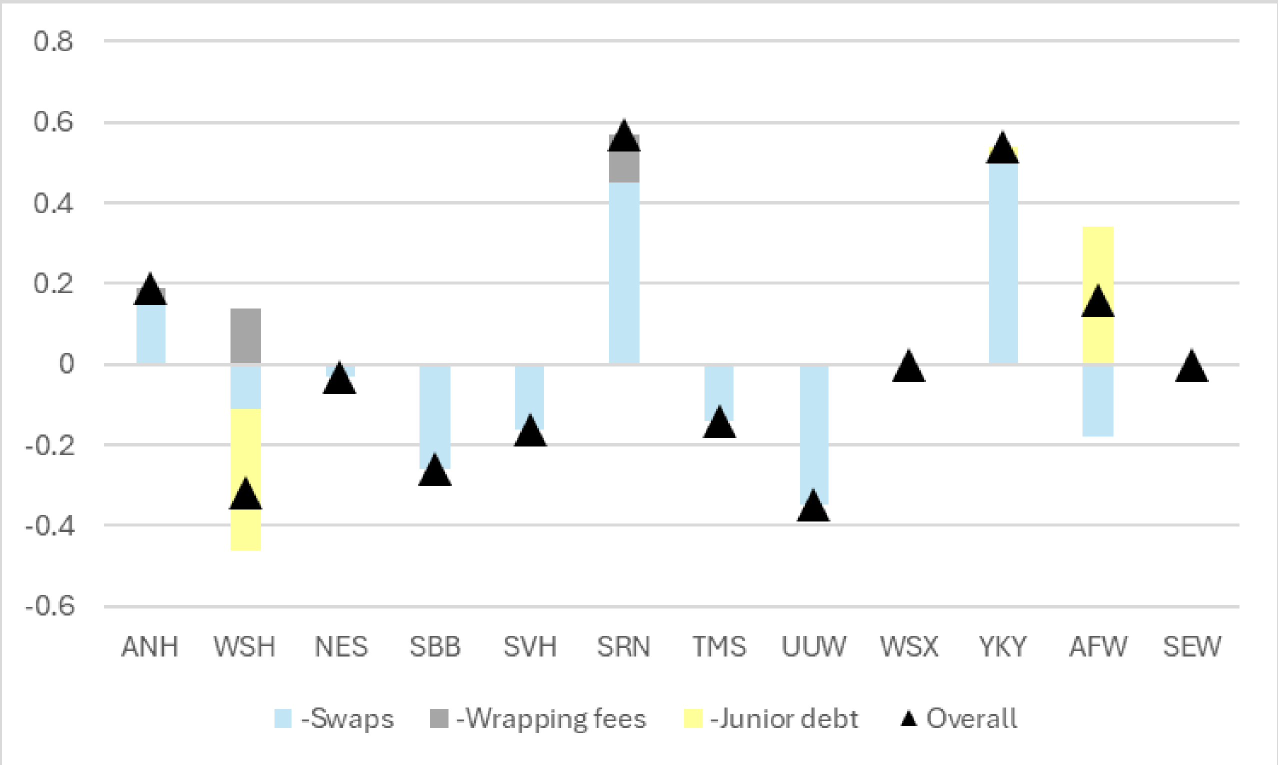
4.14 Our decision to exclude swaps from our assessment of the cost of embedded debt is a continuation of policy that we (and other regulators) have applied in past for the purposes of setting a regulatory determination:

- We do not consider that it is necessary to include the cost of all swaps for the purposes of setting a price determination. There is sufficient information contained in the underlying debt instruments that can be used for the purposes of setting the cost of embedded debt. Companies put swaps in place for a number of reasons that relate to their own treasury policies. While we accept it is reasonable to include the costs of cross currency swaps in our analysis, we do not consider it reasonable to include costs associated with treasury management choices. For example, it may not be appropriate to include the cost of swaps put in place by companies whose financial structures depart materially from the notional structure, where those swaps have been put in place to improve short-term cashflow financial ratios.

[84] [OF-RR-022] Office for Budget Responsibility, Economic and fiscal outlook, March 2025, pp 19 Box 2.5.

- Incorporating these instruments would complicate the assessment and increase the potential for contestability. In order to assess the cost of embedded debt it would be necessary to have a detailed understanding of each swap instrument to make a judgement about how the relevant costs should be included within the assessment of the cost of embedded debt.
- At a sector level, it generally makes little difference with the majority of companies having a slight upward or downward impact as Figure 4.1 shows. Southern Water and Yorkshire Water have the largest impact, but these companies have made use of the risky swap arrangements discussed in our Financial Resilience Discussion paper.[85] These arrangements should not feature in a company with the notional capital structure and we do not consider these arrangements should be included in an assessment of the cost of debt.

Figure 4.1 Impacts on cost of debt of excluded instruments estimated at PR24 draft determinations



4.15 Southern Water, Yorkshire Water and, to a lesser extent, Thames Water have made use of 'kick the can swaps' to manage challenges under their actual structures and these do not have features that are relevant to a notional structure.

[85] [OF-RR-023] Ofwat, Financial resilience in the water sector: a discussion paper, December 2021. pp15-19.

4.16 One aspect of swaps is that often the liability is paid out in advance of other creditors and therefore can impact the credit worthiness of companies. For example, by March 2022 Yorkshire Water's mark to market (MTM) liability was an all-time high of ~£3.0bn (~39% RCV) which raised significant concerns about Yorkshire Water's financial position. While this has now reduced, a risk remains that may impact the market view of Yorkshire Water's cost of debt.

4.17 Given the complexity that can arise from the use of swaps, we continue to consider that these should be excluded from the calculation of the cost of debt as these are not relevant to a company with the notional structure, that the introduction of such arrangements is a management choice and that companies are best placed to manage the risk and hence consequences of the financing arrangements that they put in place.

Company specific circumstances

4.18 Southern Water and South East Water claim we have not taken into account company specific details on when they were required to raise debt.

4.19 We have not identified this to have been an issue in the Statements of Case submitted by other companies. Nevertheless, we have extended our analysis on the Index-led cross check that we presented in our final determinations to include the increases in each company's RCV since privatisation. The collapsing trailing average weighted by the increase in the RCV provides a large range depending if the 15-year trailing average is used or the 20-year trailing average.

4.20 As Table 4.2 shows, the resulting range of the cross checks using company specific RCV growth since privatisation are within 5-15 bps of the figures derived using industry RCV; the lowest figure in the sample is calculated for South East Water despite its claim that this should be taken into account. We do not consider this suggests that company specific examination of the details of when funding was required to increase the RCV is required. In any case all of the cross checks are significantly below our PR24 cost of embedded debt. In its PR19 redetermination the CMA suggested that if this occurred it may need to "ascertain whether actual costs are inappropriately high and should not form the basis of our allowance."[86]

Table 4.2: Indexed cross check using company specific RCV growth

[86] [OF-RR-013] CMA, Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, final report, March 2021. para. 9.637.

	Industry[87]	ANH	NES	SRN	WSX	SEW
15 year weighted collapsing trailing average	4.08%	4.21%	4.17%	4.17%	4.03%	4.02%
20 year weighted collapsing trailing average	4.60%	4.65%	4.61%	4.62%	4.56%	4.53%

4.21 South East Water claims that its relatively high cost of debt is a result of its small size. We set out our examination of the need for a company specific adjustment in our final determinations.[88] For instance Affinity Water's RCV is, and has been, close to South East Water, but Affinity Water has the lowest cost of debt in the industry. Both companies have formed through the merger of smaller companies and the RCV of the respective combined companies RCVs have been within ~10% of each other since 2001. [89]

4.22 As we set out in our draft determinations, [90] we have looked into South East Water's debt issuance in more detail. The relatively high cost of debt is to a large extent due to debt instruments issued between 2002 and 2005 that are still in place today. During this period gearing increased from about 30% to about 80% as a result of the company's own financing decisions. In addition, since 2004 South East Water has maintained a credit rating that is below the level that has been applied for the notional capital structure in successive determinations. In 2004, South East Water's credit rating was Baa2 with Moody's and it fell to Baa3 in 2024. S&P analysis indicates that the yield differential between Baa1 and Baa3 has been over 75 bps over the period 2013-23[91]. The significant levels of debt issued in the 2002-05 period, together with the company's relatively low credit rating have a continued impact on the company's cost of debt performance and hence expected outturn equity returns; and it would not be appropriate to amend the regulatory approach to pass the effect of the company's financing choices, which are an equity risk, to customers.

[87] The industry figures are slightly different to those published in our final determinations as we have updated RCV figures for 2020-25.
[88] [OF-OA-021] Ofwat, PR24 final determinations: Aligning risk and return - Allowed return appendix, December 2024, pp.106-110.
[89] That is the combined RCV of the companies that merged in 2007 to form the current South East Water companies compared to the combined RCV of the companies that merged to form Affinity Water in 2012. The former companies of Affinity Water were in common ownership before 2012, but regulated as separate companies.
[90] [OF-RR-024] Ofwat, PR24 draft determinations: Aligning risk and return - Allowed return appendix, July 2024, p.74.
[91] [OF-RR-113] S&P, The Cost Of A Notch, August 2024.

Cost of New Debt

Our final determinations

4.23 We maintained the framework used at PR19, set out in our PR24 methodology and applied in our PR24 draft determinations.

4.24 Choice of benchmark index: We used the average of the A and BBB-rated iBoxx GBP non-financials 10+ indices. This remained consistent with the target credit rating for a notionally structured company and the approach adopted at PR14 and PR19.

- Averaging period: We used a period consistent with the averaging period used for the risk free rate of 1 month for the purposes of setting the 2025-30 revenue allowances, noting that this will be reconciled at PR29 for the evolution of the benchmark index.
- Addressing uncertainty: We confirmed that the new debt allowance would remain indexed, with an end of period reconciliation at PR29, consistent with our approach at PR19.
- Benchmark index adjustment: At PR19 we applied a downwards adjustment of 15 bps for expected performance relative to the benchmark. For PR24, we applied a 30 bps upward adjustment to reflect current market conditions up to our final determinations and to support a range of tenors and access to international markets. This required judgement over the spread that would endure. Stakeholders presented evidence of increased debt spreads above the benchmark index, particularly since November 2022. Having reviewed company issuances with credit ratings aligned to the notional structure and market data up to September 2024, we concluded that a positive benchmark index adjustment was appropriate (whilst recognising earlier periods of outperformance)[92].

4.25 We calculated a one-month trailing average of our benchmark index for September 2024 of 5.51%. Applying the 30 bps benchmark adjustment and our long-term CPIH assumption of 2.0%[93] resulted in a point estimate for the cost of new debt of 3.74% in real (CPIH-deflated) terms. This is an indexed allowance, and it will be subject to reconciliation at PR29 in accordance with the cost of new debt reconciliation model.

[92] [OF-OA-021] Ofwat PR24 final determinations: Allowed return appendix, December 2024, Figure 15, p.97.
[93] We deflate to real terms using the Fischer equation.

Issues raised by disputing companies

4.26 Northumbrian Water and Wessex Water did not raise any material concerns regarding the policy approach to setting the allowance for new debt.

4.27 Other disputing companies challenge the cost of new debt included in the final determination. Anglian Water and Southern Water's statements of case refer to analysis by KPMG, and focus on the benchmark index adjustment.

4.28 Anglian Water and Southern Water argue that the 30 bps benchmark adjustment applied in the final determination understates the actual premium above the iBoxx A/BBB 10+ index at which almost all water companies issue debt. KPMG provide analysis based on market evidence that it suggests indicates that the average premium on Baa1-rated water bonds issued between November 2022 and January 2025 is 46 bps. It proposes that a more appropriate adjustment lies in the range of 30–50 bps, with a point estimate of 40 bps. Southern Water raises concerns that the benchmark adjustment analysis does not adequately control for tenor.

4.29 Anglian Water also suggests that our calculation relies too heavily on secondary market data. It argues that based on KPMG's analysis that primary market yields, particularly yields at issue, are a more reliable indicator of actual financing costs. However, this contradicts the approach taken by KPMG, who acknowledge that the limited number of new issuances since the FD means primary market analysis may not fully capture current investor risk perceptions or reliably indicate expected conditions over AMP8. For this reason, KPMG relies mainly on secondary market analysis to estimate the benchmark adjustment with the use of the 46 bps estimate from the primary market analysis as a cross-check. KPMG further state that traded yields may understate the true cost of raising new debt, as they do not reflect the new issue premium typically required by investors.

4.30 Anglian Water and Southern Water maintain that the cost of new debt allowance set at 3.74% in CPIH-real terms does not provide a fair or achievable estimate of the costs faced by an efficient company. They note that the spread between Baa1-rated water company bonds and the iBoxx benchmark index has widened since late 2022 and remains elevated.

4.31 Anglian Water and Southern Water cite KPMG analysis which finds that the assumption that the notional company is able to maintain a Baa1/BBB+ rating is unlikely across all three major credit rating agencies. KPMG attribute this to the final determination's proposed return on equity. As such, KPMG argue that spreads that fall at or between Baa1/BBB+ and Baa2/BBB rating may be more realistic for a notionally structured company in the current environment. Anglian Water suggests that Yorkshire Water is likely closer to the notional company.

Our assessment

4.32 No disputing company has disputed either the benchmark index or the period of the trailing average that is used for setting the revenue allowance. The major area of disagreement is on the benchmark adjustment where KPMG has presented data suggesting that the benchmark adjustment should be 40 bps, rather than the 30 bps included in our final determination. The KPMG approach includes adjusting yields to account for differences in rates of gilts across different tenors, based on the assumption that the investors require additional compensation for longer term investments.

4.33 We set out how our approach has been consistent over PR14, PR19 and PR24. We also set out evidence that tenor adjustments are unlikely to be robust and how the most significant increases in bond spreads have been driven by a lack of financial resilience.

Approach at PR19

4.34 At PR19, the cost of new debt included a 15 bps downwards adjustment to the cost of new debt allowance, based on expected performance for the notional company. A similar adjustment was applied at PR14. The PR19 approach considered nominal, fixed-rate bonds with tenor of at least 10 years on the date of issue. We assessed that the debt water companies issued was 31 bps less than the benchmark index over the period 2000-2018, and 44 bps less over the period post-2015. The use of 15 bps reflected some year-on-year variance in performance over time and uncertainty over how this would endure over the forward-looking five-year period of the price control.

4.35 In our analysis at PR19 we did not make any adjustment for tenor. We were not intending to make a like for like assessment. Our aim was to make the benchmark index "a better fit for the new debt costs the sector is observed to actually achieve."[94] One of the ways that firms can issue at lower rates than the benchmark index is by issuing debt at shorter tenors than the average iBoxx tenors.[95]

4.36 The CMA PR19 redeterminations removed the adjustment for the disputing companies, due to concerns around the sample size making it too small to draw statistically significant conclusions, with additional issues highlighted around controlling for tenor or credit rating. Although the CMA assessed that historically up to a c.50 bps

[94] [OF-RR-025] Ofwat, PR19 final determinations: Allowed return on capital appendix, December 2019, p.78.
[95] [OF-RR-025] Ofwat, PR19 final determinations: Allowed return on capital appendix, December 2019, p.81.

matching adjustment could be assumed,[96] the applicability of historic evidence to set a forward-looking adjustment was challenged.

Response to disputing companies

4.37 We disagree with the disputing companies on three key topic areas:

- The relevant benchmark for analysis underpinning the assumption.
- The use of tenor adjustments.
- The interpretation of market evidence on spreads.

Relevant benchmark

4.38 Disputing companies suggest that all water company data should be given equal weight in carrying out an assessment of the benchmark adjustment and refer to Yorkshire Water as likely closer to the "notional company". By proposing this, the disputing companies have therefore proposed an approach that is more closely tied to the structure of an actual company. Our aim is to ensure that customers bear only the reasonable financing costs and not the financing costs that arise as a result of a company's financial choices where these depart materially from the notional structure.

4.39 Our approach is to calibrate the benchmark adjustment by reference to water companies that are most reflective of that notional structure, consistent with the target credit rating of Baa1/BBB+ that was stated in our PR24 methodology. For companies with worse credit ratings we would expect to see higher interest costs (and hence a higher benchmark spread). And in this context, Yorkshire Water carries a Baa2 credit rating, has junior debt that carries a sub-investment grade credit rating and significant mark to market swap liabilities; these features do not align with the simpler structure we have adopted for the notional capital structure over successive price controls.

4.40 Our final determination analysis therefore focused on benchmarks to the combined A / BBB benchmark for Baa1 rated bonds (ten bonds issued by four companies).

Tenor adjustment

4.41 We consider that the tenor adjustments have both theoretical and practical limitations:

[96] [OF-RR-013] CMA, Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, final report, March 2021, para 9.788.

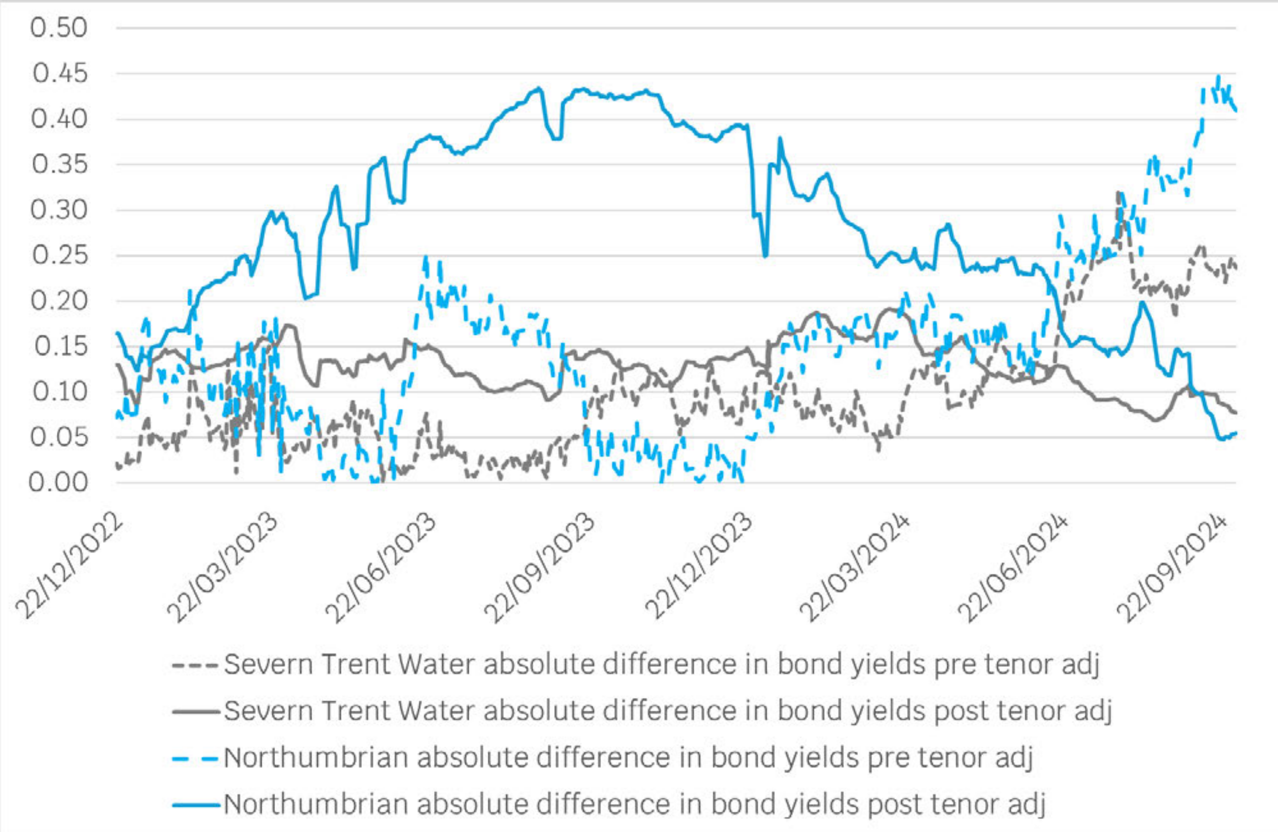
- The theoretical issue, as discussed at PR19, is that water companies can typically outperform the index by issuing shorter term debt than assumed by the iBoxx benchmarks. We have seen this occur historically.
- We also see that in practical terms, tenor adjustments for the same company may not resolve differences in yield, and sometimes have the opposite impact to that posited by the companies. Approaches to tenor adjustments therefore have limited robustness and we have not chosen to apply mechanistic results.

4.42 For example, Severn Trent has had three bonds in the iBoxx index since December 2012 with different tenor and so we would expect the yield of these bonds should be similar once tenor differences are accounted for. Northumbrian Water also had two bonds in the index that cover this period. [97] We adjust each bond by adding the difference in yields between its tenor and a standard tenor using the UK nominal spot curve produced by the Bank of England. Each company has a bond that matures in 2042 and we consider the absolute difference of each of the company's other bonds with it.

4.43 The range of the absolute difference between bonds without any adjustment for tenor for each company is shown in Figure 4.2 as a dashed line. The range post the tenor adjustment is a solid line. However, we find that the variance between the bond yields actually increases once a tenor adjustment is made, for both companies for most of the period assessed. That is, the solid line is mostly greater than the dashed line for each colour.

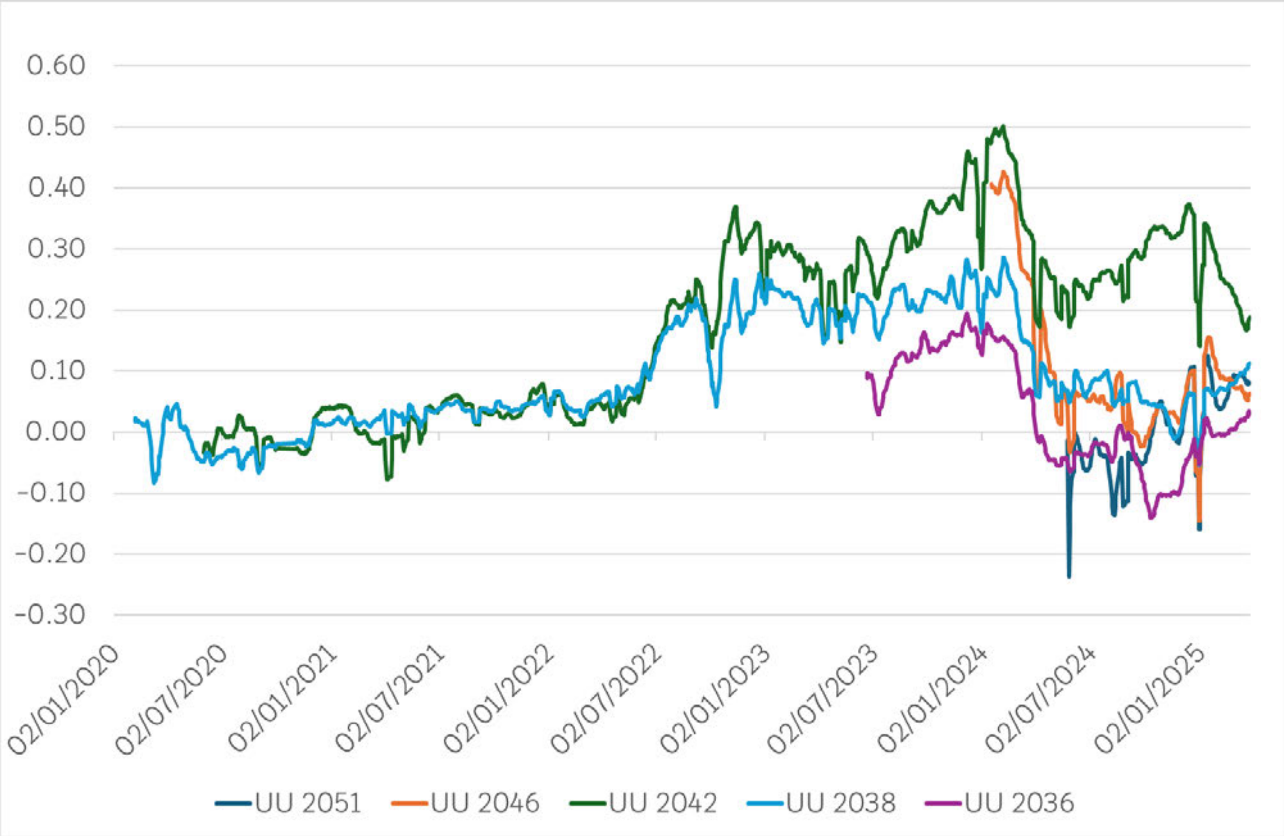
[97] At September 2024 which was our data cut off for final determinations, Severn Trent had three bonds in the iBoxx dataset with a remaining maturity of more than ten years that it had issued before 2023 (XS0735781675, XS2182065149, XS2560756798) and Northumbrian had two bonds (XS0733486848, XS2550206333).

Figure 4.2 Range of differences between Severn Trent bond yields and Northumbrian bond yields post gilt tenor adjustment (7 day averages,%)



4.44 Since our final determinations we have looked at this issue in more detail. For United Utilities, the company with the highest number of bonds in the iBoxx, post gilt tenor adjustment the yields were within 10 bps of one another up to July 2022. However, after this period there have been and remain large variances between bonds as shown in Figure 4.3, with differences in January 2025 still exceeding 30 bps. While it was previously possible to make relatively simple adjustments to bonds using gilts up to the middle of 2022, the principle of obtaining better alignment between bonds has not held in the period since 2022.

Figure 4.3 Comparison of United Utilities bond yields with bond maturing in 2035 post gilt tenor adjustment (7 day averages,%)



Market evidence

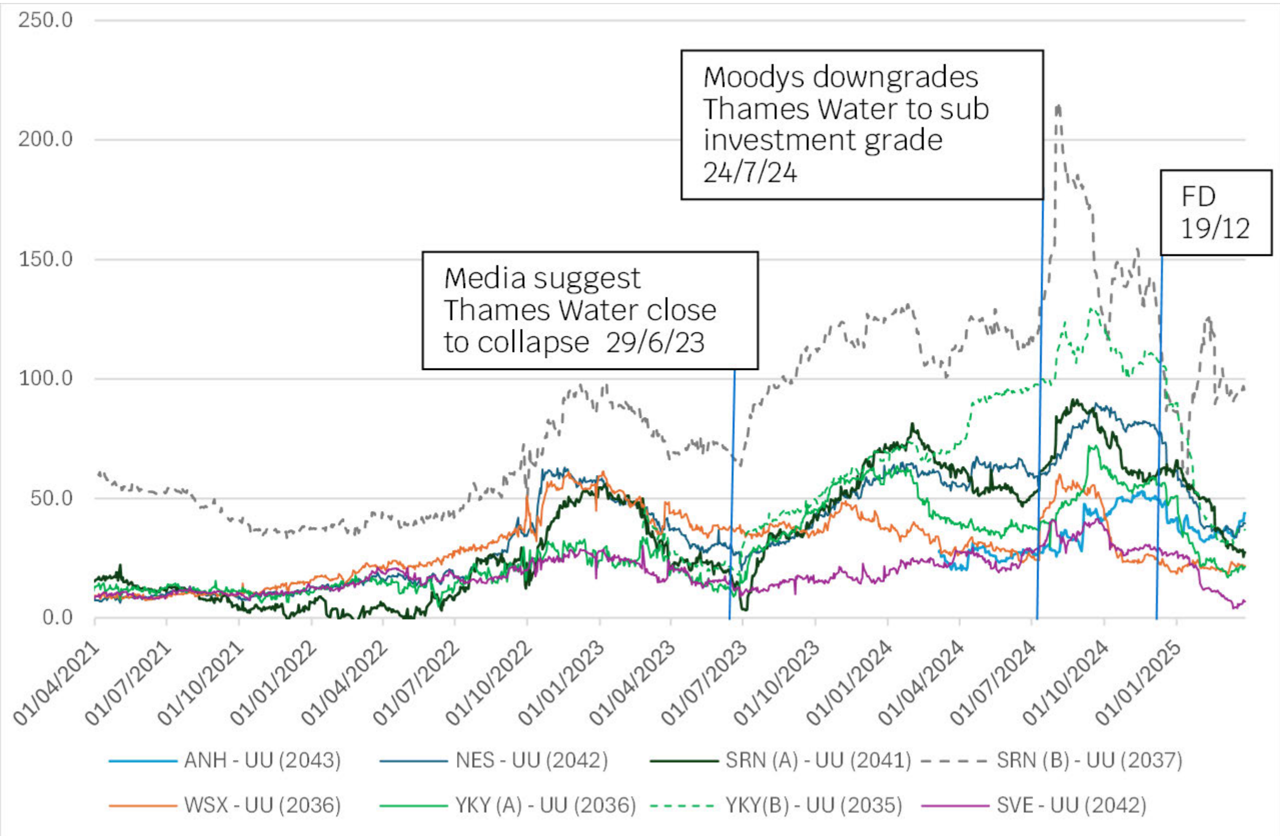
4.45 The performance of water companies in issuing debt against the benchmark index is a matter that has been the subject of debate over an extended period. As noted previously as part of the PR19 determination, over the period 2000-18, companies debt yields were 31 bps less than the iBoxx benchmark and over the 2015-18 period, performance was 44 bps less.[98] As we set out in our PR24 methodology the tendency for water company cost of debt to be less than the benchmark index continued up to 2022. For the 60 fixed sterling bonds issued with a tenor over 10 years over the 2015-22 period the cost was on average 35 bps less than the benchmark index. Of these 13 bonds were issued by companies with a credit rating of baa1 and the average yield was 41 bps less than the benchmark index.[99]

[98] [OF-RR-025] Ofwat, PR19 final determinations: Allowed return on capital technical appendix, December 2019, p78.
[99] [OF-RR-026] Ofwat, Creating tomorrow, together: Our final methodology for PR24 Appendix 11– Allowed return on capital, December 2023, p76.

4.46 We have observed that debt yields increased since summer 2022 with those bonds issued by companies with lower financial resilience experiencing significantly higher yields than companies with greater financial resilience.

4.47 We have sought to compare bonds with similar tenor to avoid the need for any tenor adjustment. As United Utilities has the largest number of bonds in the iBoxx, we have compared all other companies to it. Where it does not have a bond that matures in the same year we have calculated a weighted averaged of bonds that span a similar period and mature either side of the comparator bonds, with weights based on the number of days between maturity dates. We have also taken into account when companies have differences in debt classes to reflect the varying credit risk. The results are shown in

Figure 4.4.Figure 4.4 Difference in selected bonds with United Utilities bonds of a similar duration to maturity.



4.48 We include Yorkshire Water in our analysis as disputing companies have suggested this company might better reflect the notional company. As our explanation in section 2.2, together with the above information, shows, we do not consider that this company currently represents the notional company. We also include Severn Trent Water that we consider has a structure close to the notional company structure and has had a Baa1 rating for a prolonged period of time. Southern and Yorkshire Water have split credit ratings with the most senior debt designated as A in the chart and the subordinated debt designated as B. Credit ratings at six monthly intervals for the companies included in Figure 4.4 are presented in Table 4.3.

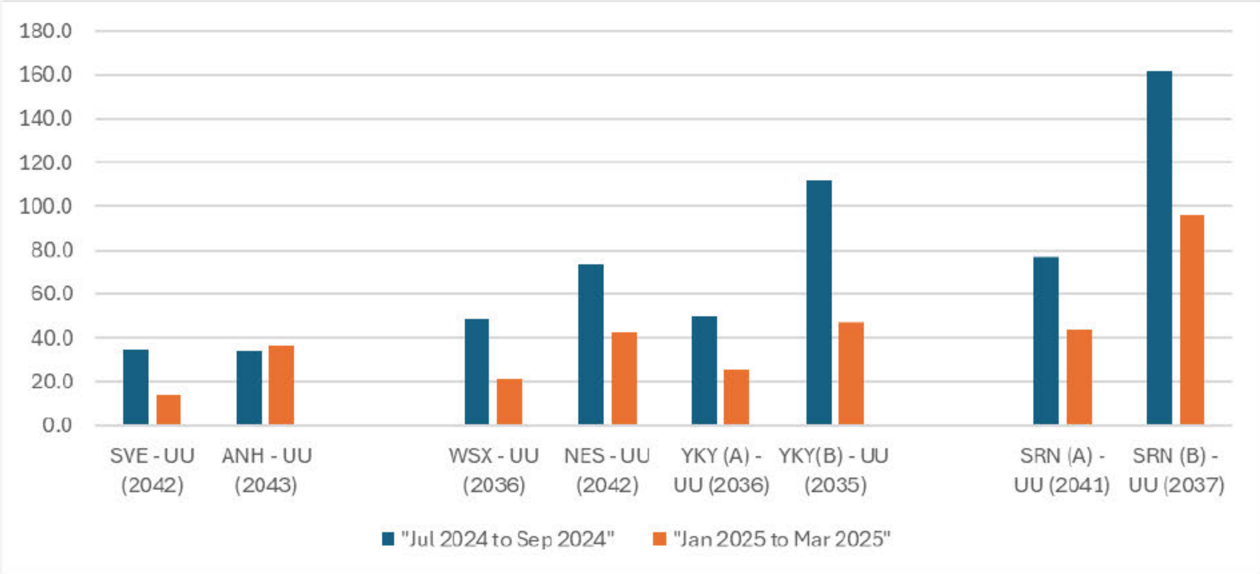
Table 4.3 Credit ratings for water companies 1/4/2021 to 1/4/2024 (Moody's Ratings/S&P Global/Fitch Ratings)

At date	ANH	NES	SVE	SRN	UU	WSX	YKY
01/04/2021	Baa1/A-/A-	Baa1/BBB+/NA	Baa1/BBB+/BBB+	Baa3/BBB+/BBB+	A3/BBB+/BBB+	Baa1/NA/BBB	Baa2/A-/A-
01/10/2021	A3/A-/A-	Baa1/BBB+/NA	Baa1/BBB+/BBB+	Baa3/BBB+/BBB+	A3/BBB+/BBB+	Baa1/NA/BBB	Baa2/A-/A-
01/04/2022	A3/A-/A-	Baa1/BBB+/NA	Baa1/BBB+/BBB+	Baa3/BBB+/BBB+	A3/BBB+/BBB+	Baa1/NA/BBB+	Baa2/A-/A-
01/10/2022	A3/A-/A-	Baa1/BBB+/NA	Baa1/BBB+/BBB+	Baa3/BBB+/BBB+	A3/BBB+/BBB+	Baa1/NA/BBB+	Baa2/A-/A-
01/04/2023	A3/A-/A-	Baa1/BBB/NA	Baa1/BBB+/BBB+	Baa3/BBB+/BBB+	A3/BBB+/BBB+	Baa1/NA/BBB+	Baa2/A-/A-
01/10/2023	A3/A-/A-	Baa1/BBB/NA	Baa1/BBB+/BBB+	Baa3/BBB+/BBB	A3/BBB+/BBB+	Baa1/NA/BBB+	Baa2/A-/A-
01/04/2024	A3/A-/A-	Baa1/NA/BBB+	Baa1/BBB+/BBB+	Baa3/BBB/BBB	A3/BBB+/BBB+	Baa1/NA/BBB+	Baa2/A-/A-
01/10/2024	A3/A-/A-	Baa1/NA/BBB+	Baa1/BBB+/BBB+	Baa3/BBB/BBB	A3/BBB+/BBB+	Baa1/NA/BBB+	Baa2/A-/A-
01/04/2025	Baa1/BBB/A-	Baa1/NA/BBB+	Baa1/BBB+/BBB+	Ba1/BBB-/BBB-	Baa1/BBB+/BBB+	Baa1/NA/BBB+	Baa2/BBB+/BBB+

4.49 In 2021, with the exception of Southern Water, all bonds were within a spread of around 10 bps of each other, irrespective of credit rating. However, since then, differences have increased, with the spreads expanding materially for bonds that carry the lowest credit ratings to around 100 bps. The spreads are not just dependent on credit rating, with Anglian Water A3/A- rated bonds increasing to up to 50 bps more than United Utilities in summer 2024, more than Severn Trent Water's with a credit rating of Baa1/BBB+. Southern Water has a split rating with its higher rated bonds having a credit rating of A3, but its subordinated debt having a much lower credit rating. The higher rated debt, which was rated A3/A- for most of the period, had an average of around a 10 bps spread compared with United Utilities in the year 2021, but increased to more than 90 bps in summer 2024.

4.50 As Figure 4.5 shows, if we compare differences of bond yields to our financial monitoring categorisation, there is an increase in yields for companies at each class. Figure 4.5 includes the average difference for the period July to September 2024 as this was the period when the difference between water company yields and the iBoxx were at the highest. It also includes the most recent data that shows for most companies the differences in the period January to March 2025 have reduced. An exception to this is Anglian Water, though we note Anglian Water's credit rating is impacted to some extent by the relatively large exposure of the group to holding company debt, which could impact the regulated company if there is pressure to fund dividends.[100]

Figure 4.5 Comparison of increase in relative debt yields with Financial Monitoring classification



4.51 Given this information we consider that more weight should be placed on companies such as United Utilities, Severn Trent, South West Water and Dŵr Cymru that all now have a Baa1 credit rating and which are not referenced as 'elevated concern' or 'action required' in our 2024 Monitoring Financial Resilience report.

4.52 Nevertheless, we observe that debt issuance since final determinations has been consistent with the PR24 cost of debt, despite current volatility of water company debt yields relative to the benchmark index and bond issuances not reflecting companies we consider are closest to the notional company. Table 4.4 sets out the publicly disclosed sterling fixed rate issuances since the final determinations.

Table 4.4 Known sterling debt issuances since final determinations

Date	Company	Principal £m	Tenor at Issuance	Rate	Benchmark index	PR24 cost of debt	Difference to PR24 cost of debt
20/01/2025	Yorkshire	50	5.3	5.87%	6.04%	6.34%	-0.47%
20/01/2025	Yorkshire	100	9.8	6.28%	6.04%	6.34%	-0.06%
20/01/2025	Yorkshire	100	10.3	6.32%	6.04%	6.34%	-0.02%
05/03/2025	Affinity	350	15.5	6.39%	6.05%	6.35%	0.04%

100 [redacted]

11/03/2025	Wessex	350	9.5	6.15%	6.06%	6.36%	-0.21%
11/03/2025	Wessex	250	15.5	6.56%	6.06%	6.36%	0.21%
	Weighted average		12.4				-0.03%

4.53 This demonstrates that companies have been able to issue a range of debt with different tenors in line with the rate implied by the PR24 benchmark index taking account of the benchmark adjustment in our final determination, despite their credit ratings and financial resilience not necessarily being in line with what we would expect if they had the notional structure. In addition, Dŵr Cymru, Severn Trent, United Utilities have also raised debt denominated in Euros, indicating that companies can access debt at reasonable rates in international markets. Overall, this is strong evidence that the PR24 cost of debt has been sufficient to support companies to raise debt at a cost comparable to the new cost of debt benchmark.

4.54 As determined at PR19, a judgement is required over how enduring any observed differential is over a forward-looking five-year period. S&P Global's (S&P) 'cost of a notch' suggests an increased cost of 11 bps for a company with a BBB credit rating compared to a BBB+ rating, and 51 bps for a company with a BBB- credit rating compared with a BBB credit rating.[101] This would tend to suggest that an increase over and above the 30 bps benchmark adjustment included in our final determination would suggest a tacit acceptance by a regulator of a material change in credit risk for the notional company compared with the benchmark index.

4.55 We made an adjustment to the benchmark index at PR14, PR19 and PR24. Our approach has been based on historical observations, but has also considered the likelihood over how enduring any differential is over a forward-looking five-year period. At PR14 and PR19 this was a negative adjustment; at PR24 we made a positive adjustment.

4.56 Water companies, and their advisers, have argued for no benchmark index adjustment at PR19 when our approach resulted in a negative adjustment (an approach which was subsequently applied in the redeterminations),[102] but are now arguing for an even higher positive adjustment than we have made, despite arguments presented elsewhere the CMA's PR19 cost of capital methodology should be adopted in full.

4.57 The CMA PR19 redeterminations provide an alternative precedent assessment of the evidence that counters the current view expressed by the companies. In that decision, the CMA considered that the evidence to make a benchmark adjustment was not

[101] [OF-RR-113] S&P, The Cost Of A Notch, August 2024.
[102] [OF-RR-013] CMA, Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, final report, March 2021, paras 9.738 to 9.744.

sufficient, despite having an assessment that the historical differential could be up to c.50 bps.[103] The arguments in favour of not making a benchmark adjustment are that:

- there are difficulties of assessing the cost of company debt in current market conditions;
- notwithstanding this, the differential, no matter who assesses it, remains in the possible range identified by the CMA at PR19 (although we consider much lower); and
- that there is no clarity over how long the underlying reasons contributing to the differential will persist. Indeed it might be the case that investor sentiment to the sector improves following the completion of the current Government reviews; if this is the case and there is a reduction to the level of bond spreads observed at the time the redeterminations are set, then this is a matter that should be reconsidered as part of the redetermination of the cost of new debt.

4.58 Under any scenario, based on current evidence, we consider there is no case to increase the benchmark adjustment based on current evidence.

Proportion of new debt

Our final determinations

4.59 Our final determinations followed the approach set out in the PR24 methodology to determine the proportion of new debt, using the same factors set out in our draft determinations:

- Refinancing new debt: We calculated refinancing requirements from all debt instruments due over 2025-30, as submitted in Table 4B of Annual Performance Reports.
- RCV new debt: Our calculations were underpinned by the RCV difference between years funded by 55% new debt and 45% equity, aligned with the notional capital structure.
- Accretion: We calculated accretion of index linked debt as 2.0% for CPI-linked balances and 2.9% for RPI-linked balances.

[103] [OF-RR-013], Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, final report. March 2021. para 9.788.

- Rounding: The proportion is rounded to the nearest percentage point.

4.60 For the final determinations, we applied a 5% annual RCV growth rate. This resulted in an average share of new debt of 24% over the 2025–30 period. The calculation is set out in the cost of debt model.

4.61 We considered representations from several companies and advisors who proposed the use of company-specific weights or a higher sector average to reflect greater investment needs. However, we found the overall impact to be limited, with most differences driven by refinancing requirements rather than new borrowing for growth.

Issues raised by disputing companies

4.62 Disputing companies challenge the calculation of the share of new debt used in the final determination. Anglian Water and Southern Water's statements of case refer to analysis by KPMG. Representations focus on the data inputs, perceived methodological inconsistencies, and the treatment of company-specific investment needs.

4.63 Anglian Water and Southern Water state that the share of new debt is based on a calculation that contains internal inconsistencies, incorrect inputs, and outdated data. They argue that this has resulted in an underestimate of the sector average share of new debt. Anglian Water and Southern Water refer to analysis by KPMG which estimates the sector average share of new debt to be 28%, compared to 24% set at final determination.

4.64 Anglian Water and Southern Water challenge the 5% RCV growth figure used in the final determination. They argue that the figure is inconsistent with our financial models, which imply RCV growth of 5.7% and 8.1% in nominal and real terms. These companies consider this assumption to be a material driver and argue that, based on KPMG's calculations, adjusting for this would increase the sector average to 28% while retaining the rest of the methodology applied in the final determination.

4.65 Southern Water states that its own real RCV growth over AMP8 is 59%, driven by its capital programme. It argues that this is outside of company control and should be taken into account when calculating the share of new debt. Southern Water suggest that by using company-specific RCV growth rather than the sector average would result in the share of new debt increasing from 28% to 36%. It argues that the failure to reflect this higher requirement risks underfunding and could disincentivise necessary investment.

4.66 Southern Water argue that an understated share of new debt has a direct impact on the overall cost of debt, especially where the cost of new debt is materially higher than the cost of embedded debt. As a result, companies face an increased risk of underfunding. Southern contends that this creates a disincentive to invest, which is not in the interests of customers or long-term financial resilience.

4.67 The KPMG analysis states that the final determination includes all accretion within new debt, which increases the new debt requirement. However, KPMG evaluation is that the accretion should instead be split between embedded and new debt. Doing so would reduce the portion of accretion allocated to new debt and reduce the overall new debt requirement

Our assessment

4.68 The level of RCV growth is an input to the cost of new debt calculation, and this can be calculated only once decisions have been made and financial modelling completed to take account of totex, PAYG and run-off allowances. Calculating the share of new debt is therefore part of an iterative process and was not fully updated for our final determinations.

4.69 We explained the approach we took in response to a queries copied to all companies.[104] The query responses set out that taking all factors into account, including the need to revise the opening value of embedded debt, in addition to the growth of RCV in the final determination, that the impact of using latest figures on the cost of debt stated in our FD was small (we estimate 1 bp on the overall allowed cost of debt). However, as the cost of new debt is indexed, it is not possible to predict whether the overall impact would be positive or negative. For example, a reduction in the cost of new debt benchmark would reduce the impact. It is also possible that the cost of new debt could become cheaper than embedded debt. Therefore, it is not clear the impact that an alternative assumption would have following reconciliation at PR29. We anticipate that whether positive or negative the impact will be small.

4.70 KPMG misunderstood how we take into account accretion in our calculation. We took account of draft determination representations and the final determination cost of debt model includes accretion that increases embedded debt within the model. Therefore, accretion is already included in embedded debt and does not need to be added to it as was necessary at draft determinations. We can observe the net change in embedded debt each year. However, this is different to a company's refinancing needs because of accretion. To find the refinancing requirement for new debt we added together the impact of accretion in embedded debt and the net change in embedded debt.

[104] [OF-RR-030] Ofwat, Final determinations: inbound queries and answers - Updated 27 March 2025, pp.60 and 74.

4.71 The application of a sector wide share of new and embedded debt is a consistent application of the policy applied by Ofwat and the CMA at PR19 and in previous determinations. It was not raised as an issue by disputing companies as part of the development of the PR24 methodology. As part of our final determinations, we set out that adjusting the split of new and embedded debt to be on a company specific basis had an impact of no greater than 10 bps on the allowed return on debt, once the debt due for refinancing was taken into account in addition to the debt required to support RCV growth.

4.72 Implementing such a policy change in our final determinations would have been a material change at a late stage of the PR24 process. It would introduce further complexity to the process, not just for PR24, but for future price controls in the event that a company specific approach were adopted, thus requiring adequate consultation. It would also increase customers' exposure of the actual financial choices made by individual companies, to the extent that the maturity profile of an individual company's debt instruments was concentrated on any individual regulatory period. This in itself would transfer risk to customers and risk unwinding the notional approach

4.73 Given our assessment of limited materiality, and increased customers exposure to an individual company's financing choices,[105] we do not consider that the adoption of a company specific approach is justified on the basis of information contained in the statements of case. We consider a detailed, sector-wide, consideration of all relevant factors would be required, that includes consideration of the impacts such an approach would bring to future regulatory approaches to test that such an approach is in the longer-term best interest of all interested parties.

Issuance and Liquidity

Our final determinations

4.74 In our final determinations, we maintained the approach outlined in our draft determinations regarding additional debt costs:

- Issuance costs: We allowed 5 bps for issuance costs, consistent with our previous assessment. Our assessment was based on issuance costs included in Table 4B of company annual performance reports, where annualised debt costs are annualised in accordance with debt tenor.

[105] For example, driven by the extent to which a company might have a large concentration of debt falling due for refinancing in any one regulatory period as a result of its past financing choices.

- Liquidity and cost of carry: We upheld an allowance of 10 bps to cover liquidity and cost of carry considerations, reflecting our evaluation of efficient costs for a notionally structured company.

- Basis risk: We reaffirmed our position that no specific allowance is necessary for basis risk mitigation, as we consider this a risk management choice for individual companies.

4.75 We found no substantial evidence that companies typically raise finance 12 months in advance. While we accepted that rate expectations may explain short-term spread movements, we did not change our assumptions and gave companies the benefit of the doubt.

4.76 We applied an adjustment of 15 bps for additional debt costs in our final determinations, consistent with our draft determinations. This an increase to the 10 bps allowed by us and the CMA in the PR19 determinations.

Issues raised by disputing companies

4.77 Disputing companies raise concerns that additional costs associated are not adequately reflected in the cost of debt allowance. These include basis risk, cost of carry, and liquidity costs. All companies reference a report by KPMG as their main source of evidence.[106]

4.78 The main points raised are:

- prefinancing should include both negative free cashflows and maturing debt, in line with credit rating expectations and licence obligations;

- A proportion of the revolving credit facility must be reserved for unforeseen events and should not all be used for prefinancing;

- Instead of the 3-year average iBoxx–SONIA spread to assess the cost of carry used in final determinations, latest data should be used including forward SONIA rates;

- In calculating the liquidity requirement we should use values from the final determination, rather than the draft determination. KPMG suggests that this updates the RCF sizing assumption from 12% to 14% of total debt; and

[106] Wessex Water refer back to its draft determination representations, but the only source of evidence in this was an earlier version of KPMG's report.

- Basis risk should be taken into account either by pricing the additional risk or adding a cost to hedge the risk.

4.79 KPMG estimates an overall range of the increase in the cost of debt between 29 and 44 bps.

Our assessment

4.80 No concerns or views have been expressed in the statements of case (or indeed by companies through the PR24 process) about our calculation of 5 bps allowance for issuance costs. Given the potential for selectivity in the statements of case regarding claims for other issuance and liquidity costs, we would welcome further consideration of this issue by the CMA.

4.81 There are strong links between the requirement for companies to maintain liquidity and cost of carry. We do not agree with KPMG's assessment of the amount of cash we should expect to see on the balance sheet:

- The ring-fencing certificate requirements of the licence require companies to certify that they have "sufficient financial resources and facilities" to enable the company to carry out regulated activities for at least a twelve-month period.

- A range of measures can support companies to maintain adequate levels of liquidity, including, for example, revolving credit facilities.

- Companies do not typically maintain cash necessary to support cashflows for a full twelve-month period. We find there is a considerable gap between the amount of cash that KPMG claims should be on company balance sheets and data reported in company Annual Performance Reports, which for the median company is roughly half the annual requirements excluding refinancing.

4.82 As we set out in our final determinations no company has provided any evidence on the average pre-financing period that finance is raised in advance of need. We have considered 2023-24 which is the last complete year reported by companies and only five companies had prefinancing for twelve months at the start of it.[107] This is the only day in the year for which we have data, but we consider that the year-end may not be typical and the amount of cash could be greater than normal. The median large company held cash equal to 3.6% of debt on the 31 March 2023, whereas the liquidity

[107][OF-OA-021] Ofwat, PR24 final determinations: Allowed return appendix, December 2024, p. 103. Note there was a typo in our final determination document that stated it was 4 companies.

requirements for the following 12 months was 5.9%. The proportion of cash for the median large company varied between 2.6% and 4.1% over the 2020 to 2024 period.[108]

4.83 When adjusted for an appropriate benchmark adjustment applied in our final determinations (30 bps, rather than the 40 bps applied by KPMG), the KPMG approach to the cost of holding cash is comparable at 2.3% compared to the value we used in our determinations – i.e. 2.2%.

4.84 We provided companies with significant opportunity through the PR24 process (in both development of the PR24 methodology and the draft determinations) to provide evidence from their own financing arrangements in support of requests put forward for issuance and liquidity costs. For instance in our draft determinations we stated:

"We remain open to considering high-quality evidence relevant to a notionally structured company in the water sector in advance of final determinations."[109]

4.85 Despite this no evidence was provided by the companies themselves.

4.86 Given the scope for selectivity in company statements of case and the accompanying advisory reports, a full and detailed assessment of reasonable liquidity costs of a company with the notional capital structure would be necessary to establish if the costs claimed by KPMG or in the statements of case are reasonable. This would require a full appraisal of the ongoing cash balances of companies throughout the year, an assessment of facilities such as revolving credit facilities and consideration as to whether the arrangements are reflective of efficient arrangements for a company with the notional capital structure. We do not consider the evidence presented in the statements of case satisfies the evidential threshold for a different approach.

4.87 Consistent with PR19, our view remains that it is not reasonable for customers to bear the claimed costs of basis risk mitigation and so no allowance is required. The costs of basis risk mitigation arise as a result of company financing and risk management choices. We do not consider that providing a specific allowance represents a fair allocation of risk between companies and customers.

4.88 In particular, where companies request increased allowances for basis risk mitigation they have not engaged fully with our assessment that the presence of fixed rate debt in the notional structure provides risk mitigation to the extent that average inflation has a tendency to be more than the Bank of England target. This evidence was set out

[109] [OF-RR-024] Ofwat PR24 Draft determinations: Aligning risk and return: Allowed return appendix, July 2024, p.83.

in our draft determinations[110] and our final determinations.[111] And, as set out in section 2.2 the evidence of the likelihood of an overall benefit in the 2025-30 has increased since our final determinations.

[110] [OF-RR-029] Ofwat, PR24 draft determinations: Aligning risk and return appendix, July 2024, pp31-33
[111] [OF-OA-020] Ofwat PR24 final determinations: Aligning risk and return - Risk and return appendix, December 2024, Pp18-19

5. Allowed Return on Equity

Final determinations

- We set an allowed return on equity of 5.10% (real, CPIH). This was a rounded figure at the top of our CAPM range of 4.58-5.07% which we chose following application of the framework for choosing a point estimate allowed return on equity from the 2023 UKRN Cost of Capital Guidance.
- This represented an increase from our draft determinations figure of 4.80%, following our decision to accept company representations that led to a higher estimate, particularly around Total Market Return.

Companies' statement of case

- Disputing companies propose an allowed return on equity in the range 6.25-7.41%; in three cases higher than that proposed in response to our PR24 draft determinations. This is partly due to using more recent data than our final determination, but mostly reflects different methodological choices:
    - **Risk-free rate:** submissions indicate a range of 2.3-2.8% (real, CPIH), based variously on applying a convenience yield, placing weight on duration-matched AAA-rated corporate bonds, and applying a forward-rate adjustment.
    - **Total market return:** a sole focus on 'ex-post' approaches and short holding periods of 1 year, excluding 'ex-ante' evidence, and in one case decisions from PR04 and PR09 being used to calibrate the TMR upper bound.
    - **Equity beta**: submissions variously argue for greater weight on shorter estimation windows (e.g. 2 year), inclusion of Covid-19 and Viridor sale dummy variables in beta regression, placing weight on National Grid and Pennon, and inference-based estimates drawn from estimated relationships between capex intensity and beta.
    - **Choice of point estimate:** submissions argue for a larger adjustment from the midpoint of the CAPM range than at our final determination, citing debt-based and top-down cross-checks, multi-factor models, and arguments involving asymmetric skew of returns and financeability.

Our response

- New submissions relevant to the cost of equity amount to over 570 pages, accompanied by 111 databook files. We have aimed to address key points in this section, however it is has not been possible to provide a detailed and comprehensive response to all issues. Unaddressed points should not therefore be interpreted as a sign of our tacit agreement.

- **Risk free rate:** Our preferred estimator remains the 20 year RPI-linked gilt rate, yielding a 2.15% CPIH-real risk-free rate on January 2025 data – above the midpoint of the 1.76%-2.34% (real, CPIH) range implied by 10-20 year evidence on RPI-linked gilts and AAA-rated nominal bonds. We do not find evidence of a non-zero positive convenience yield in 20-year ILGs in submitted evidence, and there is some evidence it may have turned negative.
- **Total market return:** Company submissions deviate from established norms of UK economic regulation by dismissing ex-ante evidence and evidence of serial correlation. There is no basis for using implied TMR from PR04 or PR09 as inputs – to do so would embed historic aiming up and violate the 'fair bet' principle. Significant evidence exists to support lower figures than our final determinations point estimate of 6.83% (real, CPIH).
- **Equity Beta:** Companies propose unlevered beta point estimates in the range 0.33-0.36 – significantly higher than the 0.27-0.29 range obtained through averaging results across estimation windows of 2, 5 and 10 years at different rolling average periods (i.e. following the PR19 CMA approach). These higher estimates require adoption of novel approaches to beta estimation involving dummy variables and extrapolating from beta relationships observed in companies that are not 'pure play' water companies. We find the selection process for dummies to be one-sided and sensitive to small changes of dummy period boundary dates.
- **Choice of point estimate:** We observe a 'double aim up' evident in submissions – upward-biased CAPM ranges chosen through adopting novel approaches and rejecting established ones, and a tendency to go to the top end of these ranges or beyond. We also observe that for:
    - **Debt-based cross-checks:** not all company evidence applies an appropriate deflator including an inflation risk premium. KPMG's 'inference analysis' applies a basic measure of debt, and its cost of equity estimates are likely to have wide confidence intervals - rendering it unreliable as a cross-check.
    - **Market-to-asset ratios:** higher implied cost of equity ranges proposed by companies tend to be the result of a selective approach to picking evidence for range endpoints (e.g. using Pennon to inform the upper bound).
    - **Multi-factor models:** there are issues with the stability of factor premia and betas, and that achieving reported ranges seems dependent on dummy-variable implementations focusing on Pennon.
    - **Asymmetry:** we continue to consider there is no material unaddressed asymmetry from our final determinations incentive package, and that our CAPM parameter decisions represent a balanced interpretation of information available at the time.

- Top-down cross-checks: we note difficulties in making like-for-like comparisons to water given different characteristics, and provide evidence from European benchmarks that water returns rank highly.
- Our response is accompanied with advisory reports from our economic consultants, CEPA, and our academic advisers, Professors Wright, Robertson & Mason.

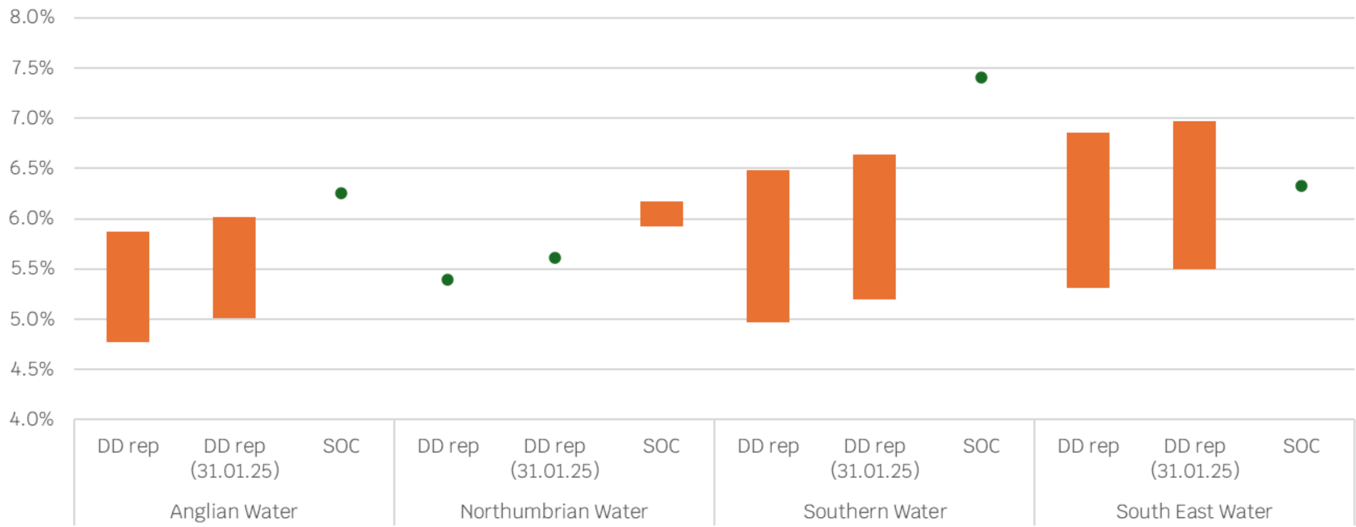
Introduction

5.1 We used the Capital Asset Pricing Model (CAPM) to determine the plausible range for our allowed return on equity, consistent with long-standing practice in UK economic regulation. This required us to estimate values for the risk-free rate (RFR), Total Market Return (TMR), and equity beta. We retained the same 10-20 year horizon agreed with the sector as part of our PR24 methodology consultation, and set the allowed return on equity for the notional capital structure that is financed with 55% debt and 45% equity. As PR24 marked a transition to full indexation of RCV and revenues to CPIH, we set a fully CPIH-real allowed return on equity.

5.2 Our assessment of the range and point estimates for the allowed return on equity proposed by the disputing companies is set out in Figure 5.1. We present the proposed allowed return range or point estimates set out in the company response to our draft determinations, together with a) an estimate of this figure rolled forward to 31 January 2025 using changes in the risk-free rate, and b) the allowed return requested in the statements of case.

5.3 Three out of four companies that requested a specific allowed return figure have asked for a significantly higher figure than either their draft determinations response or the rolled-forward equivalent. This indicates an increase due to methodology changes rather than market data. Wessex Water has not proposed a specific view of its requested allowed return on equity. Such an approach falls well short of our expectations that we set out for business plans, where we expect companies to provide a view of the allowed return, and the proposed revenue profile, underpinned by Board assurance statements that demonstrate how the company's board has assured itself that the proposal is reasonable.

Figure 5.1 Requested return on equity (real, CPIH)



Source: Ofwat analysis of company DD representations and Statements of Case
Note: 1) WSX did not request a specific return on equity. 2) 'DD rep (31.01.25)' represents a rolled-forward estimate of the published DD rep figure based on applying our calculated increase in the risk-free rate between 30/09/24 and 31/01/25 using our final determinations approach.

Risk-free rate

Our final determinations

5.4 Our final determination considered 10- and 20-year datapoints, consistent with our PR24 Final Methodology CAPM horizon of 10-20 years. We considered evidence from nominal and RPI-linked gilts, the PR19 CMA panel's nominal AAA-rated bond index, KPMG's AAA-rated RPI-linked bond sample, and SONIA swap rates. Our estimate did not however place weight on the last two datapoints, due to concerns about the illiquidity and measurement accuracy of AAA-rated RPI-linked bond yields, and our view that the collateralisation of SONIA swaps made them less intuitively interpretable as an investment return.[112]

5.5 We did not apply a convenience yield adjustment, for the following reasons:

- We considered there was insufficient empirical evidence to calibrate an adjustment at the 10- and 20-year horizons. In particular, we did not agree with companies that a 29 bps academic estimate of the convenience yield in 2-year

[112] Placing weight on RPI-linked AAA bonds would have increased our RFR range for 10 year evidence, and placing weight on SONIA swap rates would have reduced our RFR range for both 10 and 20 year evidence.

nominal gilts could be applied to 20-year RPI-linked gilts, given longer-tenor bonds' impaired suitability as collateral. Moreover, we noted KPMG's 2 bps estimate of the convenience yield for 2 year ILGs, which we considered could be zero given measurement error.

- We observed that the AAA-rated nominal bond index used by the CMA in the PR19 redeterminations had a yield slightly below the 20-year nominal gilts rate (which had comparable years-to-maturity). We considered this to undermine the premise that there was a material convenience yield depressing the yield of the latter.
- Concern that estimates of the convenience yield based on spreads between gilt yields and yields on other instruments might instead be picking up the liquidity premium for those instruments.

5.6 We used the September 2024 average of the 20-year RPI-linked gilt rate as our proxy for the risk-free rate (RFR). We assessed the use of this proxy as reasonable, considering support for this approach in previous regulatory decisions (e.g. the CMA RIIO-2 appeals), the benefits of a simpler approach relying on one CAPM framework, and the trivially different figure which would have resulted from placing equal weight on the AAA-rated nominal bond index used in the CMA's PR19 redetermination and the RPI-linked gilts rate.[113]

5.7 We considered that our use of the 20-year RPI-linked gilt yield towards the top end of the range implied by our 10- and 20-year datapoints was a balanced reading of the evidence – as it provided some headroom against the possibility that RPI-linked gilts might be downwardly-distorted proxies for the true risk-free rate. This is as we could alternatively have taken the average of the RFR estimates implied by the 10- and 20-year RPI-linked gilts rate, consistent with our CAPM horizon – and this would have resulted in a lower figure.

5.8 We converted the 20-year RPI-linked gilt yield to a CPIH basis by taking the average yield implied by a) the difference in the RPI and CPI swap rate at the 20-year horizon, and b) the geometric average wedge implied by a 20 year projection of RPI and CPI populated using HM Treasury average forecast data and beyond this forecast, making the assumption that the post 2030 RPI-CPIH 'wedge' was zero.

Issues raised by disputing companies

CAPM horizon

5.9 Southern Water argues we are wrong to use the CAPM horizon of 10 - 20 years set out in our PR24 methodology to select RFR proxy evidence aligned with this horizon. This is as it argues 20-year evidence is better aligned with asset lives in the water sector, the

[113] We estimate this would have resulted in a RFR of 1.54% rather than 1.52%.

approximate tenor of our cost of new debt index, the ILG rate used at PR19 redeterminations, and Ofgem's RIIO-3 SSMD.

Convenience Yield

5.10 Anglian Water, Northumbrian Water, and Southern Water argue that the 20-year RPI-linked gilts rate contains a 'convenience yield' reflecting the money-like convenience and usefulness as collateral of gilts – and thus requiring an upwards adjustment.

5.11 Companies differ in their proposed approach to dealing with this issue:

- Anglian Water proposes a 24 bps convenience yield adjustment based on Oxera's 5-year average of duration-matched AAA-rated nominal bond yields and zero-coupon nominal gilt yields.
- Northumbrian Water proposes a RFR range based on Kairos Economics' analysis, denoted by: a) the Index-Linked Gilt (ILG) yield at the lower bound, and b) the ILG yield plus a 'modelled wedge' based on duration-matched AAA corporate bond spread-to-gilt evidence. This proposal also covered its view that the RFR assumption should be higher to reflect the Brennan framework.
- Southern Water proposes KPMG's approach of adjusting the lower bound of its RFR range (based on the 20y ILG rate) by 15.5 bps, based on the consultancy's view that this is the minimum appropriate adjustment for the convenience yield. KPMG's estimate is based on its range of 2 bps to 29 bps based on 2-year evidence from Diamond & Van Tassel (2025),[114] with 29 bps the directly cited rate for 2 year nominal gilts from the paper, and 2 bps its inferred estimate for 2 year index-linked gilts.

Brennan (1971) Framework

5.12 All companies reference the PR19 CMA panel's decision to draw on the Brennan framework involving a risk-free saving (R_s) and risk-free borrowing rate (R_b), arguing that the risk-free rate used in the CAPM should be higher than the gilts rate (R_s), as it is not a borrowing rate available to market participants.

5.13 The estimation approaches proposed by Northumbrian Water and Southern Water are new, and deviate significantly from the approach adopted by the CMA in its PR19 redeterminations:

- Northumbrian Water proposes a RFR range based on Kairos Economics' analysis, denoted by: a) the ILG yield at the lower bound, and b) the ILG yield plus a 'modelled wedge' based on duration-matched AAA corporate bond spread-to-gilt

[114] [OF-RR-021] Diamond, W. & Van Tassel, P. ' Risk-Free Rates and Convenience Yields Around the World' , 18 Feb 2025

evidence. In its view such an adjustment also addresses the need to adjust for a 'convenience yield' in ILGs.

- Southern Water proposes KPMG's approach of using an upper-bound for the risk-free rate based on applying a 67 bps 'wedge' to the 20-year ILG rate. This 'wedge' is based on the average spread of the 5-year index-linked gilt rate to three of a sample of duration-matched AAA-rated RPI-linked corporate bonds.

5.14 South East Water recommends that the CMA could simply update its approach from the PR19 redeterminations.[115]

5.15 Southern Water argue for an interaction between the Brennan Framework and the convenience yield, arguing that an estimate of the convenience yield must be applied to R_s. In the company's view, the inability to identify R_s due to uncertainty around the convenience yield means that regulators should use the return on the zero-beta asset as R_s and the zero beta asset plus shorting costs as R_b.

Forward rates

5.16 Northumbrian Water proposes a forward rates uplift of 14 bps, as it considers this is 'the market price faced by an investor for managing the risk of the RFR'.[116]

Inflation adjustment

5.17 Oxera suggests that deflating using the CPI swap rate is likely to underestimate the CPIH-real RFR, due to the pricing power of the dealer banks that are underwriting inflation swaps.[117]

Our assessment

CAPM horizon

5.18 We consider there to be strong reasons for maintaining a 10-20 year CAPM horizon, as referenced in the UKRN Cost of capital guidance, and as consulted on as part of our PR24 Methodology, for the following reasons:

- A 10-20 year horizon reflects reasonable uncertainty about the horizon relevant to water investors: it is a long horizon, but we are not overly prescriptive about how long.

[115] [OF-OA-005] South East Water - Statement of Case, March, 2025, section.6.14-6.15
[116] [OF-OA-002] Northumbrian Water - Statement of Case March, 2025, Figure 51
[117][OF-RR-058] Oxera (2025), PR24 Cross-checks to CAPM estimation, 21 March, section 2.1.1.

- The default risk premium in gilts increases with tenor due to greater uncertainty at longer horizons. As the risk-free rate should not embed such premia, the 10-year gilt rate is closer to this ideal than the 20-year.
- Southern Water suggests the CAPM horizon should be linked to asset lives, (which on the basis of RCV run-off are on average roughly 24 years.)[118] We do not view this is necessary; the regulatory framework involves resets to the allowed return at 5-yearly intervals and the evolutionary approach from one price review to the next requires there to be reasonable alignment in the regulatory approach from one price control to another meaning there should be a significant degree of predictability in the regulatory approach.
- We do not assume the years-to-maturity of our cost of new debt benchmark index is the notional company tenor-at-issuance of debt. It is therefore irrelevant to our CAPM horizon.
- The CMA's PR19 redetermination was aligned with the principle of a 10-20 year CAPM horizon, as demonstrated by its use of 10- and 20-year holding periods for TMR estimation.[119]
- Southern Water (and other companies) did not raise objections to the use of a 10-20 year CAPM horizon in our draft and final methodology,[120] when they had an opportunity to.
- Acceding to late-stage requests to change framework parameters may undermine future company incentives to engage earlier in the price review process, and reduces consistency and predictability for investors.

Convenience Yield

5.19 The magnitude of any convenience yield (CY) in gilts is a matter of ongoing debate in UK economic regulation. We note that in the PR19 redeterminations, the CMA did not quantify or make an adjustment for the convenience yield, and the RIIO-2 CMA panel did not identify Ofgem's decision to not apply an adjustment for the convenience yield as an error.[121]

5.20 The proper calibration of CY is an important issue. Convenience yield adjustments that are poorly-evidenced risk exacerbating rather than correcting any distortion caused by any embedded CY.

5.21 Southern Water and KPMG's arguments concerning the Diamond & Van Tassel paper to inform its 2-29 bps range for the convenience yield are largely not new, and addressed in our final determination, where we stated:

[118] [OF-OA-019] Ofwat PR24 final determinations: Aligning risk and return, December, 2024, p.5
[119] [OF-RR-013] CMA, 'PR19 Redetermination: Final report', March 2021, Table 9-3, p820
[120] [OF-RR-026] Ofwat, 'PR24 final methodology: Appendix 11 – Allowed return on capital', December 2022
[121] [OF-RR-096] CMA, 'RIIO-2 Final Determination: Volume 2A: Joined grounds: Cost of equity', para 5.45

" The only UK datapoint our literature review identified – Diamond & Van Tassel (2021) – used a data cut-off of 27 July 2020 and the longest horizon estimate for gilts was 2 years. We did not accept that extrapolating this estimate to our 20-year horizon was good regulatory practice, due to its age, the less cash-like nature of longer-dated instruments and their greater sensitivity to interest rate changes impairing their usefulness as collateral.'

5.22 KPMG's CY upper bound of 29 bps (based on the 2-year UK nominal gilt CY estimate from Diamond & Van Tassel) assumes the 2-year estimate is a) robust to changing monetary environments, b) not sensitive to increasing tenor, and c) not different for index-linked instruments. These are all assumptions that are contradicted by available evidence.

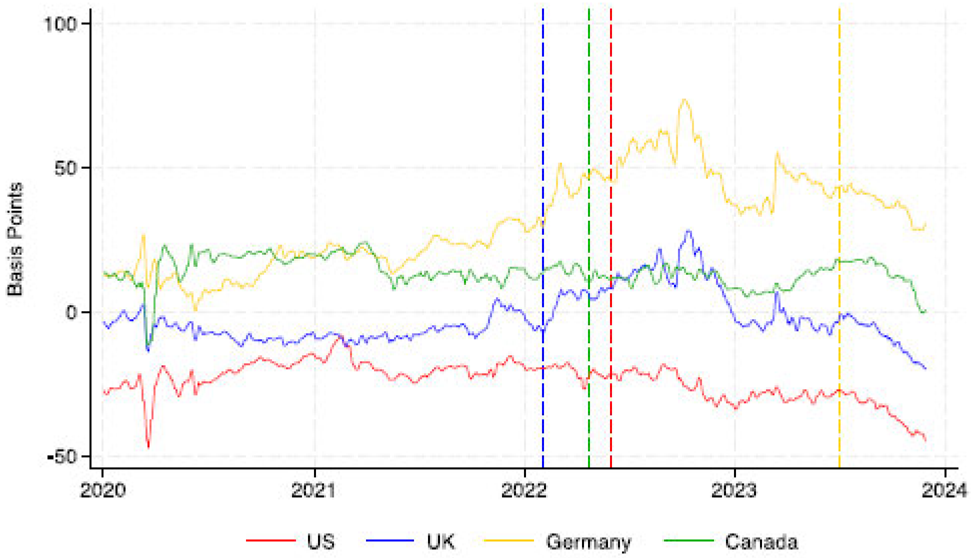
5.23 Firstly, the greater supply of safe assets from quantitative tapering and tighter monetary policy has reduced the convenience yield. As stated on 25/02/2025 by Isabel Schnable, a member of the Executive Board of the European Central Bank:

"we are transitioning from a global “savings glut” towards a global “bond glut”. 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. The fall in the “convenience yield”, in turn, reverses a key factor that had contributed to the decline in real long-term interest rates, and hence r*, during the 2010s."[122]

5.24 As discussed by the academic report supporting our submission[123], this phenomenon finds further support in Jiang et al. (2025),[124] who identify that convenience yields in US Treasuries have declined significantly in recent years, with larger declines in longer-dated instruments, and that there is now a negative 'inconvenience yield' in treasury yields of tenor 5 years and upwards. Du et al (2024)[125] also find a similar reduction in their analysis of a wider sample of countries, which finds that the convenience yield (as measured as the interest rate swap spread vs. gilts) for the UK has reduced since the Bank of England's Quantitative Tapering programme started, and is now negative (Figure 5.2).

Figure 5.2: Estimates of convenience yield for US, UK, Germany & Canada

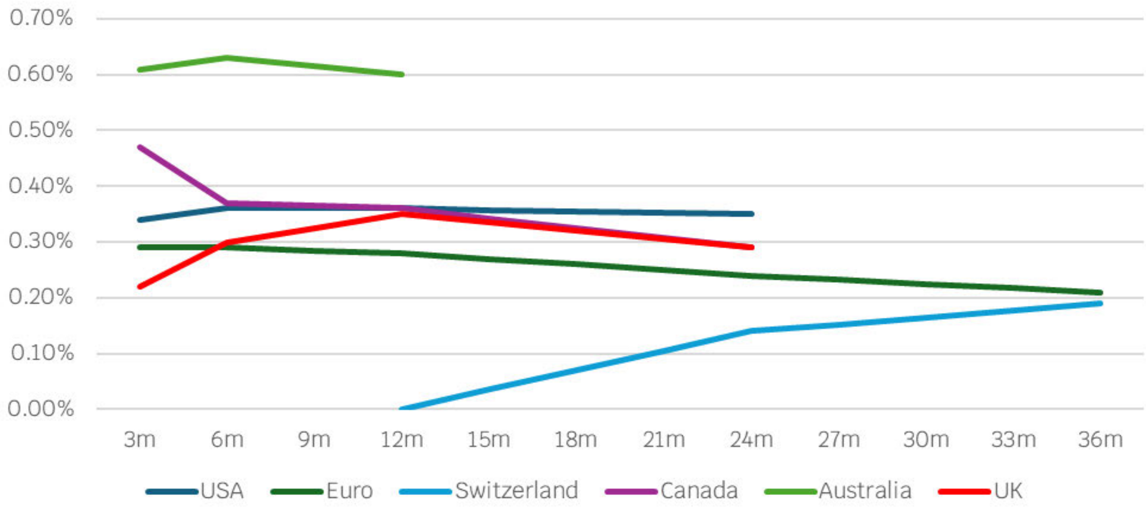
[122] [OF-RR-047] Isabel Schnabel: No longer convenient? Safe asset abundance and r*, February, 2025
[123] [OF-OA-084] Mason, Robertson and Wright, A report on allowed return issues in disputing companies' statements of case, April, 2025, p.19
[124] [OF-RR-048] Jiang et al, Convenience Lost, January, 2025
[125] [OF-RR-101] Du. Et al, 'Quantitative Tightening Around the Globe: What have we learned?', NBER Working paper 32321, April 2024



Source: Du et al. (2024), Figure A4.1, p89
Note: Chart shows spread of 10y Option-Implied Swap (OIS) rate to 10y government bond yield.

5.25 Evidence in the Diamond & Van Tassel paper itself also appears to show a declining term structure of CY across most countries (see figure 5.3), although this finding is limited by the shorter tenor (maximum 3 years) analysed by the authors.[126]

Figure 5.3 Convenience yield in government bonds estimated by Diamond & Van Tassel



Source: Diamond & Van Tassel (2025), Table 2, p16

5.26 While Southern Water argue that 'the collateral value component of CY for longer-dated safe assets is at least the same as that for shorter-dated safe assets,[127] this is implausible, as the value of longer-dated securities is more sensitive to changes in interest rates, impairing its usefulness as collateral. This can be seen from the

[126] [OF-RR-021] Diamond & Van Tassel, 'Risk-Free Rates and Convenience Yields Around the World', Table , p16
[127] [OF-OA-003] Southern Water, Southern Water Statement of Case, March 2025

schedule of Bank of England haircuts for lending collateral for gilts in Table 5.1, which makes it clear that the longer the tenor, the more must be pledged to make up a given amount, reducing longer-tenor gilts' convenience.[128]

Table 5.1: Summary of haircuts for securities eligible for the Bank of England's lending operations[129]

Security	Floating	<1y	1-3y	3-5y	5-10y	10-20y	20-30y	>30y
UK Sovereign debt (coupon)	0.5%	0.5%	1.5%	2.0%	3.5%	6.0%	8.5%	10.0%
UK Sovereign debt (zero coupon)	0.5%	0.5%	1.5%	2.5%	3.5%	7.0%	10.5%	15.0%

5.27 Finally, KPMG's approach implicitly assumes estimates of CY derived using nominal gilts can be applied to ILGs, but its own analysis indicates that there is a material (27 bps) difference in CY between 2y nominal gilts ILG (29 bps) and NGs (2 bps).[130] While KPMG argues that updating some elements of its 2 bps calculation for a 31/01/2025 cutoff would increase the estimate – all other things equal – this cannot be relied on because the calculation relies on an estimate of CY in nominal 2-year gilts from the Diamond & Van Tassel paper which uses a July 2020 cutoff, and there is evidence since then that the convenience yield has reduced due to the greater supply of safe assets, as set out above.

5.28 In deriving estimates for CY, both Oxera (for its primary approach) and KPMG (for its cross-check) place reliance on the AAA corporate spread-to-gilt to estimate the convenience yield. We note however that these bonds remain illiquid, as demonstrated by their high bid-ask spread (Table 5.2) compared to gilts. Illiquidity is a serious issue as it means trading data is old or sparse or both, and so yield calculations may not reliably reflect recent market rates. KPMG propose half the bid-ask spread as an illiquidity premium in their September 2023 report.[131] Applying a similar approach would indicate a deduction of 25-30 bps; larger than Oxera and KPMG's headline estimates of 24 bps and 15.5 bps, respectively.

[128] A 'haircut' indicates the adjustment to the value of collateral. For instance a £100m bond with a 20% haircut would be treated as having a value for collateral purposes of £80m

[129] [OF-RR-078] Bank of England, 'Sterling Monetary Framework, Summary of haircuts for securities eligible for the Bank's lending operations' 14 April 2025

[130] [OF-RR-084] KPMG, 'Estimating the cost of equity for PR24', August 2024, p34

[131] [OF-RR-085] KPMG, 'Estimating the Cost of Equity for PR24', September 2023, p61

Table 5.2: Bid-ask spreads for AAA-rated and benchmark gilt, Jan-Mar 2025

Bid-ask spread 01/01/25 – 31/03/25 (bps)	AAA corporates	Gilt benchmark
Nominal	49	4
RPI-linked	58	2

Source: CEPA analysis of Bloomberg data

5.29 Oxera's evidence for its 24 bps convenience yield assumption is dependent on three assumptions, which we do not consider hold in practice:

- That the convenience yield accounts for the yield spread: Implicitly, Oxera's comparison of AAA-rated bond yields with duration-matched gilt yields assumes that it does. However, as set out in Table 5.2, AAA-rated corporates are relatively illiquid and carry default risk, so the spread is not a clean measure of the convenience yield.
- That estimates for 14.5-year and 9.5-year gilts apply to 20-year gilts: Oxera again assume that they do, but this is challenged by evidence (as set out above), that the convenience yield is likely to be lower at longer tenors.
- That the 5-year average is representative of the current monetary environment: Oxera prefer a 5-year average (up to 31/01/2025) to inform their 24 bps estimate, but this declines to a spot figure of c.18 bps at the end of this period, which may indicate a weakening of the convenience yield impact, consistent with the shift from loose to tighter monetary policy over this period.

5.30 Overall, we do not find evidence of a non-zero positive convenience yield in 20-year ILGs in recent evidence and arguments submitted by disputing companies.

Brennan Framework

5.31 We assess the new estimates of the risk-free rate following the Brennan (1971) framework to add significant complexity to the simpler approach used by the CMA in its PR19 redeterminations, without clearly offering benefits in terms of increased robustness.

5.32 In the PR19 redeterminations, the CMA used the Brennan framework to derive an estimate of the market RFR as the midpoint of rates faced by the following market participants:

- The risk-free savings rate R_s: The government (20 year ILG rate).
- The risk-free borrowing rate R_b: The highest rated (lowest cost) nongovernment borrowers (simple average of the iBoxx AAA non-gilt 10-15 index; and the iBoxx AAA non-gilt 10+ index).

5.33 The Kairos and KPMG approaches cited by companies find a range of 2.3-2.6% and 2.3-2.9%, using January 2025 data. We however find these ranges to be overstated, as they depart from the CMA's PR19 approach of taking the midpoint of R_s and R_b at the relevant CAPM horizon. Instead, these approaches calculate an AAA-ILG spread based on tenor- or duration-matching and apply this to the 20 year gilt rate to derive R_b. This is inappropriate however because the AAA-ILG spread is calculated for gilts with tenor much lower than the assumed 20 years (in KPMG's case 5 years). It is also unnecessary, because AAA-rated indices exist at 10 and 20 year horizons to directly estimate these rates. Table 5.3 sets out this evidence, together with a cross-check using the yield on one of the nominal gilts (ISIN: XS0295479983) that has c.19 years to maturity.

Table 5.3: 20 year ILG-based and AAA-based risk-free proxies

	10y ILG rate	10Y AAA index (nominal)[132]	20Y ILG rate	20Y AAA index (nominal)[133]	EIB 4.5% 07/03/44 XS0295479983
Years-to maturity	10.0	10.5	20.0	20.8	19.1
Base yield	1.10%	4.93%	1.78%	5.11%	5.32%
20y swap CPI	2.85%	2.85%	2.91%	2.91%	2.91%
20y swap RPI	3.52%		3.28%		
CPIH-real RFR	1.76%	2.02%	2.15%	2.13%	2.34%

5.34 The overall range of 10 and 20 year evidence indicated by Table 5.3 is 1.76% to 2.34%, with a midpoint of 2.05%. We continue to consider that a point estimate of 2.15% anchored on the 20-year ILG rate represents a balanced reading of this evidence, allowing some headroom for measurement uncertainty.

Forward rates

[132] The average of the iBoxx AAA non-gilt 5-10 and 10-15 indices
[133] The average of the iBoxx AAA non-gilt 10-15 and 10+ indices

5.35 We do not agree with statements from Northumbrian Water that a forward-rate is 'the market price for managing the risk of the RFR',[134] or its consultant Kairos Economics' suggestion that providing an uplift is necessary to avoid generating windfall gains and losses for investors needing to invest in a risk-free asset at some point in the future.[135]

5.36 A forward rate is only an estimate at a given point in time of the expected future interest rate, inferred from a shorter- and a longer-tenor rate. For instance, the 3-year forward 20-year rate can be inferred from the 3-year and the 23-year rate. Allowing a higher return than the spot 20-year rate to match the forward rate (a forward rate uplift) does not guarantee that the 20-year rate will be at this level in 3 years time – it is not a futures contract. This means that windfall gains and losses are still possible.

5.37 In addition, our modelling and the nature of water regulation imply the need for equity financing over the course of the control period, rather than as a single financing exercise to lock in a particular rate. An important quality of a good risk-free rate estimate is therefore its predictive power over the 5-year period.

5.38 In its PR19 redeterminations, the CMA drew on a range of academic and regulatory sources indicating that forward rates do not increase forecast accuracy relative to a short trailing average of prevailing rates.[136] This is also our experience based on analysis from our draft determinations, where we found based on data from 2001-2024 that a 3 year forward rate tended overall to overpredict the spot rate (sometimes by margins exceeding 100 bps). We also found that the forward rates approach inferior in terms of the mean squared error criterion, relative to using a simple 30-day trailing average.

5.39 We consider that the findings of this body of evidence remain valid and see no benefit in adding a forward rates uplift. We note however that the January 2025 average 20-year ILG rate was 1.78%, c.60 bps higher than the 1.19% figure for September 2024 used in our final determinations. Had an increase of this magnitude occurred prior to draft or final determinations, it is likely we would have revisited our decision to not index the cost of equity. Indexation of the 20 year ILG rate is an alternative way of increasing the ex-post accuracy of the risk-free rate assumption, and could be considered as part of the redetermination process, noting that this is a measure proposed by Northumbrian Water in its business plan. This would address the issue of gains and losses alluded to by Northumbrian Water without systematically overcompensating investors. We note however that the implementation of an

[134] [OF-OA-002] Northumbrian Water - Statement of Case March, 2025 Table 51
[135] [OF-RR-100} Kairos Economics 'Cost of equity estimation', March 2025, para 85
[136] [OF-RR-013] CMA, Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, final report, March 2021, para 9.229-9.234

indexation mechanism would require adequate consultation and consideration to mitigate the risk of unintended consequences from the design of the mechanism.

Inflation adjustment

5.40 We maintain our view from final determinations that CPI inflation swap rates are the most appropriate deflator for converting RPI-linked gilt rates to a CPIH basis. We restate below our rationale for preferring swap rates over approaches derived using official forecasts:

- "This data is available on a daily basis, and so reflects market information aligned with our estimation window (unlike official forecasts, whose information is usually out of date by the time it is used to proxy for inflation expectations for a given data cut-off).

- It also correctly accounts for inflation risk as well as inflation, whereas official forecasts do not. Holders of nominal assets require a return to compensate for this risk, but it should be stripped out to derive an equivalent real return, which is protected from inflation. The Bank of England has noted that the inflation risk premium has increased to 0.9 percentage points in September 2023, up from 0.2 percentage points in 2014.[137]

- Inflation swap rates are also available at a horizon matching the 10-20 years used in our implementation of the CAPM horizon, and so are a more precise estimate of inflation and inflation risk investors expect over this period"

5.41 The presence of a materially positive inflation risk premium confirmed by the Bank of England suggests that deflating nominal yields of RFR proxies using the 2.0% long-run inflation target is liable to result in upwardly-biased estimates of the CPIH-real risk-free rate. While we have considered the Bank of England paper cited by Oxera to support its argument that market structure may overprice inflation protection, the paper considers RPI swaps, not CPI swaps, and we note that the liquidity distortions referenced were relatively low even in periods of high market stress (e.g. c.10 bps at the start of the Ukraine War).[138]

5.42 A further development we consider should be reflected in inflation adjustments for the risk-free rate and other nominal rates is the emergence of evidence for a positive long-term CPIH-CPI 'wedge'. As set out by the Office for Budgetary Responsibility in October 2024, it expects long-run CPIH (and RPI, post-2030) to be 2.4%, and CPI to be

[137] [OF-RR-102] Bank of England, 'Inflation Models and Research: Distilling dynamics for monetary policy decision making - speech by Catherine L. Mann', September 2023.
[138] [OF-RR-103] Bank of England, Bahaj, S., Czech, R., Ding, S., Reis, R. (2023), The market for inflation risk—staff working paper no. 1,028, June, Figure 18

2.0%.[139] While for our final determinations we adopted a simplifying assumption that CPIH could be treated as CPI due to these measures being broadly comparable over time, this appears to no longer be a robust assumption. In other words, adjusting RPI-linked gilts by an RPI-CPI wedge may understate the true adjustment required to derive CPIH estimates of the risk-free rate. Therefore, if the allowed return is reset using more recent market data, we consider it would also be appropriate to reflect the OBR's forecast of the long-term CPIH-CPI 'wedge'. This view is supported by our economic advisors CEPA, who calculate a revised uplift of 16bps to convert from 20 year RPI-linked yields to a CPIH basis using OBR projections, down from the 29bps used at our final determination.[140]

Total Market Return

Our final determinations

5.43 We based our TMR range on long-run UK equity returns from the Dimson Marsh and Staunton (DMS) curated dataset. As PR24 is a fully CPIH-indexed control, we used a composite CPIH series based on a combination of Consumption Expenditure Deflator and ONS backcast and actual CPIH data.

5.44 Our approach used 'historical ex-post' and 'historical ex-ante' perspectives to derive a TMR range, consistent with the recommendations of the 2023 UKRN guidance and PR19 CMA redeterminations. While some previous determinations have considered 'forward-looking' evidence, we ruled these approaches out as primary estimators in the development phases of our PR24 methodology. This was in part due to concerns raised by the current set of disputing companies around the wide range of estimates that could be derived by employing different assumptions;[141] we note that the CMA shared this view in its PR19 redeterminations and did not rely on this evidence to inform the TMR range.[142] We retained the use of Market-to-Asset ratio (MAR) analysis as a forward-looking market cross check to our overall cost of equity point estimate, ensuring that the 'forward-looking' perspective was not omitted altogether.

5.45 Disputing companies have in general tended to suggest that, for PR24, we systematically adopted a process of excluding robust evidence to engineer the lowest

[139] (webpage) The long-run difference between RPI and CPI inflation - Office for Budget Responsibility, October 2024. Accessed on 29.04.2024

[140] [OF-OA-083] CEPA, 'Supplementary evidence on the cost of equity: response to statements of case" 29 April 2025, p 17.

[141] Ofwat, PR24 Draft Methodology Appendix 11: Allowed return on Capital, July 2022 p11

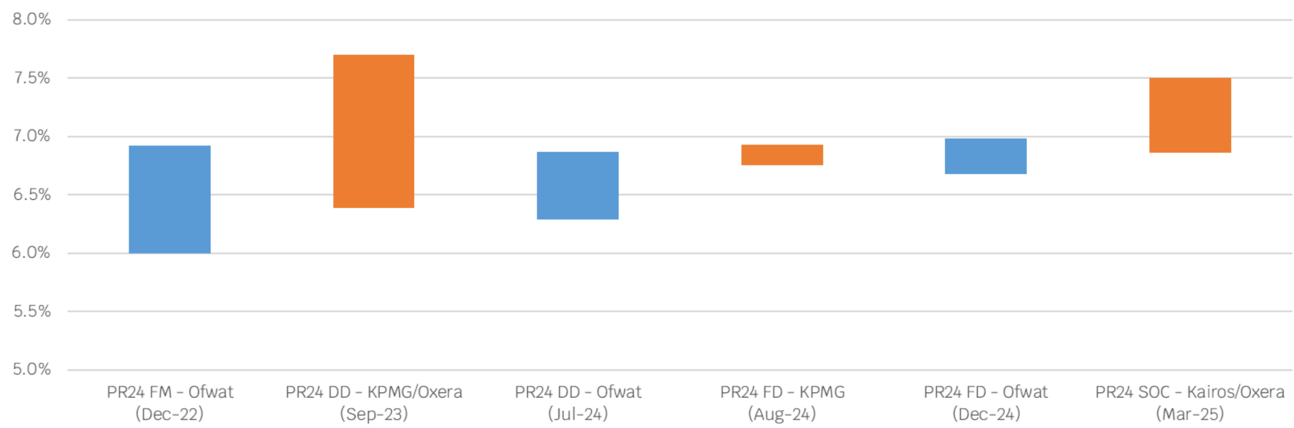
[142] [OF-RR-013] CMA, Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, final report, March 2021, Table 9-3, 9.367 & 9.374

possible allowed return, while departing from the approach used by the CMA in its PR19 redeterminations. Example statements include:

- "Ofwat materially deviated from the CMA's PR19 Redetermination and each of its deviations resulted in a lower allowed return… … , it appeared that Ofwat was seeking to adopt the lowest admissible estimate of the allowed return",[143]
- "Ofwat has not sought to refine its methodology substantively over the PR24 process to reflect the balance of the evidence, in particular, robust evidence from companies"[144]
- "Ofwat has also not been open to new evidence in relation to the cost of capital"[145]

5.46 We fundamentally disagree with statements referenced above. The evolution of our approach to TMR estimation was in response to emerging evidence provided throughout the PR24 process, and this provides a strong rebuttal to these statements. Furthermore, the disputing companies and their consultants have themselves departed from the CMA's PR19 redetermination approaches through the PR24 process.[146] Figure 5.4 plots our allowed TMR range from our 'early view' to final determinations, set against the relevant consultancy range informing company requests.

Figure 5.4: Ofwat and company consultancy-proposed TMR (Dec '22 – Mar '25)



Source: Ofwat analysis of Ofwat, KPMG, Kairos and Oxera publications

5.47 In contrast to company statements, we have fully and extensively engaged with evidence and adjusted our assessment of the TMR in response to the challenges put to us by the companies and their advisers. This has resulted in an upward movement to the TMR range at every point in the regulatory process, with meaningful impact on the

143 [OF-OA-003] Southern Water, Southern Water Statement of Case, March 2025 p.104
144 [OF-OA-003] Southern Water, Southern Water Statement of Case, March 2025 p.111
145 [OF-OA-002] Northumbrian Water - Statement of Case March, 2025, p.145
146 For instance in rejecting the CMA's adjustment to reflect serial correlation in 'ex-ante' approaches.

implied allowed return on equity. We set out below the list of changes increasing TMR we have adopted in response to company requests:

- removal of 'World' data to inform our ex-ante estimates;
- removal of serial correlation adjustments to our ex-ante estimates (despite this approach being applied by the CMA in its PR19 redeterminations);
- removal of the adjustment for assumed reduction in historically-observed dividend growth rate (despite this being the assumption used by DMS when calculating estimates based on World data); and
- removal of Barclays Equity Gilt Study datapoints, to focus instead on DMS data for both 'ex-ante' and 'ex-post' approaches.
- adopting a KPMG-proposed rebasing of the 1900-1949 inflation index to a year-end basis

5.48 In addition, we did not place weight on the 10 and 20 year non-overlapping estimator for our draft and final determinations, despite strong lobbying from companies to include it earlier in the price review process, citing its inclusion in CMA's PR19 redeterminations. Including the 10 and 20 year non-overlapping estimators for our final determinations would have resulted in an ex-post range of 5.95% - 6.98% (midpoint 6.47%), with the lower bound denoted by the 20 year non-overlapping estimator. Rather than opportunistically adopting an approach to secure the lowest figure of TMR, we retained our approach of excluding this estimator as unsuitable – being reliant on a relatively small number of changing datapoints and so subject to volatility and being influenced by outliers.

5.49 Our 'ex-post' range of 6.87%-6.98% was based on the overlapping 10 and 20 year holding period arithmetic estimators, consistent with our CAPM horizon. A geometric-to-arithmetic mean cross-check on the ex-post TMR reflecting the impact of negative serial correlation indicated a range of 6.22-6.87%, but this was not incorporated into our final ex-post range[147]. Furthermore, taking account of evidence provided by companies and their consultants in the development of the PR24 methodology, we had already reduced the weight placed on the JKM and Blume estimators despite their use in the CMA's PR19 redeterminations.

5.50 Our 'ex-ante' range of 6.68%-6.91% was based on Fama-French DGM and 'DMS Decompositional' approaches, using granular DMS data, consistent with the PR19 CMA Panel's adoption of these approaches. We note that our consultants CEPA proposed a much lower point estimate of 6.2% based on their analysis of the ex-ante evidence and 6.7% based on the ex-post evidence.

[147] Similarly, we did not place weight on JKM or Blume estimators that have been used in prior CMA determinations and would have pointed to a lower TMR.

Issues raised by disputing companies

Serial correlation

5.51 Southern Water argues our use of 10 and 20 year holding periods to derive an ex-post TMR wrongly assumes that serial correlation is present in the returns data, and that only the investor (as opposed to capital budgeter) perspective is relevant, drawing on a submission by Schaefer(2020)[148] to the PR19 appeals process.

'Ex-ante' evidence

5.52 Anglian Water and Southern Water argue that a) TMR should be estimated solely through the 'ex-post' perspective, dismissing the 'ex-ante' perspective, on the grounds that these approaches involve assessments of 'good' or 'bad' luck or 'surprises'; and b) rely on flawed adjustments linked to serial correlation in historical returns.[149]

5.53 Northumbrian Water and Wessex Water argue that our interpretation of the ex-ante TMR is understated due to our definition of dividend yield. [150]

Link between TMR and interest rates

5.54 Anglian Water,[151] Wessex Water,[152] South East Water,[153] and Northumbrian Water,[154] argue that our approach of focusing on long-run historical data is liable to understate required TMR in a period of high real interest rates. Anglian Water also suggests that we have been inconsistent by reducing TMR to track falling interest rates, without increasing it to reflect the recent increase in rates. [155] It argues for a figure of 7.5% (real, CPIH) based on Oxera's assessment that this is 'towards the CPIH-real equivalent assumptions made by Ofwat at PR04 and PR09', which it calculates as 8.3% and 7.9%, respectively.

5.55 Southern Water noted Frontier Economics' use of its so-called 'TMR Glider' (a scatterplot charting DDM-based TMR results against the nominal gilts yield, with a line of best fit drawn through it). It reports Frontier's TMR estimate of 7.77%-7.95% to argue that its preferred point estimate of 7.93% is conservative.

[148] [OF-RR-094] S. Schaefer, 'Comments on CMA views on estimating expected returns', 15 April 2020
[149] [OF-OA-001] Anglian Water, 'Anglian Water PR24 CMA Redetermination Statement of case', March 2025738
[150] [OF-OA-002] Northumbrian Water - Statement of Case March, 2025, p.584
[151] [OF-OA-001] Anglian Water, 'Anglian Water PR24 CMA Redetermination Statement of case', March 2025 para 733
[152] [OF-OA-004] Wessex Water - Statement of Case , March 2025 para 10.12
[153] [OF-OA-005] South East Water - Statement of Case, March, 2025 para 6.23
[154] [OF-OA-002] Northumbrian Water - Statement of Case March, 2025, para 584
[155] [OF-OA-001] Anglian Water, 'Anglian Water PR24 CMA Redetermination Statement of case', March 2025735

5.56 Southern Water also references several 'forward-looking' TMR cross-checks (DDM 10.02%, Survey Evidence: 7.55%), which it argues support its interpretation of TMR as being conservative.[156]

5.57 Southern Water also argues that 'ex-ante' approaches rely on dividend growth as an input, which is changeable between years, and dividend yields, which are challenging to interpret.

Our assessment

Serial correlation

5.58 We continue to hold that our use of 10 and 20 year holding period evidence is not reliant on a statistically-significant finding of serial correlation in the data. Because the ex-post perspective assumes investors' base return expectation is on historically realised returns, it is reasonable to consider holding periods aligned with the 10-20 year horizon used in our implementation of the CAPM.

5.59 Southern Water attempts to portray our use of 10 and 20 year holding periods in estimating TMR as a deviation from the purportedly standard practice of 1 year holding periods. It is however established practice in previous CMA appeals (including PR19 redetermination and NATs redetermination) to focus on 10-20 year holding periods, consistent with the relevant investment horizon.

5.60 We nonetheless continue to consider UK historical returns to be characterised by serial correlation. As we set out in our final determination:

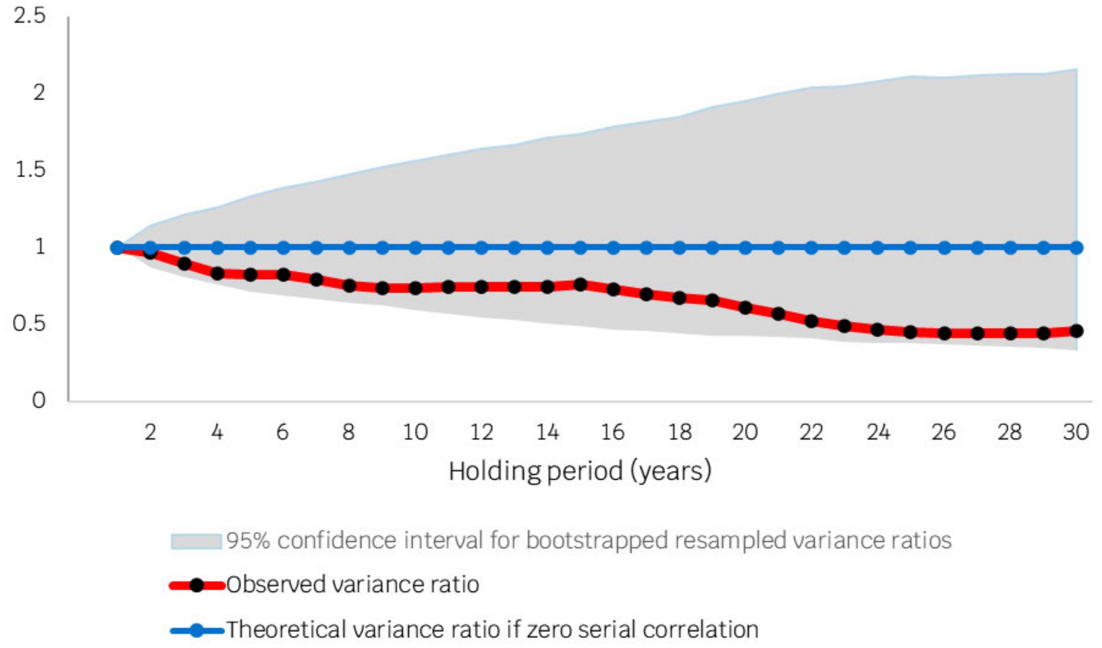
“Negative serial correlation in historical equity returns is a widely-recognised finding in academic and practitioner studies alike. [1] [2] It is also accepted by Dimson, Marsh & Staunton, authors of the authoritative Global Investment Returns Yearbook,[3] and the determinations made by the CMA for PR19,[4] and for RIIO-2[5] (which also noted that serial correlation was 'a key premise underpinning the use of average historical returns to identify the TMR.'[6]). “

5.61 The variance ratio is the variance of log returns at a given holding period as a proportion of 1 year holding period log returns. Figure 5.5 sets out the schedule of holding period against variance ratio for the time series of UK returns. With perfectly uncorrelated data, the variance ratio is a straight horizontal line because variance does not change with longer holding periods. Despite not achieving statistical significance at the 95% level, the consistently negative and steadily declining path of the variance ratio for UK data, indicates to us that a presumption of no serial

[156] [OF-OA-003] Southern Water, Southern Water Statement of Case, March 2025381-389

correlation is not the most plausible central case, however we invite the CMA panel to form its own view. [157]

Figure 5.5 Comparison of observed and resampled variance ratios of UK equity returns data (1900-2020)



Source: Analysis of DMS data by Profs. Wright & Mason

5.62 Regarding Southern Water's arguments concerning the Schaefer paper that it argues supports the use of the 1 year holding period arithmetic average as the appropriate 'neutral rate' appropriate for investors and capital budgeters, the PR19 CMA panel already considered these arguments and chose to reflect them in its decision to base

[157] [OF-RR-013] CMA, 'Anglian, Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, final report. March 2021. para 9.328

[1] [OF-RR-107)]Fama, E.F. and K.R. French, 'Permanent and Temporary Components of Stock Prices', 1988

[2] [OF-RR-108] D. Blanchett and J. Stempien, 'Investment horizon, serial correlation, and better (retirement) portfolios', CFA Institute Research Foundation, 2024, p3

[3] The authors of the study give a serial correlation coefficient for UK real equity returns of -0.08, source: [OF-RR-073] Elroy Dimson, Paul Marsh and Mike Staunton, 'Global Investment Returns Yearbook' 2024, Zurich: UBS, 2024, p238

[4] [OF-RR-013] CMA, Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, final report, March 2021, para 9.329, p.819

[5] [OF-RA-096] CMA 'RIIO-2 Final determinations Volume 2A: Joined grounds: Cost of equity, October 2021, para. 5.253, p89

[6] [OF-RA-096] CMA 'RIIO-2 Final determinations Volume 2A: Joined grounds: Cost of equity, October 2021, para. 5.267, p93

its ex-post estimates on arithmetic estimators with 10 and 20 year holding periods.[158] We consider the Southern statement of case provides no new evidence or argument to justify a pivot to a shorter holding period.

5.63 We recommend for consideration the approach set out in Wright et al. (2003)[159] of adding half the variance of log real returns to their geometric mean. This approach is robust to volatility induced by exchange rate changes, and can help correct two upward biases in our final determinations approach. Firstly, accounting for the lower variance of long holding period returns mitigates the bias from serial correlation in the UK returns data, and secondly, starting from geometric returns avoids the bias of using long holding periods whereby, for instance, the first 19 years of the 20 year overlapping average are not used in the estimate. Because these years have low returns on average their removal biases the ex-post average upwards.

5.64 These proposals are illustrated in table 5.4 below, which for Approach 1 starts from the holding period-specific average return and adjusting for the reduced variance of longer periods. Approach 2 is as per Approach 1, but corrects for the missing years bias set out in the above paragraph, by starting from the whole-period geometric mean, and thus not missing out the earlier years in the sample.

Table 5.4: Geometric to arithmetic conversion

		1 year	10 year	20 year
A	Geometric average return	5.25%	5.59%	5.88%
B	Variance of log returns	3.24%	2.34%	1.93%
C	Variance of 1Y log returns	3.24%	3.24%	3.24%
D=B/C	Variance ratio	100.00%	72.21%	59.49%
E=C/2	Half the variance of 1Y log returns	1.62%	1.62%	1.62%
F=D*E	Geometric to arithmetic adjustment factor	1.62%	1.17%	0.96%

[158] [OF-RR-013] CMA, Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, final report. March 2021, para 9.328
[OF-RA-096] CMA 'RIIO-2 Final determinations Volume 2A: Joined grounds: Cost of equity, October 2021, para. 5.253, p89
[6] [OF-RR-096] CMA 'RIIO-2 Final determinations Volume 2A: Joined grounds: Cost of equity, October 2021, para. 5.267, p93
[159] [OF-RA-098] Wright et al. 'A study into certain aspects of the cost of capital for regulated utilities in the UK', February 13, 2003, pp. 24-25

G=A+F	Approach 1) Holding-period specific start point	6.87%	6.76%	6.84%
H=5.25%+F	Approach 2) 1Y geometric average start point	6.87%	6.42%	6.22%

Source: Ofwat analysis of DMS data

'Ex-ante' evidence

5.65 As we set out in our draft determination,[160] 'ex-ante' approaches have a robust grounding in academic theory and empirics, and standard investment advice is typically to not adopt the 'ex-post' assumption that the future will resemble the past:[161]

"The core insight of the ex-ante perspective is that equity risk premia observed in multiple countries in the latter half of the 20th century are difficult to justify as investor expectations, because of the implausibly high level of investor risk aversion this would imply. This is not a subjective opinion, but a finding drawn from the incompatibility of the returns evidence with standard models of investor risk aversion. Academic evidence is strong in support of this point, for instance: Mehra and Prescott (1985),[162] Blanchard, Shiller and Siegel (1993),[163] and Siegel and Thaler (1997),[164] and (in a UK context) Vivian (2007)."[165]

5.66 'Ex-ante' approaches have also been a mainstay of TMR estimation in previous decisions by regulators, the CMA and its predecessor organisations. They are also recommended by the 2023 UKRN guidance. By dismissing these approaches, disputing companies are departing from established norms of UK economic regulation.

5.67 This stance is especially surprising given that our 'ex-ante' range is entirely based on KPMG's analysis of granular data from the DMS dataset from its August 2024 Cost of Equity report, and the point estimates within. Several disputing companies, including Southern Water, South East Water, and Anglian Water directly relied on this analysis to inform their TMR range in their September 2024 draft determination response. It is puzzling that in the 6 months separating these submissions and their Statements of

[160] [OF-RR-024] Ofwat, 'PR24 Draft determinations, Allowed return appendix', July 2024, p23
[161] Indeed, UK financial regulation stipulates the use of disclaimers warning that past performance is not a reliable indicator of future results https://www.handbook.fca.org.uk/handbook/COBS/4/5A.html
[162] [OF-RR-109] Mehra R.; Prescott C. 'The Equity Premium: A Puzzle', Journal of Monetary Economics 15, 1985, 145-161
[163] [OF-RR-111] Blanchard, O.; Shiller R.' Siegel J. 'Movements in the Equity Premium', Brookings Papers on Economic Activity 2, 1993 pp75 - 138
[164] [OF-RR-Siegel J.; Thaler R. 'Anomalies: The Equity Premium Puzzle', Journal of Economic Perspectives 1997 Vol 11. No 1. pp. 191-200
[165] Vivian A., 'The UK Equity Premium: 1901-2004', Journal of Business Finance & Accounting, 2007

Case, the position of these companies has evolved into one which essentially dismisses this evidence and relies entirely on the ex-post approach. It also raises concerns about the extent to which the companies and their boards stand behind regulatory submissions on the use of long-term evidence.

5.68 We do not recognise Anglian Water's critique of our ex-ante approaches as involving subjective adjustments to data or adjustments for serial correlation, which we think may have mistakenly been based on previous iterations of these approaches. As set out in the previous section we have removed both of these types of adjustments in response to company submissions. We note however that the authors of the 2024 Global Investment Returns Yearbook (DMS) make a significant (c.50 bps) downward adjustment to their estimate of the forward-looking geometric market risk premium (MRP), based on their view that the contribution of the historically high dividend growth rate (especially in the second half of the 20th century) to this estimate is unlikely to be repeated. While we recognise it is more traditional to focus on domestic estimates in UK economic regulation, the authors of the study have previously endorsed the use of World data as a guide to future returns, stating:

"National returns probably had more to do with unexpected outcomes than with the expected premium, and averaging mitigates the impact of noise. We therefore focus on the world index."[166]

5.69 Overall there is therefore no case for further adjusting or eliminating our ex-ante estimates, and a reasonable case that they should be lower - reflecting the conclusions of the authors of the Yearbook.

Link between TMR and interest rates

5.70 Anglian Water and Oxera's proposal for an 'aimed up' TMR range of 7.0-7.5% (real, CPIH) is fully above the range indicated by ex-post and ex-ante evidence in our own and other companies' statement of case submissions, and we observe that the upper bound of 7.5% is not an estimate based on a generally-accepted methodology for estimating TMR. Oxera instead argues that we historically adopted a 'Fixed TMR' policy yet recent changes in our TMR have tracked changes in the risk-free rate assumption, and so: "it may be reasonable to set the TMR closer to the historical precedents that occurred in an interest rate environment similar to what currently faces the sector. For example, the allowed TMR in the PR04 and PR09 determinations were 8.3% (CPIH-real) and 7.9% (CPIH-real), respectively."[167]

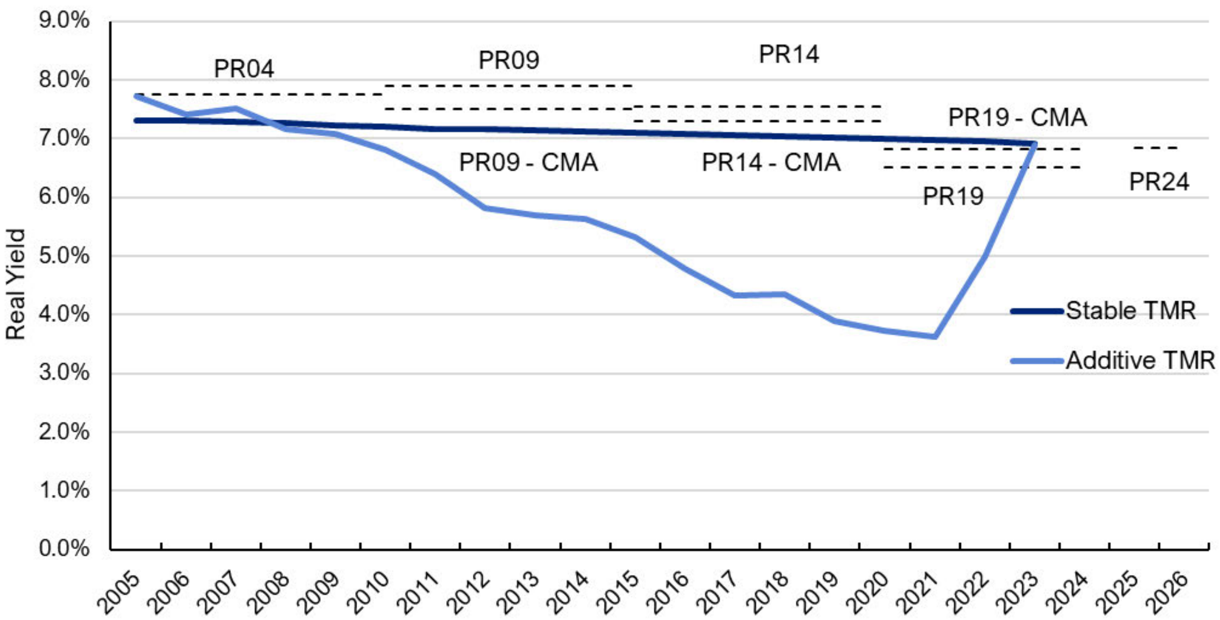
[166] [OF-RR-073] Elroy Dimson, Paul Marsh and Mike Staunton, 'Global Investment Returns Yearbook' 2024, Zurich: UBS, 2024, p77

[167] [OF-RR-090] Oxera, 'PR24 Cost of Equity Estimation', March 2025 p35

5.71 We consider this argument significantly misrepresents our historical regulatory policy and risks embedding parameter-level aiming up at PR04 and PR09 as the 'business-as-usual' TMR approach for PR24. It is also a clear departure from established norms of TMR estimation in UK regulation, given that 'ex-post' and 'ex-ante' evidence suggests figures entirely below Oxera's range.

5.72 Approaches that use a TMR that is based on combining a long-run estimate of the Market Risk Premium (i.e. excess return of equities over the risk-free rate) with a contemporary estimate of the RFR (aka, 'Additive TMR'), are commonplace, particularly in Europe and in the Antipodes.[168] We also used this approach to set the allowed return on equity up to and including PR09, changing only to the current 'stable TMR' approach at PR14. We have compared the estimates of TMR from such approaches with our current 'stable TMR' approach, using our preferred 10-20 year holding period, the 2024 DMS dataset deflated to a CPIH real basis, and historical RPI-CPI 'wedge' assumptions implied by prior price controls (Figure 5.6).

Figure 5.6: CPIH-real TMR under 'Stable TMR' and 'Additive TMR' approaches and regulatory decisions, PR04-PR24



Source: Ofwat and CEPA analysis of historic price review decisions and DMS data

5.73 We form three conclusions from Figure 5.6. Firstly, our allowances up to PR19 comfortably exceeded those implied by both the 'Fixed TMR' and 'Additive TMR' approaches. Secondly, our switch to a 'Stable TMR' approach in PR14 occurred at the

[168] [OF-RR-088] NERA, 'Review of Regulators' Approaches to Determination of the Market Risk Premium', 25 May 2020.

most advantageous time for companies, when the ‘Additive TMR’ approach would have resulted in significantly lower allowances. Finally, neither ‘Stable TMR’ or ‘Additive TMR’ approaches point to a significantly different estimate of PR24 TMR than our final determinations point estimate of 6.83% (real, CPIH).

5.74 Oxera’s proposal to set an upper bound TMR of 7.5% would embed ‘aiming up’ to reflect context-specific factors at PR04 and PR09:

- PR04: We understand Oxera's estimate of a 8.3% (real, CPIH) TMR is based on assuming published (real, RPI) TMR of 7.7% (due to the notional beta point estimate of 1.0 and allowed return on equity of 7.7%), and adding a 0.5% RPI-CPIH wedge. However, the midpoint of the published RFR and MRP ranges implies an RPI TMR of 7.25%.[169] Oxera’s PR04 TMR figure therefore clearly reflects a 50 bps ’aim-up’, which we have not reflected in Figure 5.6.
- PR09: The estimate of TMR from summing published RFR and MRP point estimates in the PR09 final determination also represents an ’aim-up’ as referenced by the PR19 CMA Panel in its final report.[170] As we stated in our document ’Our final determination cost of equity [7.1%, real, RPI] is at the high end of the Europe Economics pre-marked-up range (3.5% to 7.2%), but we believe that it is necessary to allow the industry to maintain access to finance in difficult economic times”. We chose a higher point estimate in particular to reflect the difficult conditions for raising debt in the aftermath of the 2007-08 financial crisis.

5.75 The confusion generated by this parameter-level aiming-up demonstrates that any aiming up should be at the overall (allowed return on equity) level, not in parameters. This should avoid misinterpreting context-specific aiming up decisions as best-practice approaches to estimating TMR over successive price controls.

5.76 In summary, Anglian Water's proposal for a TMR range of 7.0-7.5% has no grounding in accepted TMR estimation approaches, misinterprets our previous policies, and would inappropriately embed context-specific aiming up from previous controls. Its proposal to mechanistically uplift TMR in response to rising rates when companies were largely protected from falls in TMR over PR04-PR14 implied by an ‘Additive TMR’ approach does not constitute a 'fair bet', but would rather impart an upward bias to TMR estimates over time.

[169] [OF-OA-085] Ofwat, ’PR04 Final determinations’, December 2004, Table 45
[170] [OF-RR-013] CMA, ’ Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, final report. March 2021’, para 9.1226

Equity beta

Our final determinations

5.77 In arriving at a beta range for final determinations, we considered a range of different specifications, including estimation window length, data frequency, and inclusion of Pennon.

5.78 Our final determination decision on equity beta contained the following decisions:

- Frequency of data: We estimated and referred to weekly and monthly figures in our documents, but focused on daily data due to greater statistical precision and lack of 'reference day effect' issues.
- Estimation period: We considered evidence from standard (2,5, 10 year) windows due to the transparency and predictability of this approach, but ultimately retained our PR24 methodology focus on 5 and 10 year windows. We considered these periods long enough to be representative of risks faced from our 10-20 year CAPM horizon, particularly as this was supported by a cross-check from a 16.5 year beta (the longest window beta possible since SVE and UUW became 'pure-play' comparators.) We decided to use spot rather than rolling windows to avoid underweighting data at the start and end of our estimation windows, but noted that the case for doing so was finely balanced.
- Listed comparators: As at PR19 and in the CMA's PR19 redetermination, our PR24 final determinations focused solely on Severn Trent and United Utilities. While recognising clean data existed to add Pennon's data to 2 year estimates, we judged that 2 year data was too volatile to be eligible for inclusion as a spot estimator. In addition, we (and our advisors CEPA and FTI in development of our PR24 methodology[171]) had concerns about the reliability of Pennon's gearing estimates, given acquisitions of Bristol (2021) and SES Water (2024), the consequences for Pennon's balance sheet following the disposal of Viridor (2000) and uncertainty around future equity financing plans. In addition, CEPA noted a relatively higher share of revenue from non-regulated activities for Pennon. We did not consider National Grid beta or Ofgem's beta range for RIIO-3 SSMD to be relevant datapoints due to the former's large exposure to US operations and non-network activities, and the latter's inclusion of European gas and electricity networks.
- Covid-19 and Ukraine War: We did not agree that reweighting or truncating data for these periods was liable to lead to a more accurate estimate of beta over 2025-30, citing issues such as subjective and selective assumptions used to identify affected periods and weights, and miscalibrated weightings for other drivers of beta.

[171] [OF-RR-075] FTI Consulting, 'Early view of water sector betas for PR24', 30 November 2022

- PR24 capex programme: We did not adjust econometric estimates of beta to account for forecast higher capex intensity over 2025-30. This was as: a) we did not identify evidence for a robust theoretical link between higher capex intensity and beta for regulated companies, b) such adjustments were rare in utility regulation, and c) such adjustments risked overestimating risk compensation due to PR24 beta risk mitigations and the likelihood that betas embed forward-looking data to some extent.
- Gearing and debt beta: We de-geared using enterprise value gearing and re-geared using our notional assumption of 55%, employing the standard (Harris-Pringle) approach. We retained our debt beta range of 0.05-0.15 estimated by FTI Consulting for our PR24 Methodology.

5.79 Our final determinations evidence base considered the following data on unlevered betas using a data cut-off of September 30 2024:

- Unlevered betas at 2-,5- and 10-year estimation windows and spot,1y, 2y and 5y rolling averages, suggesting an overall range of 0.23-0.33, with a 'vertical averaging' approach employed by the CMA PR19 redetermination of 0.27-0.28.
- A subset of this wider range focusing only on daily data, giving a range of 0.26-0.33.
- A reprisal of our draft determinations range based on 2- and 5-year rolling averages of 5- and 10-year windows for SVE/UUW, giving 0.26-0.29.
- As our preferred estimator a variant of our draft determination range but based on spot data rather than rolling averages, giving 0.27-0.30 (midpoint 0.28).
- A 16.5-year unlevered beta cross check for SVE/UUW giving 0.28 (very close to the midpoint of our preferred estimator).
- An unlevered beta range proposed by our advisors CEPA of 0.26-0.30 (point estimate: 0.29)
- To inform our final determination allowed return we assessed on the above evidence that an unlevered beta range of 0.27-0.30 (midpoint 0.28) was appropriate.

Issues raised by disputing companies

Data Frequency and Estimation Window

5.80 Disputing companies adopted different preferred formulations of beta in their statements of case:

- Anglian Water bases its asset beta point estimate of 0.40 (equivalent to an unlevered beta of 0.34) on the average 2 year spot daily beta for SVE/UUW/PNN as at 31/01/2025. It argues for the inclusion of 2 year estimation windows, citing our

PR19 final determination's use of 2 year and 5 year estimation windows,[172] and suggesting that 2 year windows may better capture forward-looking risk. [173]

- Northumbrian Water's unlevered beta range of 0.319-0.337 is based on a 10.3 year daily beta window (from 30/09/2014 to 17/01/2025), due to its consultant Kairos' view that the PR24 beta should be 'unconditional' – i.e. based on a long-run average not taking into account current market conditions, and its view that 30/09/2014 represents a statistical breakpoint.
- Southern Water's asset beta point estimate of 0.41 (equivalent to an unlevered beta of 0.36) is based on a KPMG estimate using 10 year daily Pennon data.
- Wessex Water did not propose a beta estimate but set out its support for including short term beta estimates.[174]

Covid-19 period

5.81 Northumbrian Water, Southern Water, and Wessex Water[175] suggest our FD estimate of beta did not sufficiently account for the Covid-19 lockdowns. These companies argue the impact on betas was temporary and not relevant to 2025-30 due to the unusually large scale of the pandemic and its response.)[176]

5.82 Southern Water suggests that, because 5 and 10 year beta data includes the Covid-19 affected period, that the use of this data to inform our beta assumption commits us to the view that a similar pandemic and associated response will reoccur (in proportion to the share of the affected period in the estimation window) over 2025-30.[177]

Inclusion of Pennon

5.83 All disputing companies argue for the inclusion of Pennon's data in estimating beta, [178, 179, 180] variously arguing that:

- Severn Trent and United Utilities are high performing, low-risk companies, that may have lower operational gearing (and which are thus less representative of the notional company).
- Data exists from 2020/21 for Pennon as a 'pure-play' water comparator
- Evidence may suggest Pennon's beta did not reduce following its sale of Viridor.

[172] [OF-OA-001] Anglian Water, 'Anglian Water PR24 CMA Redetermination Statement of case', March 2025748
[173][OF-OA-001] Anglian Water, 'Anglian Water PR24 CMA Redetermination Statement of case', March 2025750
[174] [OF-OA-004] Wessex Water - Statement of Case , March 2025, 10.12
[175] [OF-OA-004] Wessex Water - Statement of Case , March 2025, 10.12
[176] [OF-OA-002] Northumbrian Water - Statement of Case March, 2025 p.583
[177] [OF-OA-003] Southern Water, Southern Water Statement of Case, March 2025 p.227
[178] [OF-OA-001] Anglian Water, 'Anglian Water PR24 CMA Redetermination Statement of case', March 2025 p.744
[179] [OF-OA-002] Northumbrian Water - Statement of Case March, 2025 p.583
[180] [OF-OA-004] Wessex Water - Statement of Case , March 2025 10.12

- Southern Water notes CEPA's finding that Pennon's non-regulated share of revenue is c.25%, but notes that these activities contribute less than 2% of EBIT, compared to Severn Trent's 10%.
- Southern Water argues that it is inconsistent for us to use Pennon's data in our MARs cost of equity cross-check calculations but not our beta calculations.

Forward-looking risk

5.84 All disputing companies[181] argue that systematic risk has increased since PR19, and that our use of a lower unlevered beta (0.28 at PR24 compared with 0.29 at PR19) is implausible.

5.85 South East Water cites the risks of the larger PR24 investment programme, RoRE underperformance over 2020-24, Thames Water's financial difficulties, rating agency actions and investor sentiment. It argues for including National Grid's beta and Ofgem's RIIO-3 beta to account for these risks.[182]

5.86 Southern Water, Anglian Water, and Wessex Water suggest that the PR24 control period is affected by delivery and performance risks that have only come to light recently, and so are not reflected in betas other than those with shorter windows.

5.87 Anglian Water argues that historical beta data will not account for the scale of investment programmes at PR24. In its view this implies higher beta due to Oxera's assessment that operational gearing will be higher, and KPMG's analysis that capex intensity will result in higher beta.[183]

5.88 Southern Water lists a range of delivery risks (input prices, supply chains, financing, political and social, and complexity) and performance risks (e.g. stricter targets and penalties). It refers to analysis by KPMG and Economic Insight which it argues corroborates the link between capex risk and betas, and argues that its capex programme is the largest and most complex in the sector, justifying a point estimate at the top of its consultant KPMG's asset beta range of 0.37-0.41. South East Water similarly argues that risks relevant to beta over 2025-30 have increased.[184] Wessex Water also argues for the scale of the capital programme being reflected in the allowed return.[185]

[181] [OF-OA-004] Wessex Water - Statement of Case , March 2025 10.12
[182] [OF-OA-005] South East Water - Statement of Case, March, 2025 6.18-6.21
[183] [OF-OA-001] Anglian Water, 'Anglian Water PR24 CMA Redetermination Statement of case', March 2025 754
[184] [OF-OA-005] South East Water - Statement of Case, March, 2025 6.18-6.19
[185] [OF-OA-004] Wessex Water - Statement of Case , March 2025 10.15

5.89 Southern Water also cites KPMG's approach of estimating the increase in RoRE standard deviation from the higher PR24 totex programme, using the ratio of standard deviation as a scaling factor.

5.90 Southern Water and South East Water argue that it would be appropriate to include National Grid's beta in the PR24 beta estimate, as Ofgem for RIIO-3 is contemplating basing its beta on European networks. Southern Water argues that the higher historical capex intensity of National Grid would make it a better proxy for PR24 beta risk than using historical data for water comparators alone.

Frequency of data

Debt beta

5.91 Southern Water cites a Barclays estimate of 0.40 asset beta for the water sector, following our FD, based on a debt beta point estimate of 0.2.[186]

Low beta anomaly & regression attenuation bias

5.92 Anglian Water argues that it would be appropriate to choose a point estimate towards the upper-bound of its range, due to the 'low beta anomaly' and the 'regression attenuation bias'.[187]

Our assessment

Data Frequency and Estimation Window

5.93 We note companies have proposed a variety of estimation windows ranging from 2 years to 10 years, and custom windows using statistical breakpoint analysis. We observe that the preference for shorter windows marks a shift from company statements earlier in the price review process, for instance:

- "Precedent shows that Ofwat has elected to look through the day-to-day volatility in share price data, and especially the volatility that appeared in the run up to a regulator's price control decision and was guided instead by empirical estimates of beta over a longer time horizon. In this context, we urge Ofwat to consider 5-year and 10-year betas as providing more useful information relative to 2 year betas."[188] (Anglian Water)

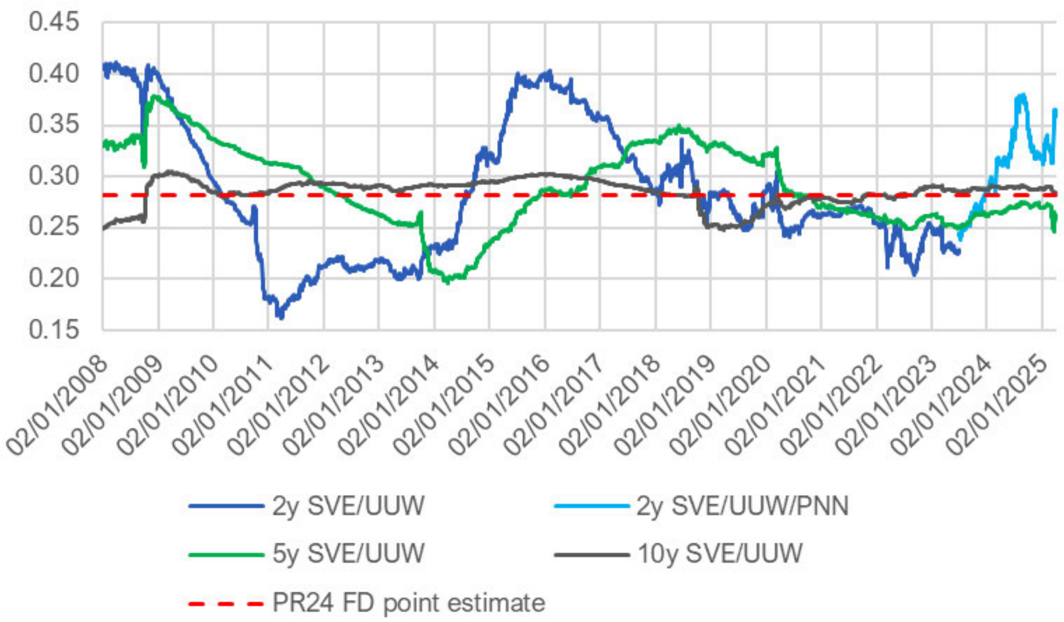
[186] [OF-OA-003] Southern Water, Southern Water Statement of Case, March 2025 para 271
[187] [OF-OA-001] Anglian Water, 'Anglian Water PR24 CMA Redetermination Statement of case', March 2025752
[188] [OF-RR-077] Anglian Water, 'PR24 Draft Methodology Consultation: Response', September 2022

- "Ofwat has relied on shorter-term estimates of beta, placing weight on 5-year estimates. Given that Ofwat is looking to incentivise long-term investment in the sector, we suggest that its approach avoid placing weight on short-term estimates that are more likely to change at successive price controls as this may disincentivise investors with a longer-term outlook"[189] (Wessex Water)

5.94 We maintain our position from our PR24 methodology that there is benefit in terms of transparency and consistency in focusing on the 2, 5, and 10 year estimation windows that are standard in UK regulation, the 2023 UKRN guidance, and recent CMA appeals. We agree with the position set out by the CMA at PR19 that subjective specification choices in breakpoint testing can drive different results in terms of identified breaks, raising doubts over the reliability of such analysis.[190]

5.95 This stance should not be interpreted as a view that every permutation of beta should be given equal weight. In particular, inspection of the time series of unlevered beta from Figure 5.7 suggests that 2 year daily betas are highly volatile, and so using the spot 2 year beta at a given point in time would be a poor choice for forecasting beta over 2025-30, although rolling averages may be acceptable, as they have the tendency to smooth volatility.

Figure 5.7: Unlevered daily water betas, Jan 2008 – Mar 2025

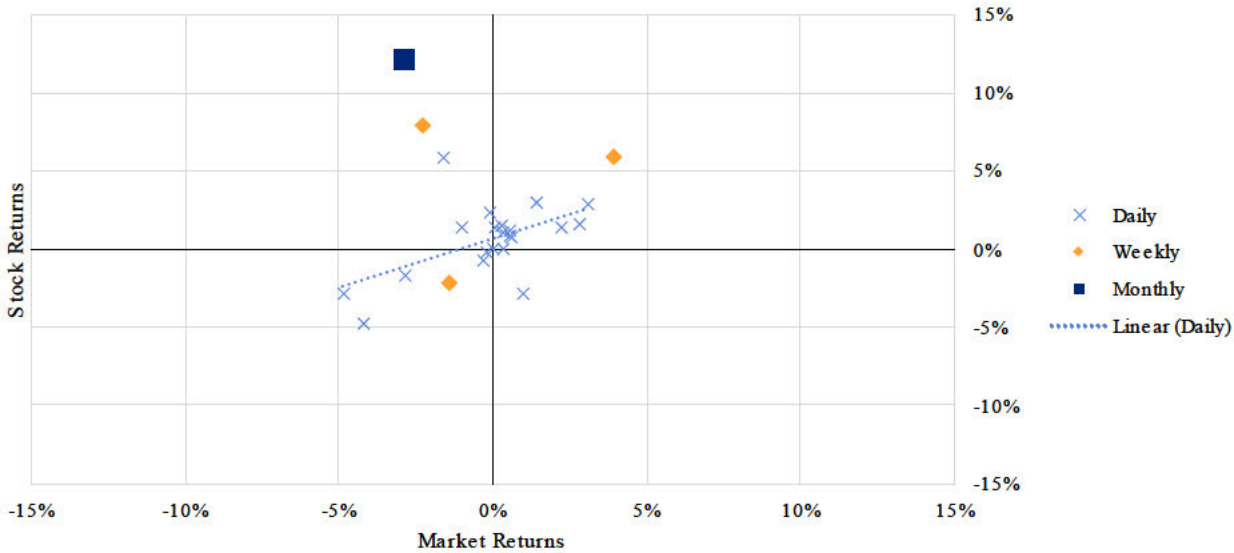


Source: CEPA analysis of Bloomberg data

[189] [OF-RR-099]Wessex Water, 'WSX-R01 – Risk and return: Response to Ofwat's draft determination', August 2024
[190] [OF-RR-013] CMA, ' Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, final report. March 2021', para 9.467

5.96 We note that all companies propose focusing on daily data, however Figure 5.8 setting out CEPA's comparison of daily and weekly data suggests that lower frequency data may be helpful in looking through intraday 'noise'. In some periods weekly and monthly estimates may capture the defensive characteristics of water stocks that are synonymous with their lower beta compared to the wider market, where these characteristics can be missed in daily estimates.[191] For instance, the below CEPA chart considers the co-movements of Severn Trent's stock returns over a period characterized by stock market volatility caused by announcements on US tariffs. It shows that movements on a daily basis have been 'noisy' – with some co-varying movements and some demonstrating the opposite. Overall, the monthly figure shows most clearly the 'flight to safety' benefit of the holding the equity over the period – it shows clearly the net result of the stock return increasing over a period when the market is down.

Figure 5.8: Severn Trent stock vs. market returns (24 March – 25 April 2025)



Source: CEPA analysis of Bloomberg data

5.97 Overall, we consider that beta analysis should not prematurely eliminate particular frequencies and estimation windows of beta, given that the weight accorded by investors to these features is not observed, and hence uncertain. Table 5.5 sets out estimates of unlevered beta for SVE/UUW using a data cutoff of 31/03/2025. This evidence suggests an unlevered beta range of 0.27-0.29. We note that weekly and monthly data in Table 5.5 is robust to reference day effects because they are averaged over the week or month in question.

[191] [OF-OA-083] CEPA, 'Supplementary evidence on the cost of equity: response to statements of case, 29 April 2025, pp4-5.

Table 5.5: Unlevered water betas at two-, five- and ten-year estimation periods up to 31 March 2025 (SVE/UUW composite)

Estimation window	Rolling average period			
	Spot	1 year	2 year	5 year
2yr daily	0.35	0.33	0.29	0.27
2yr weekly	0.42	0.32	0.28	0.25
5yr daily	0.26	0.27	0.26	0.27
5yr weekly	0.24	0.26	0.26	0.27
5yr monthly	0.24	0.23	0.24	0.23
10yr daily	0.28	0.29	0.29	0.28
10yr weekly	0.29	0.29	0.29	0.29
10yr monthly	0.27	0.27	0.28	0.27
Average	**0.29**	**0.28**	**0.27**	**0.27**

Source: CEPA and Ofwat analysis of Bloomberg data

Covid-19 period

5.98 Disputing companies cite new analysis of unlevered beta from Kairos and KPMG analysis that rely on regressions containing dummy variables corresponding to these entities' views of the Covid-19 affected dates. This is effectively a re-weighting of the data, because it strips out the contribution of data in this period to the econometric estimate of beta used in the CAPM.

5.99 Companies also argued during PR24 to reweight or truncate data from the Covid-19 or Ukraine War affected periods. These proposals were consistent in seeking to exclude periods of low beta data using various criteria (e.g. difference between 2 year and 10 year betas), but did not apply the same criteria to recommend affected high-beta periods for exclusion. We maintain our view from final determinations that such approaches are reliant on subjective judgments to define periods that need reweighting and the weights used. They also risk miscalibrating the weight assigned to other drivers of water betas, and adding disproportionate complexity.

5.100 We do not agree with the characterisation proposed by Southern Water that including betas from estimation windows including Covid-19 data commits us to a position on reoccurrence. We assess instead that systematic risk events of similar magnitude to Covid-19 (but with a broader set of causes) will occur with indeterminate probability. Excluding periods affected by these events is problematic, as these shock periods are likely to be the data that best helps to understand water betas, from how water equities perform defensively in the context of wider market dynamics. We note that disputing companies have not proposed approaches to control for atypical events driving higher water betas, such as the liability driven investment fund (LDI) crisis in autumn 2022.

5.101 We also note CEPA's analysis that suggests that both a) the statistical significance; and b) the contribution of event dummies to econometric beta estimates, are sensitive to reasonable differences of interpretation to the boundary dates denoting the dummy variable period:

5.102 Replicating KPMG's analysis on the SVE/UUW beta, CEPA show that using 23/02/2020 (the start of the Covid-related correction in the FTSE All share price) rather than 16/03/2020, the dummy is no longer statistically significant and its impact on raw beta falls by two thirds, from -0.15 to -0.05. [192] CEPA further argues that the former is likely to be more defensible for the stated purpose of the analysis, since there were significant market movements prior to the announcement of lockdown in the UK (which corresponds to KPMG's choice of 16/03/2020).

5.103 CEPA also use the thought experiment of a 'Brexit' dummy variable to illustrate the general problem with such approaches. Brexit is similar to Covid-19 in that it is a presumably long return period event with significant impact on stock markets. Whether CEPA defines the post-Brexit period as beginning on the date of the referendum (23 June 2016) or the effective date of Brexit (31 January 2020), it finds that pre-Brexit beta measurements are higher and that the difference is statistically significant.[193] Including a 'Brexit dummy' would therefore serve to reduce econometric estimates of beta for 2025-30.

5.104 This series of exercises indicates that the sole focus of Kairos and KPMG on dummy variables that increase betas is one-sided. It also suggests that embedding a practice of considering dummy variables for inclusion is liable to absorb significant resource in

[192] [OF-OA-083] CEPA, 'Supplementary evidence on the cost of equity: response to statements of case" 29 April 2025, pp8-10.
[193] [OF-OA-083] CEPA, 'Supplementary evidence on the cost of equity: response to statements of case" 29 April 2025, pp8-9.

evaluating the suitability of candidate events, given that a) there are more candidates than Brexit or Covid-19 to consider, and b) reasonable disagreement over as basic an issue as the start and end dates of events can give radically different results.

5.105 In summary, we do not consider approaches that reweight or truncate data to be necessary or well-advised, and consider that basing estimation on a suitably long window (or number of different windows) can provide adequate confidence that forecast betas are not reliant on conditions corresponding to a particular historical period.

Inclusion of Pennon

5.106 The changing mix of business activities in the last 10 years, and large changes in gearing due to the sale of Viridor in 2020 and subsequently large cash holdings complicate the interpretation of Pennon's data in the context of requiring a beta estimate for a pure-play water company. In our view these considerations outweigh the statistical evidence provided by KPMG and Kairos in favour of including Pennon in longer (i.e. 2y plus) estimation windows.

5.107 While financial close for the sale of its waste management subsidiary Viridor occurred on 8 July 2020, Pennon held a large amount of cash on its balance sheet (from the proceeds of the sale) for around a year. This resulted in abnormally low gearing levels for that period; at one point reaching below 10% on a book value basis.[194] Subsequently, Pennon's net debt balance returned to a level consistent with historic levels towards the end of Q2 2021, following the payment of a special dividend and its acquisition of Bristol Water[195].

5.108 We consider that this means data to calculate a 'clean' estimate of Pennon's beta at windows of 5 and 10 years is unavailable, with proposals to 'infer' this data using the gap between recent 2-year PNN and 2-year UUW/SVE data being speculative and unreliable. This is the primary reason for our decision to not include Pennon's data in our final determinations estimate of beta, which focused on 5 and 10 year windows.

5.109 We have considered Kairos and KPMG's arguments to include Pennon based on a dummy variables test. We note that the period covered by the Pennon dummy is very long (from financial close on 08/07/2020 to the end of its sample on 31/01/2025). This increases the risk that the dummy may be capturing factors other than the Viridor divestment. It is also surprising that - despite identifying the Viridor dummy as

[194] [OF-RR-082] FTI Consulting, 'Early view of PR24 water sector betas', November 2022 Figure A4-1

[195] We note that where prevailing estimates of gearing are impacted by Viridor, this impacts on the gearing estimate to delever equity betas. For example, the 2yr beta estimated in October 2023 will reflect both stock prices and gearing from October 2021 to October 2023. Where gearing is impacted by not representative levels of cash or debt, the implied unlevered beta will be similarly unrepresentative of true risk. For Pennon, this means that a return to more normal levels of net debt at end Q2 '21 only stops impacting 2yr unlevered betas in Q2 '23.

statistically insignificant - both KPMG and Kairos retain it in their estimates for Pennon's beta.

5.110 As with the Covid-19 dummy, CEPA find that minor adjustments to the specification of the Viridor dummy variable period result in strikingly different results. Adapting KPMG's analysis involving both Covid-19 and Viridor dummies, but with the Viridor dummy period starting on the date of the sale announcement (18/03/2020) rather than the financial close date (08/07/2020), CEPA find that the Covid-19 dummy is insignificant, but there is a statistically significant fall in betas after the disposal of Viridor.

5.111 Southern Water's criticism that regular dividend payments by United Utilities and Severn Trent make these companies betas unrepresentative do not seem relevant to how we have modelled the notional company; under our modelling assumptions the notional company is assumed to make a 4% nominal dividend payment each year.

5.112 In addition, we identify several other potential company-specific reasons that may drive higher beta for Pennon, but which are of questionable relevance for the notional company:

- Business activities: Roughly 25% of Pennon's revenues are attributable to its non-price control activities (and in particular its water business retail arm) compared to c.0% for United Utilities and c.8% for Severn Trent. These activities are contestable and hence higher risk.[196]
- Uncertainty around target gearing level: Equity analysts noted the lack of a clear equity financing plan in the run up to final determinations.[197] While the January equity raise has now provided clarity, this period of uncertainty remains in the pre-FD data.
- Environmental fines: While KPMG are correct to identify that all three listed companies are under investigation for potential breaches, the exposure for Pennon is likely larger than for the other two companies. Barclays August 2024 note estimates likely fines for Pennon at £80m vs. an estimate of £30m for United Utilities and £0m for Severn Trent.[198]

5.113 Table 5.6 below sets out unlevered betas for 2 year daily data for Pennon and United Utilities and Severn Trent. This evidence sets out that the impact of including Pennon as an equally-weighted comparator is relatively slight in the 2 year data – typically accounting for a difference of around 0.01 in unlevered beta.

[196] Source: Ofwat analysis of LSEG Workspace segmental financial results data
[197] Goldman Sachs, 'UK Water: Preview for Final Determinations… expect returns to rise', 4 December 2024
[198] [OF-RR-075] Barclays, 'Breaking the water cycle – no longer so positive', 5 August 2024

Table 5.6: Comparison of 2 year betas from SVE/UUW/PNN and SVE/UUW composites

Frequency	Composite	Rolling average period		
		Spot	1 year	2 year
Daily	SVE/UUW	0.35	0.33	0.29
Daily	SVE/UUW/PNN	0.36	0.34	0.30
Weekly	SVE/UUW	0.42	0.32	0.28
Weekly	SVE/UUW/PNN	0.40	0.33	0.29

Source: CEPA analysis of Bloomberg data

Forward-looking risk

5.114 Adjustments to econometric estimates of beta to reflect forward looking risk are not commonplace in UK economic regulation, and have not featured in previous water controls. This is as predicting changes in beta risk is inherently challenging. The Competition Commission recommended an equity beta above the market evidence for BAA for the Q4 (2003 – 2008) Heathrow price control because of its large capex programme, but later acknowledged this increase in betas did not materialise.[199] And companies during PR19 cited Brexit, climate change and regulatory risks as reasons to adjust up our estimate of beta. On average the period following PR19 final determinations has however been characterised by unlevered betas significantly below the 0.29 point assumption we used.

5.115 Even a confident assessment of the net impact of policy changes at a given review can fail to predict beta, as the formula for deriving beta estimates is:

$$\beta_i = \frac{Covariance\ (i, m)}{(\sigma_m)^2}$$

Where:
i = water stock returns
m = market returns
σ_m^2= the variance of market returns

[199] Competition Commission (2007), 'A report on the economic regulation of the London airports companies (Heathrow Airport Ltd and Gatwick Airport Ltd), p.52

5.116 This relationship implies that higher risk (increased covariance) can be fully offset by volatility of returns from the market index – itself a difficult metric to predict.

5.117 While recognising the higher average capex intensity of PR24 compared to the last 15 years (10.9% vs 8.0%), we remain unconvinced that this requires a change of approach to beta estimation, for the following reasons:

- Any adjustment for beta would need to account for the material changes that have been made to the risk and uncertainty package at PR24. This would need to take account enhanced protections around relative price effects, cost-sharing rates, uncertainty mechanisms, competitive delivery models (DPC and SIPR). As we explain in section 1, revisions to the risk and uncertainty arrangements reduce risk exposure compared to PR19, and so we do not see a clear rationale for uplifts predicated on increased risk.
- We disagree that correlations of beta and measures of capex intensity derived using samples dominated by unregulated firms necessarily have relevance for regulated water firms – particularly as the lack of demand risk in water means that operational gearing is a much less significant driver of beta risk.
- Mason, Robertson & Wright's note considers Kairos' beta regressions using capex intensity and based on water data. They conclude from their preliminary work that the removal of the Covid-19 dummy (which we support) results in a coefficient on capex intensity that is not significant.[200]
- There is a risk of double counting risk compensation to the extent that econometric estimates of beta may already incorporate the market view of risks, as share prices and movements are responsive to information about the future.
- Increases in outturn beta following final determinations will anyway tend to be picked up in the beta estimation window used at subsequent control(s).

5.118 While not rejecting the use of 2 year data, we note that weight placed on 2 year beta was a topic of some debate in the PR19 redetermination process. Water companies and their advisers argued that weight should be placed on longer term beta estimates of at least 5 years.[201] We agree that 2 year betas have some problematic characteristics (e.g. volatility). Unlevered 2 year daily beta has been in a range of roughly 0.20-0.40 since 2008. We therefore consider that 2 year daily betas require rolling averages to smooth this volatility before being used as a datapoint.

5.119 We do not consider introducing additional proxies such as National Grid or the RIIO-3 beta to be appropriate. National Grid has significant risk features that are not relevant to the notional water company, such as exposure to US revenues, and generation (i.e. not network) activities. We also note that the relatively wide (0.30-0.40) asset beta

[200] [OF-OA-084] R. Mason, D. Robertson, S. Wright, 'A report on allowed return issues in disputing companies' statements of case', 29 April 2025, p13
[201] [OF-RR-013] CMA, 'PR19 redeterminations: Final Report', March 2021 para 9.431

range for RIIO-3 is dependent for its upper bound on continental gas distribution companies (e.g. Enagas) with lower-rated regulatory frameworks. While noting this may be a reasonable response to the challenges faced by Ofgem in terms of having no listed UK gas distribution comparators, our sample of pure-play listed water companies covering the whole of the value chain makes such measures unnecessary.

Debt beta

5.120 The recent increase in debt costs across a range of water companies may indicate that debt beta has risen and that exposure of debt to systematic risk has risen, consistent with the higher (0.2) estimate of debt beta used by Barclays in the cost of equity estimate cited by Southern Water.[202] We would welcome an exploration based on more recent data to establish whether a higher assumption may be appropriate for 2025-30.

Low beta anomaly & regression attenuation bias

5.121 Mason, Robertson & Wright's report considers the attenuation bias and low beta anomaly. They argue that the attenuation bias is not relevant for regulatory applications of the CAPM which use a single stage regression, and that a general critique that the market portfolio is not well-specified can be addressed by an instrumental variables approach or by considering a global stock portfolio (the authors predict this would result in lower values of beta). This remedy might be expected to act in a countervailing way to any 'low beta anomaly'. The authors of the report also caution against aiming up several times, and recommend that any residual concerns around underestimation of returns for low beta assets should be dealt with in the round in deciding where to pick a point estimate in the range. [203]

Choosing a point estimate

Our final determination

5.122 We calculated a cost of equity range of 4.58%-5.07% (real, CPIH) for final determinations, with a midpoint of 4.82%.

5.123 As for our draft determinations, we used the assessment framework set out in 2023 UKRN guidance. This endorses picking the midpoint of the range unless there are

[202] [OF-RR-075] Barclays, 'Increasing certainty should rerate the sector', 20 December 2024, p11
[203] [OF-OA-084] R. Mason, D. Robertson, S. Wright, 'A report on allowed return issues in disputing companies' statements of case', 29 April 2025, p15

strong reasons not to. We list our summary findings against each of the considerations in this framework below:

- Cross-checks from market evidence:
  - Debt-based cross-checks: We found our CAPM midpoint of 4.82% to give a spread range of 163-238 bps against a variety of cost of debt benchmarks deflated to a CPIH basis. It was not clear to us that this was obviously too small a spread, given we would expect some reduction compared to PR19 due to higher benchmark interest rates and our 'Stable TMR' approach.
  - ARP-DRP analysis: We did not place weight on this cross-check as we disagreed with Oxera that a linear extrapolation of our cost of new debt allowance to 100% gearing could be used to set a tight lower bound for asset beta, due to a lack of empirical evidence underpinning of Oxera's assumptions.
  - KPMG's 'inference analysis': this analysis sought to use coefficients from a regression based on FTSE companies linking debt values and equity values to infer cost of equity figures from debt yields for Severn Trent and United Utilities. Our main issue with this analysis was the statistical insignificance and instability of some coefficients in the regression used to calculate elasticity estimates. This led us to not place weight on this approach.
  - Hybrid bond cross check: this analysis by Frontier Economics sought to infer a cost of equity estimate by assuming the yield of a National Grid hybrid bond could be decomposed into a utility bond-like yield and an equity yield. We found the call schedule of the instrument made identifying the tenor of the bond yield difficult, and that the extent to which the instrument was 'equity-like' was subjective. This overall made inference to the water sector too uncertain, and so we did not place weight on this approach.
  - Market-to-Asset Ratios (MARs): We estimated a cost of equity range of 4.3-6.3% based on an in-perpetuity MARs model populated with high and low assumptions for RCV growth and RoRE performance, and September 2024 MARs figures. Our view was supported by CEPA analysis suggesting that observed equity MARs for United Utilities and Severn Trent would only be consistent with an insufficient allowed return on equity of 4.75% if expected RoRE was 2-3% - at the upper limit of investor expectations.[204]
  - Multifactor models: We commissioned a report by Professors Robertson & Wright to assess the latest iteration of KPMG's q-factor model. This review concluded that additional factor premia were much less stable than the CAPM market premium, and zero or negative in some parts of the sample. It also found that factor betas were unstable and over some periods statistically insignificant – including cases where the sign of factor betas changed when moving from shorter to longer windows. It also found that the superior performance of the q-factor model compared to the CAPM in explaining historical portfolio returns was not the most relevant criterion when

[204] [OF-RR-079], CEPA, 'PR24 Cost of Equity', 19 Dec 2024, p59

considering the regulatory objective of forecasting required returns for a water utility at 10-20 year horizons. Finally it also raised concerns with the data construction underpinning the modelling, where daily stock returns data did not always cumulate to the monthly equivalent. Taken in the round, these findings indicated to us that the q-factor model was not reliable enough to act as a cross check to the CAPM cost of equity.

- Welfare impacts from underinvestment:
  Despite mechanisms to incentivise investment other than the allowed return (e.g. statutory requirements), we noted the scale of investment required was higher at PR24 than at previous controls, with company business plans forecasting some £45bn of debt and £7bn of equity required under their actual structures, while noting our view that the level of equity finance required could be greater than that forecast by the companies. We assessed that this increased the importance that the risk-return balance of the determination was perceived as attractive by investors.
- Asymmetry in the package of incentives:
  Following significant recalibration of cost, outcomes, and financing allowances, we considered that there was no material unaddressed asymmetry in the PR24 incentive regime following final determinations. This was not identified as a factor influencing our positioning of point estimate in the range.
- Asymmetry in the choice of CAPM parameters:
  We assessed that our choice of parameters was balanced. In particular, our careful consideration of representations on TMR had resulted in policy changes that had the effect of increasing the TMR compared with previous policy approaches. Furthermore, we applied a risk-free rate proxy at 20 year tenor, and thus at the top end of our 10-20 year regulatory horizon. We assessed our beta point estimate to be well supported by the range of econometric estimates, with evidence of higher figures balanced by evidence supporting a lower figure. CEPA proposed a 4.75% real CPIH cost of equity, 35 bps below our final determination[205].

5.124 We found that there were some reasons which supported using the midpoint of our CAPM range. For instance, recalibration of the incentive package and high CPIH inflation suggested increased scope for outperformance over 2025-30, and we found companies had raised £4.6bn of fresh equity under our lower PR19 cost of equity allowance of 4.19% (real, CPIH).

5.125 Overall, however, the combination of prevailing negative sentiment towards the water sector, and the need for significant capital investment persuaded us that a point estimate of 5.10% for the allowed return on equity would support the sector in being able to raise required debt and equity over 2025-30.

[205] [OF-RR-079] CEPA, 'PR24 Cost of Equity', 19 Dec 2024, p3

Issues raised by disputing companies

Debt-based cross-checks

5.126 Northumbrian Water, Southern Water, South East Water and Wessex Water argue that our allowed return on equity offers an insufficient premium over debt benchmarks (e.g. the allowed return on new debt) compared to previous controls. Southern Water argues we have not explained why a smaller equity risk premium relative to debt is appropriate compared to previous price controls[206]

5.127 Anglian Water cites new analysis from Oxera featuring a 6.14%-6.20% range for debt based cross-checks which it describes as a 'lower bound' for the cost of equity.[207] Oxera's approach is a variant of its ARP-DRP analysis in which it extrapolates a company-level 100% geared debt premium using the January 2025 excess yield of listed bond instruments divided by March 2024 gearing. It posits that this premium is a lower bound for the asset risk premium and infers the cost of equity that would result from this lower bound.

5.128 Southern Water also argues we did not pay sufficient regard to KPMG's 'Inference Analysis'; another asset pricing model purporting to indicate the required cost of equity is higher than the cost of debt, which it argues implies an inferred cost of equity of 6.50-6.73%.[208]

5.129 Southern Water also cites Frontier Economics' hybrid debt analysis submitted as part of RIIO-3 business plans using a September 2024 cut-off, which it argues implies a range for the cost of equity of 5.8-8.4%, with a point estimate of 6.6%.

Market-to-Asset Ratios

5.130 Northumbrian Water argues from the use of higher RCV growth assumptions (2.3% for 20 years and 1% thenceforth) that MAR evidence results in an implied CoE range of 5.2 (Severn Trent) to 6.8% (Pennon), compared to our FD estimate of 4.2-6.3%, which it argues demonstrates downwards bias in our allowed CoE.[209]

5.131 Southern Water notes that our aimed up cost of equity is below the midpoint of our MARs-derived range, and that we have applied a lower evidential bar to our use of MARs compared to its own proposed cross-checks. It however states KPMG's MARs estimates, cited at 60% gearing and using a January 2025 cut-off. Rather than use our approach of averaging the three companies, its 3.9%-7.8% takes the lowest single

206 [OF-OA-003] Southern Water, Southern Water Statement of Case, March 2025, 308-313
207 [OF-OA-001] Anglian Water, 'Anglian Water PR24 CMA Redetermination Statement of case', March 2025, 760
208 [OF-OA-003] Southern Water, Southern Water Statement of Case, March 2025, 322
209 [OF-OA-002] Northumbrian Water - Statement of Case March, 2025, 585

company figure (provided by Severn Trent), and the highest single company figure (provided by Pennon).

5.132 Oxera argue that our MARs evidence is insufficiently cautious given the high performance of featured listed companies which makes them unlikely to be representative of the rest of the sector. Oxera argues that our cost of equity inferred from MAR analysis should have a lower bound assuming at least 1% RoRE outperformance to perpetuity (reflecting this high performance). Noting that the lower bound of Pennon's MAR-implied cost of equity is entirely above the average upper bound for Severn Trent and United Utilities, it chooses to regard the latter two companies as outliers and base its preferred MARs cost of equity range solely on Pennon Data, giving a range of 6.13-7.14% (real, CPIH).

Multi-Factor Models (MFMs)

5.133 Northumbrian Water, Wessex Water, and Southern Water contend that we have unduly disregarded evidence from MFMs that the required equity return may be higher than calculated by the CAPM.

5.134 Northumbrian Water cites the Kairos implementation of the q-factor model as giving cost of equity results of 6.1-6.6% (real, CPIH).[210]

5.135 Southern Water argues that the KPMG q-factor MFM has superior ability to explain returns compared to the CAPM and suggests it calculates a cost of equity range of 6.07% (for an unadjusted SVE/UUW portfolio) to 8.29% (for PNN only, including a Covid-19 dummy variable). It suggests this implies aiming up over its view of the CAPM cost of equity by 49-203 bps.[211] This is higher than the MFM evidence included in the KPMG report, which uses a lower bound of 5.71% based on a 10 year data window for SVE/UUW, and an upper bound of 7.69% involving a 10 year data window for PNN, including a Covid-19 dummy variable (establishing a difference relative to the CAPM of 43-181 bps).

CAPM parameter asymmetry

5.136 Northumbrian Water and Wessex Water[212] highlight distributional analysis by Kairos Economics purporting to show that our final determination CAPM cost of equity allowance is low in the distribution. Northumbrian Water argues for an estimate of 6.2% (real, CPIH), which it argues represents 67th percentile aiming up in Kairos' distribution.

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[210] [OF-OA-002] Northumbrian Water - Statement of Case March, 2025, 585
[211] [OF-OA-003] Southern Water, Southern Water Statement of Case, March 2025, 377-380
[212] [OF-OA-004] Wessex Water - Statement of Case , March 2025, 10.11

5.137 Southern Water and South East Water cite distributional analysis from KPMG purporting to show that our final determinations allowed return of 5.10% is downward biased, when considering different factors such as 'methodological robustness' and 'support in academic literature.'

Incentive package asymmetry

5.138 Anglian Water contends there is unaddressed downside skew in the incentive package due to its view that the building blocks of base costs, asset health, enhancement costs, and ODIs / PCDs are mis calibrated. Southern Water argue that there is an expected negative skew to the notional company based on its specific characteristics.

5.139 Southern Water argues that the PR24 FD implies a 0.52% downside risk RoRE skew, which it assumes will be compensated for outside of the cost of equity, but is accepting of a 0.52% asymmetric risk premium added to its 0.50% base level of required aiming up.[213]

5.140 Southern Water argues that it has concerns around its ODI package which it considers impart a negative RoRE skew, and that it would be receptive to either these concerns being addressed at source, or through adjusting its requested allowed return on equity (6.32% real, CPIH) by a further 44 bps.[214]

Top-down cross-checks

5.141 Southern Water cites KPMG analysis estimating equity IRRs for a sample of 13 infrastructure funds and using a data cutoff of June 2024, which it argues gives an average over the latest (June 2024) figure of 8.02-9.11% (CPIH real).[215]

5.142 Oxera argued that discount rates for infrastructure funds HICL and INPP implied a cost of equity range of 7.12%-7.24% (real, CPIH). To derive this figure, Oxera adjusted the reported discount rate for the discount-to-NAV of the fund, converted this to a real figure using the fund's view of inflation, and de-levered this cost of equity to a 55% geared equivalent.[216]

5.143 Southern Water argues that Ofgem's RIIO-3 control is a valuable cross-check for PR24 because both water and energy sectors use the CAPM, Ofgem uses UUW/SVE as a comparator and considers the two regimes as similar in risk. It considers that the Ofgem allowed return on equity should be considered a 'floor' to the PR24 equivalent as it considers water is more risky. We note that Ofgem's SSMD 'early view' point

[213] [OF-OA-003] Southern Water, Southern Water Statement of Case, March 2025, 421
[214] [OF-OA-005] South East Water - Statement of Case, March, 2025 p10
[215] [OF-OA-003] Southern Water, Southern Water Statement of Case, March 2025, 334-335
[216] [OF-RR-091] Oxera, 'PR24 Cross-checks to CAPM estimation', p30 21 March 2025

estimate of the allowed return on equity rebased to 55% gearing is 5.00% (real, CPIH).[217]

5.144 Wessex Water argues for a range of top-down cross-checks, including a) regulated returns from other sectors, b) infrastructure company returns, c) outturn data on water returns, and d) investor surveys.[218]

5.145 Southern Water also presents required return on equity estimates from equity analysts Barclays and JP Morgan, cited at 6.1% and 5-7% (real, CPIH), at 55% gearing.

5.146 Wessex Water cited Oxera's investor survey which it argued suggested a minimum cost of equity of 9.0-9.5% nominal.[219]

Our assessment

Debt-based cross-checks

5.147 We consider it vital that comparisons involving debt instruments and the allowed return on equity are done on a like-for-like basis, and note that this is not the case for some evidence in companies' statements of case. For instance, Southern Water conduct comparisons with nominal traded yields on instruments and our final determination 5.10% allowed return on equity uplifted for a 2% CPIH assumption. This is problematic in two main ways:

- Inflation: Nominal bond yields will embed both an expectation of inflation and an inflation risk premium to compensate investors for the risk that inflation may be higher than forecast. The correct deflator is therefore the CPI swap rate matched to the horizon of the instruments in the comparison. For longer-horizon comparisons beyond the usual 5 year forecast it may be appropriate to also add up to 0.4% to account for the Office for Budgetary Responsibility's estimate of the long-run CPIH-CPI wedge, in line with the conclusion of our economic advisors CEPA.
- Expected returns: The CAPM cost of equity is a return expectation and so should be benchmarked against other return expectations. This implies debt yields being adjusted for the probability-weighted impact of default. While estimates vary, we note Oxera has used 30 bps for water bonds in its ARP-DRP analysis.

5.148 The issue of the premium of the allowed return on equity over the allowed return on new debt being lower than at previous controls is not a new argument, and we

[217] [OF-OA-003] Southern Water, Southern Water Statement of Case, March 2025, 338-342
[218] [OF-OA-004] Wessex Water - Statement of Case , March 2025, 10.16
[219] [OF-OA-004] Wessex Water - Statement of Case , March 2025, 10.16

addressed it in our final determination, where we noted: "While recognising evidence from other companies that the premium has narrowed compared to previous price control determinations, we consider this consistent with our adoption of a 'fixed TMR' approach which makes our allowed return on equity less sensitive to changes in interest rates." We are unaware of any financial theory which posits the need for a minimum wedge between the cost of debt and equity (although we recognise that new debt should normally carry a lower required return on account of ranking senior to equity in repayment order). We consider that another 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.

5.149 Oxera's range of 6.14-6.20% (real, CPIH) from its ARP-DRP analysis depends on excluding Severn Trent and United Utilities from its analysis, whereas its approach just involving these companies and its preferred CAPM inputs would give a range of 5.03%-5.09%. Given these companies are the main source of 'pure play' beta data, and carry a stable Moodys rating of Baa1 consistent with the notional company it seems a reasonable starting point for the analysis that they should be the source of the debt risk premium for Oxera's analysis. Oxera explain that 'the implied risk premium on Severn Trent and United Utilities is markedly below the sector average, signalling that as top performers in the sector, their inclusion into various analyses could lead to results that are not representative of the wider water sector'.[220] However, the conclusion we would draw is that the other companies in the sample should be excluded because of 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, which assume a Baa1 credit rating.

5.150 The ARP-DRP analysis is beset with the same issue raised in our draft determinations by Professors Mason & Wright.[221] Namely, to derive its assumption for the 100% geared debt risk premium, Oxera divides its estimate of the debt risk premium (DRP) by March 2024 RCV gearing. This implicitly extrapolates a linear relationship assumed to hold between the DRP at zero gearing and the observed DRP at March 2024 gearing. This analysis implies that the first tranche of debt issued by the ungeared company has a zero DRP (i.e. it is priced at the risk-free rate). This is implausible and the numerator in Oxera's calculation should be not the observed DRP, but the observed DRP minus the DRP at 0% gearing. This would flatten the line and result in a lower estimate of 100% geared DRP. We are not aware that Oxera has responded to this issue in its report.

[220] [OF-RR-091] Oxera, 'PR24 Cross-checks to CAPM estimation', 21 March 2025, p16
[221] [OF-RR-097] R. Mason & S. Wright, 'A note for Ofwat on what the cost of debt means for the cost of equity', 18 February 2024

5.151 The authors of the KPMG 'Inference Analysis' section describe it as an asset pricing model;[222] they estimate an average elasticity from FTSE companies, and apply this to an average excess return on debt for water companies to directly calculate a cost of equity. Yet this is a departure from standard practice in the academic literature (including Campbello et al.(2008)[223] on which the KPMG analysis is based), which uses the output of KPMG's exercise as an intermediate input into another asset pricing model.

5.152 We consider that the three expert academic reports we have commissioned from professors Wright & Mason which touch on KPMG's 'inference analysis' are important sources to understand the context and robustness of this approach.[224,225,226] The key points of criticism made by Mason & Wright in these reports are: a) that the excess returns are based on index data not company debt costs; and b) that the elasticity regression for the fixed effects constants for Severn Trent and United Utilities are based on a regression which has some statistically insignificant coefficients (i.e. leverage and RFR), with wide confidence intervals. This means that – although the authors do not provide confidence intervals for their cost of equity estimates – it seems likely they will be wide. We consider the appeals process should investigate these statistical shortcomings before placing any reliance on this approach as a cross-check.

5.153 We further note that the predicted cost of equity in KPMG's 'inference analysis' is highly sensitive to the assumed 40 bps wedge applied to the iBoxx A/BBB to estimate the relevant debt premium for Severn Trent and United Utilities. We have concerns that it is too high. For instance, January 2025 yields for UUW's £300m 2042 bond (ISIN: XS2182444914) and SVE's £530m 2042 bond (ISIN: XS0735781675) are 6.04%, compared with the average iBoxx yield of 6.06%.[227] Assuming a zero 'wedge' reduces KPMG's cost of equity estimate for January 2025 to 4.94% (real, CPIH).

5.154 We have previously expressed caution on extrapolating Frontier Economics' hybrid bond results to a water context. Our position remains. Frontier's assessment is based on a single bond issued by National Grid. The bond is unusual, from a different sector, and has an annual call schedule from 2025 until maturity and a resettable coupon. It also appears to be highly illiquid, with a spread between bid-yield and ask-yield

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[222] [OF-RR-084] KPMG, 'Estimating the cost of capital for PR24' March 2025, p90

[223] Campello, M., L. Chen, and L. Zhang (2008). "Expected returns, yield spreads, and asset pricing tests." The Review of Financial Studies, 21(3), 1297-1338.

[224] [OF-RR-097] R. Mason & S. Wright, "A Note for Ofwat on what the cost of debt means for the cost of equity", 18 February 2024.

[225] [OF-RR-087] R. Mason, D. Robertson & S. Wright, "Responses to KPMG's August 2024 report on the cost of equity", 19 December 2024.

[226] [OF-OA-084] R. Mason, D. Robertson & S. Wright, ' Report for Ofwat as part of the appeal to the CMA of the PR24 Final Determination', 27 April 2025

[227] These bonds have broadly similar years-to-maturity (17.3 and 17 years) compared to the average of the iBoxx A/BBB (18.6 years) in January 2025.

spread of 7.31%-3.35%.[228] These features make accurately estimating the expected tenor of the bond for benchmarking purposes highly challenging (we would expect the probability of the call option being exercised and hence probable life in years to be highly sensitive to changing beliefs about the future interest rate). The implications of this are that it is not possible to robustly identify the yield on the 'debt-like' part of the hybrid bond, to infer the yield on the remaining (purportedly equity-like) part of the bond.

Market-to-asset ratios

5.155 Information gained from market-to-asset ratios is a valuable input to the assessment of regulatory determinations. We consider market-to-asset ratios offer a useful cross check on required equity returns, albeit one that requires some interpretation and which is probably not sensitive enough to precisely calibrate a cost of equity allowance. Overall, the methodology we have applied is consistent at PR24 to PR19.

5.156 A common theme of company-estimated MAR ranges has been the reliance on Pennon data to supply an upper bound for the MAR-implied cost of equity, rather than averages. We observe the rights issue by Pennon in January 2025 may have distorted MAR valuations, and we doubt that the true cost of equity faced by the company is as high as the 6-8% (real, CPIH) suggested by companies' analysis. Our view is supported by the company's submission as a third party noting the similarity of its own cost of equity proposal (5.17% vs. our 5.10%), and its observation that it was able to raise £490m under our final determination allowed return, with MARs remaining stable in the aftermath.[229] We question whether a company with a 6-8% cost of equity whose actual financing costs were so materially undershot by our allowance would make such a submission.

5.157 While SES Water was acquired by Pennon in January 2024 at a reported premium of 6% previous private water company transactions in June and July 2022 indicated premia of 44% and around 50% for the Bristol Water and Northumbrian Water transactions.[230] These premia were well in excess of the prevailing average MAR premium for listed water companies of 21-22%.[231]

5.158 We also note the submission from Citizens' Advice analysing the recent purchase of ENWL by Iberdrola for a 44% premium to RAV.[232] The 4.11% high case cost of equity (assuming 2% RAV growth and 1% RoRE outperformance) may support the view that

[228] Source LSEG Workspace, retrieved 25/04/2025
[229] [OF-RR-092] Pennon, 'Response to SOC submission', 21 April 2025
[230] [OF-RR-083] HSBC Global Research, 'CK Infra & Power Assets – Divestment of Northumbrian Water adds value', 15 July 2022
[231] Source: Ofwat in-house MAR Model
[232] [OF-RR-010] Citizens Advice, 'Third Party Submission for the water PR24 redeterminations', 22 April 2024

required returns for investors in network utilities are significantly lower than our 5.10% point estimate.

Multi-Factor Models (MFMs)

5.159 Supported by our academic advisers, we have engaged with the evidence and material provided on MFMs throughout the PR24 process. However, we agreed with the conclusion of Mason, Robertson & Wright on the previous iteration of KPMG's q-factor model that it was not suitable for informing estimates of the required return.[233] This was as two out of three factor premia in the model were unstable and individually insignificant (SIZE and ROE), and the factor betas used in the analysis showed signs of drift and changing signs over time. The authors of the review (correctly, in our view) noted that this kind of instability was a serious issue for the regulatory purpose of using the q-factor model over long (10-20 year) horizons for setting the allowed return.

5.160 Mason, Robertson & Wright make several observations in their most recent note:[234]

- Firstly, they note the widespread use of the CAPM amongst CFOs to estimate the cost of equity, and its endorsement from leading textbooks. They note some evidence of increasing private sector adoption of MFMs, but with a tendency towards incorporating risk factors around interest rates, inflation and foreign exchange rates rather than standard asset pricing factors.
- Secondly, they note features in the q-factor model used by Kairos and KPMG in terms of the 'drift' in factor betas even using 10 year windows, and also evidence of instability over time in the additional q-factor premia. In the views of the report's authors, these features imply estimates of the cost of equity that would be volatile over time. In a regulatory setting taking a multi-year view of investment and the cost of capital, estimates that vary wildly make the setting of the allowed cost of capital too sensitive to the timing of the regulatory decision.
- Finally, the authors of the report also reference the material increase in complexity that is brought about by the use of MFMs, and in particular how to forecast factor premia and factor betas that may not have a stable long-term average. The q-factor model is also only one of many multifactor models, so these deliberations would not necessarily be confined to the factors featuring in the q-factor model.

5.161 Taking account of the challenges referenced above in the factor betas, the wide range of alternative factors that could be taken into account, the underlying levels complexity and need for data to be replicable and produce consistent estimates, the

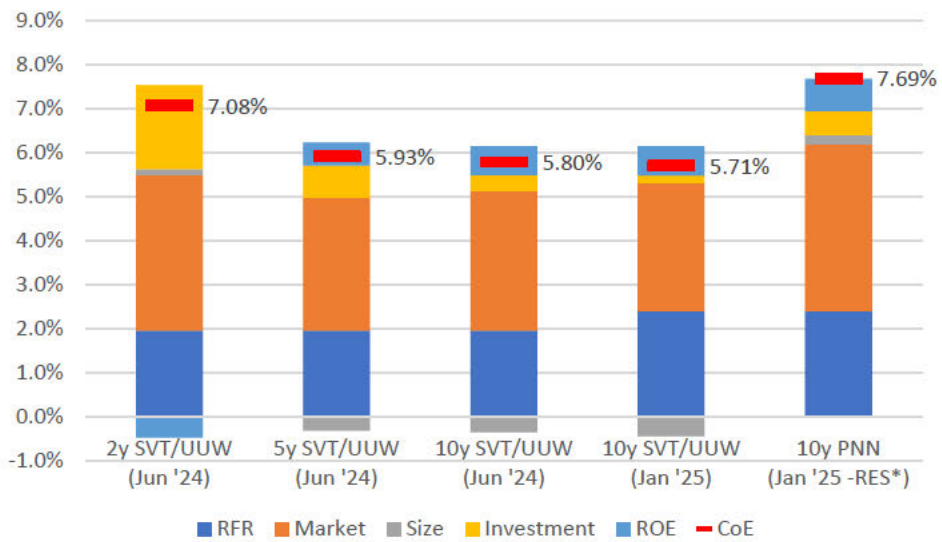
[233] [OF-RR-087] Mason, Robertson & Wright, 'Responses to KPMG's August 2024 report on the cost of equity', 19 December 2024

[234] [OF-RR-086] Mason, Robertson & Wright, 'A report on allowed return issues in disputing companies' statements of case', 29 April 2025

application of MFMs for regulatory purposes would in our view materially increase the complexity of the regulatory process without material improvement to the estimation of the allowed return.

5.162 Our specific concerns around the stability of the KPMG q-factor model are illustrated by Figure 5.9, which sets out the implied q-factor cost of equity estimates used to inform a) KPMG's MFM evidence for its August 2024 report using a June 2024 cutoff and 2, 5, and 10 year windows, and b) its most recent MFM evidence, using 10 year windows.

Figure 5.9: KPMG q-factor model estimates of CoE decomposed into factor contributions (real, CPIH)



Source: Ofwat analysis of KPMG q-factor model
* denotes q-factor model with Covid restriction dummy

5.163 It is clear that the determinants of the q-factor cost of equity change markedly between 2 and 5 year windows – a transition marked by a c.100 bps decline in the estimated cost of equity and a sign change for ROE and Size, the economic interpretation of which is unclear. We observe that longer window q-factor estimates seem much closer to KPMG's (January 2025) 5.82% range midpoint. KPMG's preferred point estimate of 6.33% is based on an unusual decision to apply Pennon as a sole datapoint for the upper bound, with a controversial Covid-19 dummy variable that is not statistically significant at the 10% level in the q-factor regression. Figure 5.9 also sets out that for this Pennon specification, the regression results in the q-factor cost of equity incorporating a small size premium - a development hard to reconcile with the status of Pennon as company with a £5.8bn enterprise value.[235]

[235] Source: Ofwat MARs model, using March 2025 average market capitalisation and net debt.

5.164 Consistent with the views expressed by Mason, Robertson and Wright, we contend that the multifactor modelling results have been put forward as more than a cross-check in disputing companies' statements of case, and are in fact a key piece of primary evidence underpinning the aimed up allowed return on equity proposed by both Kairos and KPMG. This can be inferred from the 6.33% KPMG point estimate, which is higher than KPMG's CAPM range of 5.60-6.04%, and Kairos' point proposal of 6.2%, which is also above their CAPM range of 5.5-5.9%.

5.165 Given the q-factor model's central role in companies' allowed return on equity requests, we consider that much more work is needed to provide assurance over its results. Especially given new changes to the q-factor modelling framework involving various dummy variables, we would have expected this to be accompanied with lengthy sensitivity testing involving different listed companies, different specifications of dummy variables, and analysis of outputs going back over many years for confidence to be placed in the results. This has not happened however: a single permutation (10y UUW/SVE) has been provided which is comparable to results from 6 months ago, with the other permutations (including from Kairos Economics) including novel and contentious Covid-19 dummies.

5.166 We query the inclusion of the Covid-19 dummies in the q-factor modelling, given that their coefficient in regression outputs supplied by both Kairos and KPMG is insignificant at the 10% level. In addition, CEPA show in their report that Kairos' and KPMG's conclusions on market beta depend materially on the use of Covid-19 dummies. Any additional explanatory effect from non-CAPM factors is conditional on their inclusion, which CEPA argue is not justified. This is in addition to concerns over the robustness and stability of the non-CAPM factors. [236]

CAPM parameter asymmetry

5.167 We do not consider it necessary to quantify aiming up in terms of an overall cost of equity distribution. In our view such approaches may place too much confidence in the ability to correctly determine the distributional properties of CAPM components. The degree of aiming up is ultimately a regulatory judgment reflecting various factors, and attempting to identify a percentile may result in spurious precision.

5.168 CEPA consider Kairos Economics' equating of the 67-75th percentile with a 50-80 bps 'aim up', and find this to be mostly driven by their large standard error for the 1 year arithmetic average ex-post TMR (1.7%). This is implausible as a TMR estimation error, as it seemingly suggests that a TMR as low as 5.23% and as high as 8.63% (real, CPIH) are plausible TMR estimates. CEPA find that adopting a more plausible standard error

[236] [OF-OA-083], CEPA, 'Supplementary evidence on the cost of equity: response to statements of case" 29 April 2025, Figure 5, p11

of 0.5% in the Kairos model suggests that the 28 bps of aiming-up applied by Ofwat at FDs results in a cost of equity that is above the 75th percentile.

Incentive package asymmetry

5.169 As referenced in section 2, we have 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. We consider that the disputing companies have not engaged adequately, either through the PR24 process itself or in their Statements of Case, with the evidence we have set out on the contribution that financing performance and inflation bring to the RoRE performance of the notional structure.

5.170 Amending either the allowed return or the incentive package to reflect the expected performance of companies that forecast underperformance against the cost allowances and outcome benchmarks set in our determination would introduce perverse outcomes to the overall long-term allocation of risk and reward. We consider any revisions to the risk and return package should be considered at the source of the expected out and under performance, underpinned by an assessment of the reasons for that expected underperformance, rather than poorly-targeted adjustments to the allowed return on equity.

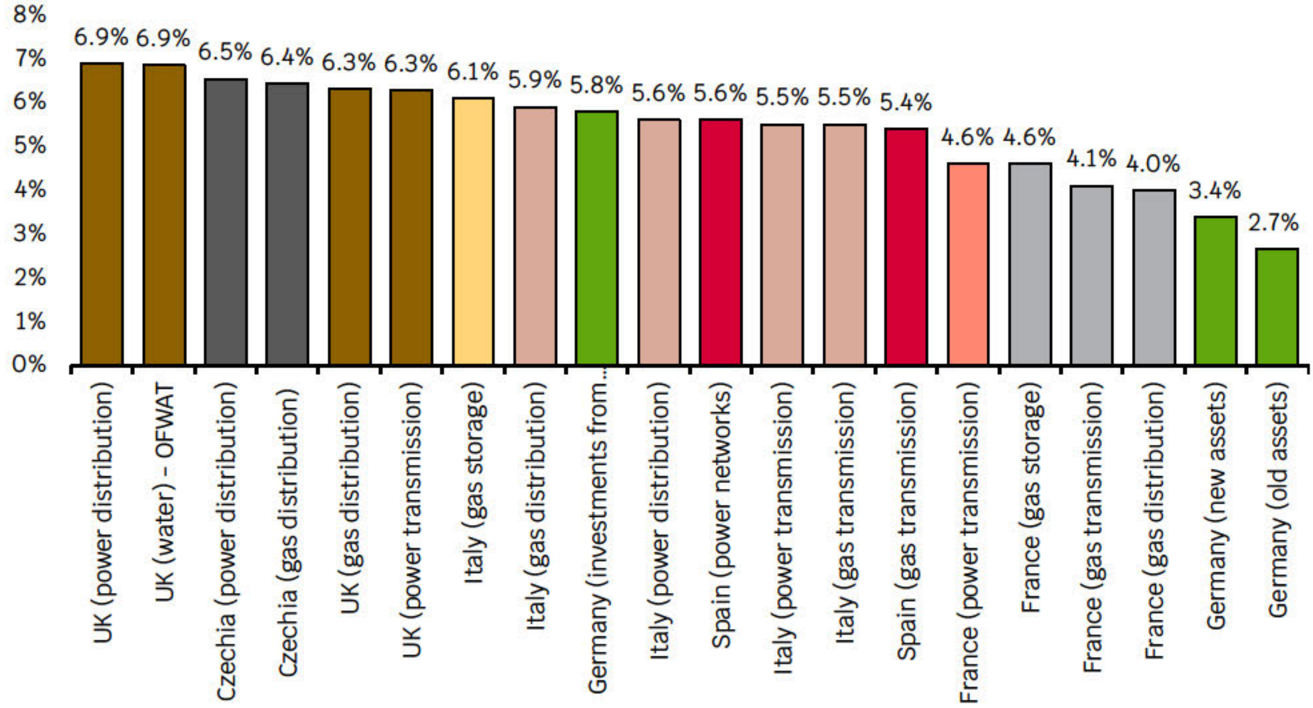
Top-down cross checks

5.171 We consider cross-checks based on infrastructure fund discount rates should be applied with caution, given potential variations in gearing, time horizon, and portfolio risk (amongst other factors), compared to water. We were also not convinced that the entirety of any NAV discount should be assumed to be driven by discount rates. NAV discounts may reflect existing portfolio performance rather than the rates used to conduct further transactions. Not applying a NAV discount lowers Oxera's implied cost of equity range to 4.90%-5.23%.

5.172 The allowed return on equity from Ofgem's RIIO-3 (ET/GT/GD) controls should also be interpreted cautiously as a cross-check to water. The high-paced electrification and asset stranding risks relating to phasing-out of gas (which are likely embedded in the betas used by Ofgem) have no obvious equivalent in water.

5.173 We do not consider that our final determination allowed return on equity is positioned poorly against relevant utility benchmarks. Figure 5.10 from UBS's 24 January 2025 publication sets out, that on a nominal pre-tax basis, Ofwat's PR24 allowed return is second highest against European peers.

Figure 5.10 Allowed returns by country (nominal pre-tax %)



Source: UBS, 'Back to basics', 24 January 2025
Note: UK figure uses 2.0% CPI assumption

6. Retail Margin Adjustment

Final determinations

- A retail margin adjustment (RMA) is necessary to avoid double counting of systematic risk compensation for the household retail control in equity beta and the retail margin
- We set a retail margin of 1.5% at final determinations, up from 1.2% at draft determinations and 1.0% at PR19 and the CMA's PR19 redetermination. This reflected increases in the quantum of working capital and financing costs.

Companies' statement of case

- Southern Water argues retail margin financing rates should be the sector allowed cost of equity or WACC allowance, reflecting the integrated nature of the retail control and the need to maintain the notional gearing assumption.
- KPMG argues retail systematic risk compensation is not precisely measured and could be higher, meaning the RMA could be overstated.

Our response

- We stand by our final determinations approach, which we consider prices the cost of finance in the retail control fairly, on the basis of compensation for risks in the retail control.

Our final determinations

6.1 The retail margin is intended to provide a reasonable allowance for financing costs incurred by the household retail control. This control differs from the wholesale controls because it is less capital-intensive and has shorter-lived assets, with financing associated with working capital playing a more prominent role.

6.2 The retail margin is applied to the share of wholesale revenue apportioned to households. Our final determinations used a rounded point estimate of 1.50%. This represented a significant increase from the 1.0% used for PR19 and retained by the PR19 CMA panel for its redeterminations.

6.3 The retail margin consists of three elements:

a) Return on fixed assets
b) Return on working capital
c) Compensation for household retail systematic risk

6.4 Because we set an allowed return that uses an estimate of equity beta based on the consolidated appointee (i.e. reflecting systematic risk for all wholesale and retail activities), systematic risk in the household retail control is remunerated twice; firstly in the retail margin and secondly in the appointee allowed return. To avoid this double-count, we adjust the appointee allowed return figure for a retail margin adjustment (RMA) to derive a wholesale allowed return. The RMA is calculated as systematic risk compensation for the retail control divided by sector RCV (all figures 5 year sector averages).

Issues raised by disputing companies

6.5 Southern Water suggests it is conceptually wrong to have different financing costs other than the WACC in our bottom-up build up of costs for the retail margin. It argues in practice that the retail control is integrated with wholesale controls and that all financing is raised at the appointee level.

6.6 Southern Water argues that notional gearing is set for the appointee, and that the notional company raises debt up until notional gearing to support the RCV. It argues that this means the retail control cannot be financed with debt or it would increase gearing at the overall appointee level to above the notional gearing level.

6.7 It suggests that our retail margin financing calculation assumes that RCFs are used to accommodate working capital requirements, but that this is wrong because our issuance & liquidity calculations assume RCFs are fully utilized to fund the cost of carry for wholesale controls.

6.8 As a result of the above arguments it concludes that the working capital financing rate and return on fixed assets should be either a) the allowed return on equity, or b) the WACC allowance. It cites KPMG's analysis using the consultancy's preferred estimates that using these figures reduces our estimate of the retail margin allowance (RMA) from 0.06% to a range of -0.03% to 0.01%, and thus should be recalibrated by the CMA.

6.9 Southern Water also argues that increasing volumes of capital delivery through off-balance sheet methods such as DPC and SIPR impact the margins included in the calculation but are not reflected in the fixed asset balances, leading to internal inconsistencies in our approach.

6.10 KPMG is also critical of assumptions it says are necessary to support making a retail margin adjustment; in particular it argues that our logic demands that a) systematic risk in the household retail control is higher than in the wholesale control, and b) that the systematic risk compensation in the retail margin fully captures the risk of the household retail control. If assumption a) is incorrect, it argues this may lead to a required wholesale WACC larger (not smaller) than the appointee WACC. If assumption b) is incorrect, it argues this may mean overall compensation for risk is understated following the application of the RMA.

Our assessment

6.11 We stand by the approach set in our final determinations, which was the subject of consultation throughout the PR24 process, and followed the approach adopted at PR19, including in the CMA's PR19 redeterminations – with the exception of removing wholesale creditor balances (which is an issue we and the disputing company side agree on).

6.12 Southern Water's issues concerning the retail margin adjustment are also indirectly issues relating to the bottom-up calculation of the retail margin, because it 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.

6.13 The practice of setting a financing return different to the sector WACC to reflect control-specific financing characteristics is well-established. We have compensated for retail financing costs with a retail margin drawing on a 'bottom-up' and 'top-down benchmarking' approach since PR14. At PR19 we allowed the option of separate allowed return calculations by control in business plan tables to accommodate different company views of control-level risk, and the Havant Thicket control has since PR19 received a different WACC to Portsmouth Water's other wholesale controls, reflecting the project's atypical characteristics.

6.14 While agreeing the retail control does not raise capital autonomously and should not be modelled as such, the retail control is clearly different in character to wholesale controls. Its 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. Applying a working capital financing rate based on the sector WACC with a long-run (10-20 year horizon) simply overstates the true working capital financing rate relevant to household retail, which in our view is a short term rate linked to 1m SONIA, consistent with floating rate RCFs and other short-term facilities. We do not recognize Southern Water's criticism that our approach to calculating issuance & liquidity costs fully accounts for RCF capacity. Our approach to setting a liquidity allowance is 'needs-based' (i.e. we look at capacity required for net operations, plus capital expenditure, plus interest/tax, and add this to refinancing) – and base our allowance on this plus an assumption for cost of carry - rather than attributing apportioning facilities for liquidity purposes and calculating their cost.

6.15 We do not consider that the retail margin is an economically significant contributor to appointee gearing. Of the three components, 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.

6.16 We also consider Southern Water's criticism levelled at the lack of inclusion of DPC and SIPR assets in fixed assets misunderstands the purpose of this line item in the retail margin. Retail fixed assets are those capital assets linked to household retail activities (i.e. billing and customer service). These activities do not sit within DPC/SIPR projects, whose unitary charge is recovered by the appointee from its customer base. There are therefore no additional fixed assets from DPC/SIPR activities not accounted for in this line item.

6.17 The household retail margin of 1.0% was not contentious through PR24, and was increased at 1.2% and 1.5% at draft and final determinations, respectively, without company challenge. While calibrating an allowance for household retail risk is complex due to the lack of pure play household retail comparators, we believe our approach is proportionate, as it involved triangulating the level of the overall allowance against top-down benchmarks suggesting a range of 1.2%-2.6%, with an average of 1.8%, recognising that the margin should be at the lower end of these benchmarks given the control's unusual status as a retail division operating in a market of regional monopolies (most retail for UK utilities is contestable, and hence exposed to demand risk).

6.18 We consider KPMG's argument that our application of an RMA requires the underlying assumption that the household retail control is riskier than wholesale controls is incorrect. Because our bottom-up derivation for the retail margin itself includes an item for systematic risk compensation, and because whole-company systematic risk is estimated via appointee beta data (i.e. encompassing retail as well as wholesale risks), there is therefore a clear double count, which needs to be removed irrespective of the relative risk of wholesale and retail controls.

6.19 We recognise the compensation for systematic risk in the retail margin and retail margin adjustment is not estimated with precision. This is a reflection of the lack of pure-play listed household retail companies to provide estimates of beta, and the lack of representations on this issue over the course of PR24 suggest it was not significant.

7. Company-specific adjustments (SEW)

Final determinations

- South East Water pursued its claim for a 30 bps CSA uplift to its cost of debt
- We did not allow South East Water's uplift assessing that the company had failed our level of uplift assessment and our customer support assessment.

Companies' statements of case

- South East Water and KPMG argue that, as an infrequent issuer of debt, it faces higher RoRE volatility and thus higher beta.
- It argues for an uplift of 30 bps on embedded debt to compensate for this effect.

Our response

- South East Water and KPMG have not demonstrated that being an infrequent issuer leads to higher direct costs or a higher beta. We do not consider the evidence supports customers paying for an uplift on South East Water's debt financing costs.

Our final determinations

7.1 Company Specific Adjustments (CSAs) are uplifts to the cost of debt which we have allowed for some small companies, to reflect structurally higher financing costs a small notional company may face on account of its small size.

7.2 For our PR24 final methodology, we signalled that successful applicants for a CSA would need to pass a level of uplift assessment and a customer support assessment (we did not apply a 'benefits assessment' as we had at PR19:

7.3 **Level of uplift assessment**: To pass, companies would need to demonstrate evidence of additional costs which might reasonably be faced by a notional small company, compared to our allowed return. We stated that these costs would need to relate to small size, rather than factors more clearly under management control. We also said that receipt of an uplift would be subject to sense check of the company in question facing higher actual costs than our sector benchmarks.

7.4 **Customer support assessment:** To pass, companies' request for an uplift would need to be accompanied by high quality, compelling evidence that their customers supported funding an uplift, and that this should seek to understand customers views rather than solely relying on a survey

7.5 South East Water engaged with our CSA process at PR24, seeking an uplift of 30 bps on its overall cost of debt. South East Water did not engage with the CSA process at PR19 (i.e. it did not provide evidence for our Levels, Benefits or Customer Support assessments), though it stated in submissions that it should receive an uplift. It did not receive an uplift at PR14. At PR09 and PR04 it received an uplift on the sector overall cost of debt of 10 bps.

7.6 South East Water's 30 bps cost of debt claim relied on its assessment that it was an 'infrequent issuer' of bonds, and thus that this exposed it to greater risk, which needed to be compensated. Its draft determination submission included analysis from KPMG in support of its claim, which focused on three approaches

- **Full risk sharing:** Pass-through of forecast South East Water embedded cost of debt from Ofwat balance sheet cost of debt model
- **50% risk sharing:** Sharing of 50% of the difference between a) South East Water's actual cost from b) and the sector benchmark
- **Pricing differentials in systematic risk:** Simulations were used to estimate difference in standard deviation of RoRE between a) frequent issuers, and b) infrequent issuers. This was then used as a scaling factor for the sector beta. We note this is effectively a request for a cost of equity uplift, despite KPMG recalculating it in cost of debt terms.

7.7 For our final determinations we did not allow South East Water's requested uplift, for the following reasons.

7.8 We found it failed the **level of uplift assessment** for the following reasons:

7.9 We found KPMG's simulations did not result in a downward skew to expected RoRE performance for an infrequent issuer, and considered it did not follow from the greater overall range of financing RoRE outcomes over 20 years that this meant higher systematic risk over 2025-30.

7.10 We assessed that both risk-sharing options would dilute incentives on companies to issue debt efficiently in future, and would expose South East Water's customers to the crystallised risk of its previous financing decisions which deviated from the notional structure at the time.[237] We were not convinced this was in customers' interests.

7.11 We noted that Ofgem had only awarded 25 bps to the new debt of infrequent issuers, that it was reviewing this approach for RIIO-3, and that there was no evidence from the water sector of water companies taking out Constant Maturity Swaps (the source of the 25 bps figure).

7.12 We forecast that Affinity Water, the other large WoC, whose RCV was similar in value to South East Water, had the lowest cost of embedded debt over 2025-30.

7.13 We noted by reference to recent Moodys Credit Opinions that South East Water did not face the tighter guidance on credit metrics linked to small size faced, that was faced by small water only companies, comprising of Portsmouth, South Staffs, and SES Water. This suggested to us that the company's size was not a factor in credit risk.

7.14 We found it failed the **customer support assessment** for the following reasons:

I. only a slim majority (54%) of surveyed customers found a bill impact of £4 per household per year acceptable, with two thirds rejecting the principle of a CSA.
II. the question phrasing used to establish support for the CSA was potentially misleading, as it implied that allowing the uplift would make the company 'resilient to any future shocks', which we considered to provide an unrealistic view of the benefits of receiving the uplift.

Issues raised by disputing companies

7.15 South East Water continues to consider that it should receive a 30 bps uplift to its cost of debt on account of having been an infrequent issuer, setting out its concern thus:

" is it fair and proportionate that SEW, as an infrequent issuer historically, should be exposed to the consequences of higher interest cost variance without some form of offsetting compensation for the resulting risk that shareholders bear around cost of debt out- and under-performance?"

7.16 It now proposes that its 30 bps uplift be applied to its embedded cost of debt allowance alone, as it considers it will be a frequent issuer of debt going forward.

7.17 South East Water argues that there is an inconsistency between our policy of sharing totex underperformance with customers but not interest underperformance,

[237] In 2004, South East Water increased its gearing to 79% from 47% as part of a securitisation exercise, causing its credit rating to fall to Baa2 – a rating it held until November 2024

particularly as it considers that interest underperformance typically stems from factors outside of company control.

7.18 It also cites KPMG's report, which responds to our assessment of its prior report and affirms its previous simulation based approach of uplifting the Ofwat final determinations equity beta by 1.09x – this being its view of ratio of RoRE standard deviations of a) an infrequent notional issuer and b) a frequent notional issuer, who are alike in other respects.

Our assessment

7.19 We do not agree with South East Water's argument that underperformance on embedded debt is mainly due to factors outside of company control. For instance, 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. In this context, we consider that a mechanistic sharing mechanism for embedded debt underperformance would be a mistake, diluting incentives to issue efficiently and exposing customers to the cost of high-risk financial structures. While we fundamentally disagree with the adoption of such a policy (as it transfers an element of equity risk from investors to customers), if such a policy were adopted, at very least, it should apply symmetrically to all companies including to share outperformance.

7.20 KPMG affirms its argument from previous submissions which we have already addressed. In essence, KPMG's argument is that differences in standard deviation of RoRE relative to the notional company can be used to calibrate an uplift for equity beta. Its RoRE-based analysis arguing for a higher 'forward-looking' beta due to the larger PR24 capex programme is a variant of this, and we imagine there are many other company-specific characteristics across water and other sectors that could be used to make similar arguments.

7.21 We consider this argument to be wrong in the specific way KPMG has used it, and wrong in a general sense.

7.22 Firstly, KPMG has taken a RoRE standard deviation based on a 20 year simulation and used it as an input to 5 year RoRE for 2025-30. This is wrong because of the time horizon mismatch, but also because there is no difference in the contribution to 5 year RoRE volatility from embedded debt for either a frequent or infrequent issuer – it is zero in both cases. This is as both the allowance for embedded debt and companies' actual embedded debt cost is fixed at the start of a 5 year control period. Therefore (although some companies may have a higher embedded cost than the regulatory allowance), this is not a driver of RoRE risk over the 5 year period.

7.23 We also reject the broader premise that RoRE volatility must necessarily increase beta. As set out previously in this document, the formula for deriving beta estimates is:

$$\beta_i = \frac{Covariance\ (i,m)}{(\sigma_m)^2}$$

Where:

i = water stock returns
m = market returns
σ_m^2= the variance of market returns

7.24 KPMG's analysis assumes that higher volatility in water RoRE can cause the numerator of this fraction to increase, but has not demonstrated either empirically or through reasoned argument why higher volatility must increase covariance with the market portfolio. In its most recent report it argues that "The higher risk exposure is caused by a systematic driver of risk – i.e. financing risk – and therefore intuitively results in a higher beta."[238] But it is not intuitive to us why this kind of risk cannot be diversified – for instance through forming a portfolio of investments with exposure to debt that complements that of the infrequently issuing company. In addition, if the risk of infrequent issuance was a driver of a high cost of equity, South East Water had constrained its ability to issue more frequently through the choices made by management and its investors in 2004 to adopt an aggressive financing structure in 2004.

7.25 In assessing the question of whether South East Water should receive a CSA, we consider it important to assess the company's customer research on its CSA proposal and its customers' willingness to pay, in line with our **customer support assessment** – a part of our PR24 methodology. This assessment is designed to provide protection to the company's customers analogous to that in a competitive market – where customers (through market prices and choice of provider) would have a choice in whether to fund higher financing costs relating to a company's size. The assessment we carried out for our final determination concluded that there was insufficient evidence of customer support for the adjustment, taking account of the results of South East Water's survey and the manner in which its customers were surveyed. We have identified no information in the company's Statement of Case that would alter the view expressed in our final determination.

[238] [OF-RR-106] KPMG 'PR24 cost of debt: analysis of the infrequent issuer premium', March 2025

8. Cost Recovery

Final determinations

- PAYG rates were set to reflect operating costs as a proportion of totex, or (where proposed by companies) operating costs plus capital infrastructure renewals expenditure (IRE) as a proportion of totex.
- RCV run-off rates were set in line with our final methodology framework, ensuring intertemporal fairness while balancing affordability and financeability.
- We made a number of interventions to cost recovery rates, concerning the following areas:

  1. We accepted Wessex Water's proposal to change its approach to recovering IRE through PAYG, although we increased this to 100% of IRE.
  2. We made limited adjustments to companies whose run-off rates were clearly outlying against their peers, where there was headroom against credit metrics, within the guidance on upper limits set in our PR24 methodology and a rate inferred by remaining asset lives.
  3. To support financeability by profiling cashflows to support credit metrics. We accepted proposals from two companies for small increases to RCV run-off rates to support financeability, although we reduced the uplift for one of the companies.

- We made adjustments to PAYG and RCV run off rates for three of the disputing companies:

  1. we reduced run-off rates for Anglian Water by 0.19% for the draft determinations. Anglian Water applied the lower rates in its draft determination representation, therefore we maintained the rates for the final determinations;
  2. we reduced RCV run-off rates for Southern Water by 0.13% for the final determinations; and
  3. we increased PAYG rates for Wessex Water to recover 100% of its infrastructure renewal expenditure in period, in line with its draft determination representation. Wessex Water's proposal was a material change from the approach to PAYG rates in its business plan. Wessex Water set out an objective to maintain bill increases within a 30% limit. To help achieve this, in its business plan it chose not to recover any IRE in period, and in its representation, it proposed to recover 80% of its IRE in period, suggesting that this percentage could be adjusted if forecast bills were higher or lower.

Companies' statements of case

- Companies have proposed RCV run-off uplifts to address perceived financeability constraints caused by the tightening of S&P Global's FFO/net debt ratio
- Two companies set out that the CMA could adjust cost recovery rates as a financial lever to manage bill profiles, to the extent possible, to address customer affordability.

Our response

- No company has objected to our approach to setting PAYG rates, where we made technical adjustments to take account of differences in totex requested by companies and allowed in the final determination. We recognise that the CMA may want to make similar technical adjustments to reflect its view of operating and capital expenditure in its determinations.
- We consider the RCV run-off rates in our determinations achieved a fair allocation of costs between current and future customers, while maintaining adequate headroom in our financeability assessment.
- We are open to targeted use of PAYG and RCV run-off as financial levers to address financeability constraints and assist customer affordability within reasonable limits. This is a matter that was supported by a number of companies through the PR24 process.

8.1 Totex allowances are based on the efficient level of expenditure for companies to deliver commitments to customers and the environment, maintain the asset base and deliver agreed enhancement programmes. Expenditure may be funded initially through a mix of revenue allowances, retained earnings and finance from the capital markets. Totex allowances for the wholesale controls are recovered through allowed revenue in one of two ways:

- expenditure can be recovered in the year it is incurred through pay-as-you-go (PAYG); or
- it can be added to the RCV and recovered over a longer period through RCV run-off.

8.2 PAYG and RCV run-off rates set the speed at which companies receive revenue for the 2025-30 period and beyond. The RCV run-off allowance represents the recovery by investors of their previous investment, held in the RCV. The RCV for each wholesale control represents the net stock of investment contributed by investors to the control, rather than the capital value that would be ascribed to the assets of the relevant control. Our aim is to ensure that investment that is included in the RCV is recovered from customers over a time period that broadly aligns with the benefits that customers receive from that investment. Therefore, in our final methodology, we set out a framework for us to assess RCV run-off rates proposed in business plans, taking account of intertemporal fairness, affordability and financeability of the notional company, and we signalled upper limits for RCV run-off rates that we considered to be reasonable.

Our final determinations

8.3 We set PAYG rates to reflect operating costs as a proportion of totex, or (where proposed by companies), operating costs plus capital infrastructure renewals expenditure (IRE) as a proportion of totex. We applied a technical adjustment to the rates proposed by companies to reflect our view of operating and capital expenditure in our final totex allowances, while maintaining the approach proposed in company business plans.

8.4 In most cases, companies proposed RCV run-off rates that were within the upper limits proposed in our PR24 methodology. For several companies, we applied the RCV run-off rates proposed in representations to our draft determinations in our final determinations. In considering any interventions to companies' proposed RCV run-off rates, we applied our assessment framework that was set out in the PR24 final methodology, and our interventions focussed primarily on companies whose proposed RCV run-off rates were outlying data points.

8.5 We made targeted adjustments to RCV run-off rates proposed in company representations and business plans for a total of eight companies in our final determinations, including Anglian Water and Southern Water amongst the disputing companies:

- Capitalisation rates: In our final determinations we accepted proposals put forward by Wessex Water and SES Water to include capitalised IRE in PAYG rates. The proposals put forward by both companies in their draft determination representations were a material departure from the business plans, though we recognised that these changes were within the bounds of the final methodology.
- Targeted adjustments: We made targeted adjustments to four companies where we identified headroom against financial ratios, and a rate inferred by average

remaining asset lives. We reduced Anglian Water's RCV run-off rates based on this criteria at the draft determinations, which it chose to accept in its draft determination representation. For Southern Water, Severn Trent and South West Water; we reduced RCV run-off as we assessed these companies to be outliers at the final determinations. Our adjustments were targeted at assisting with the affordability challenges in customer bills while managing the effects on our financeability assessment.

- Cashflow profiling: we supported two companies' propositions to apply an RCV run-off uplift for financeability purposes. Although we reduced the uplift proposed by Severn Trent to reflect the financial headroom in our financeability assessment.
- Upper limits: We intervened to adjust run-off rates for United Utilities and SES Water where the proposed run-off rates were outliers in comparison with other companies and there was headroom for the adjustments to be made under our assessment framework.

Issues raised by disputing companies

8.6 Anglian Water and Southern Water propose a change to their RCV run-off rates to address a financeability constraint that both argue exists in the final determinations. Southern Water and Wessex Water propose the use of cost recovery rates as a lever to manage bill profiles, where possible, to address customer affordability.

8.7 Anglian Water has asked for its RCV run-off rates to be set at the PR19 level in its redetermination.[239] The company argues this is still lower than the range of natural RCV run-off rates identified by Reckon LLP in a document it produced for the company in support of its rates at PR19. As the natural rates identified were higher than the rates applied at PR14, the company sought to move to the natural rates over two price control periods, setting PR19 rates at a level between PR14 rates and natural rates as identified by Reckon LLP. The aim was to smooth the impact of the transition to natural rates on customer bills.

8.8 Anglian Water states that it accepted Ofwat's upper limits set out in the final methodology and our intervention to reduce RCV run-off rates in draft determinations. However, it sets out that an uplift to RCV run-off rates is an appropriate net present value neutral approach that is fair to customers to address the financeability constraint that the company considers exists in its final determination.

8.9 Southern Water has maintained its draft determination representation position, conducting its financeability assessment using RCV run-off rates proposed in its business plan. It states that to achieve a BBB+ credit rating with S&P, a further increase to cost recovery rates (among other options) would be necessary if the

[239] [OF-OA-001], Anglian Water, Statement of March 2025, Chapter H.2, paragraphs 790-792, pages 203-204

implied credit rating using existing RCV run-off rates indicates under-recovery of economic depreciation in AMP8. It asks the CMA to consider the adjustment of cost recovery rates in its redetermination, asking that RCV run-off rates are adjusted upwards to ensure notional financeability, or reduced in the case of excess headroom to support bill affordability.[240]

8.10 Wessex Water is also asking the CMA to employ financial levers to the level of PAYG in order to manage bill pressures within a limit of 30% increase in real terms by 2030, managed through the amount of capitalised infrastructure renewals expenditure recovered in period. Similar to its draft determination representation, it asks the CMA to limit any bill increase over the period to 30%.[241]

Our assessment

8.11 No company has objected to our approach to setting PAYG rates where we made technical adjustments to take account of differences in totex requested by companies and allowed in the final determination. We recognise that the CMA may want to make technical adjustments that are similar in nature to those applied in our final determination to reflect its view of operating and capital expenditure in its determinations.

8.12 Wessex Water's proposed cap on bills is based on its Board's view that its real bill increase should be less than 30%, providing this is financeable, which it sets out is supported by its Customer Challenge Group.[242] We did not consider the need to constrain bills in the manner requested by the company in our determinations, as customer bills in the final determination were lower than asked for by the company. Should the financial modelling indicate that bills remain below the level targeted by the company post the financeability assessment in the redetermination, we are unlikely to support increases in cost recovery rates to target an arbitrary 30% bill increase through 2025-30. If the bill profile exceeds a 30% increase in the redetermination, we would support adjustments to the level of cost recovery that balance the interests of customers in accordance with the framework for assessing cost recovery set out in our PR24 methodology.

8.13 As a general point of principle, it can be appropriate to use both PAYG and RCV run-off as financial levers to adjust cash flows between periods to address a financeability constraint where this results from a cash flow deficit, or to smooth customer bills to assist affordability, within reasonable limits. This approach was supported by a

[240] [OF-OA-003] Southern Water - Statement of Case March 2025, Annex 8: Post-remedy PR24 calculations, paragraphs 10-18, pages 575-577
[241] [OF-OA-004] Wessex Water - Statement of Case, March 2025, paras 2.53-2.55, p.11
[242] [OF-RR-044] Wessex Water, 'WSX-R06-Affordability', August 2024, p.1

number of companies through the PR24 process and we consider it preferable to approaches where arbitrary adjustments to the allowed return are made.

8.14 As referenced above, both Anglian Water and Wessex Water have made material changes to their proposals for run-off rates compared with their PR24 business plans. Anglian Water suggests in its statement of case that adjusting RCV run-off rates is NPV neutral and is fairest to customers.[243] We address issues relating to our financeability assessment in section 9 - financeability.

8.15 Furthermore, Southern Water and Wessex Water have asked the CMA in their statements of case to employ the flexibility of cost recovery levers to increase cash flows where a financeability constraint is apparent, and to slow cost recovery, where possible, to support affordability.[244] [245] Taking all of these factors together, suggests that there is a reasonable degree of flexibility that can be brought to bear in the redetermination process.

8.16 However, we consider the run-off rates set in our determinations achieved a fair allocation of costs between current and future customers, while maintaining adequate levels of financial headroom in our financeability assessment. We maintain the view that an assessment of asset lives is the most consistent starting point for assessing whether the run-off rates proposed by the companies are reasonable, and that this can be approximated from audited depreciation data in company accounts.

8.17 Finally, we note that the consultancy report, commissioned by CCW from MCC Economics & Finance, submitted to the CMA as part of the redetermination process supports the use of historic cost depreciation as an indicator for the run-off rate.[246] The report states that it is a more adequate measure for the price determination, and the period sample is suitable to produce a reliable estimate of a long term rate.

[243] [OF-OA-001] Anglian Water - Statement of Case, March 2025, Chapter H.2, paragraph 792, page 204
[244] [OF-OA-003] Southern Water - Statement of Case March 2025, Annex 8: Post-remedy PR24 calculations, paragraphs 10, 11, 16
[245] [OF-OA-004] Wessex Water - Statement of Case , March 2025, Chapter 2, paragraphs 2.54 and 2.55 pages 11-12.
[246] [OF-RR-039] MCC Economics & Finance, 'A review of Ofwat's PR24 Final Determination WACC allowance: a report for CCW', April 2025, paragraphs 99-103

9. Financeability

Final determinations

- We assessed our final determinations to be financeable for each company on the basis of the notional capital structure. We considered that an efficient company with the notional capital structure would be able maintain a credit rating two notches above the minimum investment grade.
- We assessed financeability before the application of revenue adjustments for PR19 reconciliations. For all disputing companies, revenue adjustments would provide additional headroom in financial metrics.
- Our financial modelling was underpinned by a 4% dividend yield, which amounted to £11.9 billion of dividend payments under the notional capital structure. This was a material change to the approach set out in the PR24 methodology and draft determinations, which took account of company representations.
- Our final determinations included funding costs of £0.3 billion to support £12.7 billion of new equity, based on a revenue allowance of 2.5% of new equity for issuance costs.

Companies' statement of case

- Companies argued that the final determinations were not financeable on the basis of the notional capital structure due to insufficient returns to attract new equity investment and financial metrics that were not consistent with the target credit rating.
- Companies argued that the allowed return on equity was too low and downward skew in the determinations would mean that investors could not earn the allowed return.
- Companies also argued that financial ratios were not consistent with guidance from credit rating agencies that has been updated since the final determinations.
- Other issues raised by the disputing companies were that the notional company could not maintain a suitable credit rating under downside scenarios, and that the underlying assumptions for the notional company were incorrect.

Our response

- We maintain that on the basis of our final determinations, an efficient company with the notional capital structure could maintain a suitable investment grade credit rating, and could raise the equity and debt financing required to fund investment over 2025-30.

- We maintain our position that if companies were not able to access new equity, a restriction of dividends, along with the allowance for issuance costs would contribute substantially to the additional funding requirement.
- We set the notional capital structure in accordance with the framework we set out in the methodology. A number of companies did not object to the level of notional gearing in their representations to the draft determinations. Other assumptions for the notional company are consistent with the approach at previous price reviews, for example the level and type of index-linked debt, or were amended following company representations, such as the approach to maintain the dividend yield and include higher equity injections
- There is a need to adopt some caution is responding to recent changes to the assessment of the regulatory regime by the credit rating agencies. The factors that are relevant to their credit rating assessment include the weight that is placed on each company's appetite for risk within its financial policy, which has a material bearing on the assessment of credit risk and which can have a material impact on credit rating. While changes to credit risk have been impacted by higher public sentiment, leading to more political and regulatory oversight, the credit rating agencies have revised their approach to adopt a more nuanced approach to taking account of risk inherent in each company's appetite for financial risk. It would be perverse for the notional financeability assessment to be adjusted to take account of the characteristics of companies with risky financial structures that do not align with the notional structure.
- We consider that equity solutions and the use of financial levers, PAYG and RCV run-off rates, to be the fairest approach for customers to dealing with any constraint identified in the assessment of the notional financeability. We maintain the position set out in our final determination that, by maintaining a 4% dividend yield, and an approach that supports equity injections for the notional capital structure, companies will have a range of options in terms of meeting their own financeability requirements in the 2025-30 period.

9.1 Our approach to financeability is designed to assess whether revenues, relative to efficient costs, are sufficient for a company with the notional capital structure to finance its investment on reasonable terms, while protecting the interests of customers now and in the long term.

9.2 The financeability assessment considers whether, when all of the individual components of our determination are taken together (including allowed expenditure, allowed return and retail margin, PAYG rates and RCV run-off, but before reconciliation adjustments), an efficient company with the notional capital structure will be able to generate cashflows sufficient to meet its financing needs. As part of this we carry out an assessment of financial ratios in setting our determinations.

9.3 Our overall approach to financeability at PR24 followed the approach taken at PR19 and in previous price determinations. In our final determinations, we made revisions to our assessment of dividends and the provision of equity in our financeability assessment to reflect representations made on our draft determinations.

Our final determinations

9.4 We assessed that the final determinations were financeable on the basis of the notional structure, such that the financial metrics in our determinations were compatible with a credit rating that was at least two notches above the minimum investment grade. This applied for all companies, with the exception of Portsmouth Water, as a result of its specific circumstances.[247]

9.5 In carrying out our financeability assessment, we followed the approach set out in our PR24 methodology and draft determinations, commencing with an opening notional gearing of 55% and an opening proportion of index linked debt of 33%. Consistent with the approach taken in previous price determinations, we carried out our financeability assessment ahead of the application of reconciliation adjustments for past performance to maintain the integrity of the incentive regime.

9.6 In our final determinations we applied a 4% dividend yield in our financeability assessment, which was consistent with guidance we had previously set out on the reasonable level of dividend for a company performing in line with its determination. This was a material change to the approach that we had consulted on in development of our PR24 methodology and applied in our draft determinations where we had modelled a greater level of equity retention to support investment growth. Our revised approach took account of company representations, supported by a report commissioned by a number of water companies from Oxera in response to draft determination.[248] We discuss this issue further in our assessment of issues raised by disputing companies below.

9.7 In total, our final determinations included total dividends of £11.9 billion across the sector. Where further equity was required, we assumed this is all provided in the form of new equity, and we provided an allowance for equity issuance costs, which we increased to 2.5% (from 2.0% in the draft determinations), to reflect further information from recent issuances from regulated companies.

[247] We assess that the final determination for Portsmouth Water is consistent with a credit rating one notch below our target credit rating. This is consistent with its current Moody’s rating where the scale of investment related to the Havant Thicket Reservoir relative to its RCV means Moody's effectively applies an upper limit to the achievable credit rating during the construction phase. It is also consistent with the company's expectations in its business plan.

[248] [OF-RR-031] ' Oxera, Investability at PR24, Final report for Water UK', August 2024, Section 4, pps. 45-59

9.8 In our final determinations, the RCV grew by 32% in real terms across the sector from £96.7 billion at 31 March 2025 to £127.9 billion in 2030 (both figures in 2022-23 prices). To support this growth, our financeability assessment was underpinned by new equity of £12.7 billion under the notional structure. We provided an allowance of £0.3 billion for equity issuance costs.

9.9 Our view of new equity was above the c.£7 billion of equity that companies forecast would be required under their actual financial structures, though we note that some companies also suggested they would forego or reduce dividend payments. However, the change in the approach we took in relation to dividends and equity injections in our final determinations was in direct response to a challenge put forward by Oxera on behalf of a number of companies. Our approach supports companies, under a range of financial structures, to raise equity to support investment in the 2025-30 period, with companies having a choice as to how that equity is delivered: through retained earnings or through fresh equity.

9.10 Overall, our financeability assessment and the assessment of downside sensitivities suggested that our determinations provided sufficient headroom for companies to withstand reasonable downside risk. We set out that, in severe cases this could be mitigated through reductions to dividends or the provision of additional equity injections. We also noted that most companies, including all of the disputing companies, received additional revenue from PR19 reconciliations (totalling £1.5 billion across the sector) which will provide additional headroom in the 2025-30 period.[249]

9.11 We maintain that our final determinations would allow an efficient company with the notional capital structure to raise the equity set out in our determinations. The recalibration of expenditure allowances and performance targets, together with the material changes we have made to the overall risk and return package and our decision to set an allowed return on equity towards the top of our range aimed to support companies to raise the necessary levels of equity finance in the 2025-30 period. We set out that, where that equity is not forthcoming, a dividend restriction, even to zero, would provide material additional support across the sector for companies to meet their investment requirements.

9.12 The levels of investment growth in 2025-30 and beyond provide significant opportunities for investors. And there are opportunities for investors to earn enhanced returns where companies deliver high levels of performance to customers and where companies outperform, this will support equity financeability and support companies to raise necessary finance at efficient cost. Our protections in our risk and return package were calibrated to allow the real allowed return on equity to be exhausted where companies deliver relatively extreme levels of underperformance. And in these

[249] This includes £0.3 billion of reconciliation adjustments that update for outturn data for the period 2019-20.

cases, the incentive regime aims for companies and/or their investors to take corrective action to minimise the impact of underperformance on investor returns over the longer term.

Issues raised by disputing companies

9.13 All of the companies have set out that their final determinations are not financeable on the basis of the notional capital structure, in part, because the disputing companies have argued that they would not be able to raise the equity that is required for 2025-30 and assumed in our determinations. The companies argue that this is because the allowed return has been set too low and the balance of risk and return means that they would be unable to earn the allowed return, asserting that certain costs are unfunded and there remains a negative skew in outcome delivery incentives alongside other incentives such as price control deliverables.

9.14 Companies have also raised the following issues in relation to the financeability assessment of the notional company:

- Financial metrics are not consistent with the target credit ratings.
- The notional company could not maintain a suitable credit rating under severe but plausible downside scenarios.
- The underlying assumptions for the notional company are incorrect.

9.15 Southern Water argues that our assumption for index-linked debt overstates the adjusted interest cover ratio.[250] It argues that our assumption 90% of opening index-linked to RPI is inconsistent with full CPIH indexation of the RCV and the lack of any allowance for RPI-CPIH basis risk in the allowed cost of debt. The company argues that a notional company would be expected to have transitioned all its RPI-linked debt to a CPIH basis to mitigate unremunerated RPI-CPIH basis risk. Southern Water states that this overstates the adjusted interest cover ratio as the cash interest cost of RPI-linked debt is lower than that of CPIH-linked debt.

9.16 Southern Water also argues that the financeability assessment does not take account of the profile of interest payments as it assumes a constant cost of debt across the period.[251] The company argues that, in reality financial ratios will fall as the proportion of new debt, which has a higher allowed cost than embedded debt, increases across the period. This is a new argument put forward by the company.

[250] [OF-OA-003] Southern Water - Statement of Case March 2025, Chapter 1 Risk and financeability, paras 201-202, p.91
[251] [OF-OA-003] Southern Water - Statement of Case March 2025 Chapter 1 Risk and financeability, paras 203-204, p.91

9.17 Southern Water also suggested that the reduction in notional gearing between PR19 and PR24 was to support the financeability assessment.[252] Southern Water has also suggested this was the reason for the reduction in notional gearing from PR14 to PR19. As such, the companies suggest that financeability should be assessed at the PR19 level of 60% to ensure this is not the case. Wessex Water also notes that a reduction in notional gearing 'boosts' the financial ratios and may inadvertently lead to an erroneous conclusion that the efficient company is able to finance its functions.[253]

9.18 Anglian Water argues that the step change in investment means that investors' cash returns will be significantly constrained for at least 25 years.[254] It argues that investors in the notional company will not receive net dividends commensurate with their investment over a 25-year time horizon. Anglian Water sets out that investors must not only provide new equity and forgo any dividends in AMP8 but will need to do the same in AMP9, and its investors would not be net investment cash flow positive until after AMP10. The company also argues that any de-gearing required to reduce the assumed notional gearing at the beginning of AMP8 would reduce the net dividend yield further.

9.19 A report for Anglian Water, South East Water, Thames Water and Southern Water by KPMG argues that an insufficient allowed equity return will limit a notional company's ability to service debt in downside scenarios.[255] The report argues that:

- the final determination does not meet the revised guidance for Fitch and S&P;
- in its calculations, KPMG assumed all of the index linked debt was linked to CPI;
- we have failed to assess financial resilience to a reasonable downside of operational performance;
- the median credit rating is considered to be most relevant for financeability, since companies are required to maintain two investment grade ratings; a company with three ratings would therefore remain in compliance with its licence even if one rating fell below investment grade. KPMG sets out this can be regarded as a conservative assumption because (i) nine companies have two or fewer ratings and (ii) a cash lock-up is triggered if any rating falls to BBB/Baa2 with negative outlook or below;
- it is not prudent to assume that Moody’s or S&P will disregard any metrics below published thresholds during AMP8, arguing that S&P's analysts have limited discretion to rate above an anchor; and

[252] [OF-OA-003] Southern Water - Statement of Case March 2025, Chapter 1 Risk and financeability, para 205, p.91[253] [OF-OA-004]Wessex Water, 'Wessex Water Statement of case', March 2025, Section 5 Ofwat regulation and duties, para 5.22 p.31

[253] [OF-OA-004]Wessex Water, 'Wessex Water Statement of case', March 2025, Section 5 Ofwat regulation and duties, para 5.22 p.31

[254] [OF-OA-001] Anglian Water, 'Anglian Water PR24 CMA Redetermination Statement of case', March 2025, paras 636-639, pps. 167-169

[255] [OF-RR-038] KPMG, 'Estimating the cost of capital for PR24', March 2025, para 9.1.1

- given uncertainty over the assumed equity contribution at the start of AMP8, the notional company should also be financeable at 60% gearing.

9.20 Finally, South East Water and Southern Water argue that the calibration of the aggregate sharing mechanism does not consider the financeability assessment. Southern Water sets out that the thresholds are too large as they do not off sufficient protection to robustly maintain at least a Baa2/BBB negative outlook rating,256 and South East Water states that at the notional company would not be able to retain an investment grade credit rating in worst case scenarios.[257] South East Water goes on to state that our requirement to maintain investment-grade credit ratings means this should form an important test of financeability.

Our assessment

9.21 In this section we set out our response to the issues raised by the companies in their Statements of Case. We summarise the actions of the credit rating agencies both prior to, and following, our final determinations and we set out our assessment of what this means for the a financeability assessment for a company with the notional capital structure.

9.22 We assess financeability on the basis of an efficient company with the notional capital structure. As such, our stating position is that each company is able to meet the cost and service benchmarks set in our determination. This is consistent with the approach we have taken over previous price reviews and with the approach accepted across UK regulatory networks; where companies underperform against these benchmarks and/or carry a greater level of financial risk in their actual financial structures, it means that credit ratings can, and do, come under pressure absent mitigating action.

9.23 We have set out our reasoning for selecting the 55% notional gearing level at PR24 in the final methodology[258], and as referenced in section 3, we consider this to be a matter that could be deprioritised for the purposes of the redeterminations. We do not consider it necessary to consider financeability on the basis of previous notional capital structures. Notional gearing is set at each price review and, as such, the level of notional gearing at previous price reviews is not relevant to the assessment of financeability. Notional gearing has varied within a range of 50% to 62.5% across the price reviews since privatisation; changes have not been factored into our assessment

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[256] [OF-OA-003] Southern Water, Southern Water Statement of Case, March 2025, para 278, p. 104

[257] [OF-OA-005] South East Water - Statement of Case, March, 2025Annex H – risk and financeability', paras 88-94, p.18

[258] [OF-RR-037] Ofwat, 'Creating tomorrow, together: Our final methodology for PR24, Appendix 10 – Aligning risk and return", December 2022, Section 4 Notional capital structure, pps 27-33

of financeability at those reviews and neither did the CMA factor it into its PR19 redeterminations, where notional gearing reduced to 60% from 62.5% at PR14.

9.24 We maintain the position set out in our final determinations that the determinations are financeable on the basis of the notional capital structure. The decision in our final determinations was underpinned by the levels of new equity issuance that was included in our financeability assessment, although we recognised that if equity were not forthcoming, dividends together with the allowance for equity issuance costs covered the majority of the modelled equity financing requirement.[259]

9.25 We assessed that companies would be able to attract the equity required based on:

- our decision to set an allowed return on equity towards the top of a range that was underpinned by market data;
- the recalibration of expenditure allowances and performance targets, that meant that an efficient company with the notional structure would be able to earn its allowed return;
- material changes we have made to the overall risk and return package to protect companies from unreasonable levels of downside risk;
- evidence that material amounts of equity had been raised by water companies in the water sector since 2021; and
- a reasonable allowance for equity issuance costs and a commitment to fund the reasonable costs of a new equity listing to ensure companies had access to the widest sources of investment.

9.26 Importantly, the actions taken by a number of companies go beyond statements made by companies as part of the PR24 process. While some of these instances reflect the need for individual companies to support their financial resilience, overall, they support the view that the sector remains 'investable'. For example:

9.27 South West Water did not consider equity financing to be necessary in either its business plan or its draft determination representation (as summarised in our draft and final determinations)[260,261]. However, the group carried out a rights issue in January 2025, successfully raising £490 million of new equity.

[259] [OF-OA-020] Ofwat, PR24 final determinations: Aligning risk and return –appendix, December 2024, p.71
[260] [OF-OA-020] Ofwat PR24 draft determinations: Aligning risk and return –appendix, December 2024, Table 13.
[261] [OF-OA-020] Ofwat PR24 final determinations: Aligning risk and return –appendix, December 2024, Table 11.

9.28 South East Water raised £75 million equity in December 2024. While this was to improve the company's liquidity position (a matter relevant to a recent rating assessment by Moody's Ratings (Moody's)), this was additional to the £75 million to £125 million equity that its investors had already proposed as necessary to support investment in the 2025-30 period.[262]

9.29 Affinity Water proposed no new equity in its PR24 representation to its draft determination. [263] It has since confirmed that its investors have entered into a legally binding and unconditional agreement to inject £150 million equity into Affinity Water Limited before 31 March 2026.[264]

9.30 Southern Water announced that it will raise £900 million of committed equity to support its 2025-30 investment programme.[265] This announcement, made in February 2025, after our final determination, is greater than the £650 million proposed in its PR24 representation to the draft determination. [266]

9.31 We respond to companies arguments in relation to the allowed return in section 5, and the balance of risk and return in section 2.

Proportion of index-linked debt

9.32 The approach taken at PR24 aligns with the approach adopted over previous price controls, which itself reflected the approaches first consulted upon in the 2006 Financing Networks consultation to determine the proportion of index linked debt in the notional capital structure.[267] We set it by reference to the levels of index-linked debt reasonably achievable for a company with the notional capital structure as a result of direct issuance.

9.33 We consider it is important that there is full alignment between the treatment of swaps in the assessment of the cost of debt and the approach to assessing financeability. For both elements we make no assumption that the notional company must make use of swaps to achieve the proportion of indexed linked debt. We do not consider it necessary to include swaps or to provide for the cost of swaps in the assessment of the cost of debt for reasons explained in the section on the allowed cost of debt. If these costs were included it would be necessary to recalibrate the proportion of index-linked liabilities for the purposes of the financeability assessment.

262 [OF-OA-005] South East Water - Statement of Case, March, 2025 paragraph 2.55(e)
263 [OF-OA-020] Ofwat PR24 final determinations: Aligning risk and return –appendix, December 2024,Table 11.
264 [OF-RR-001] Affinity Water PLC, corporate announcement, 17 February 2025
265 [RR-OF-002] SW (Finance) I Plc, corporate update, 18 February 2025
266 [OF-OA-020] Ofwat PR24 final determinations: Aligning risk and return – appendix, Table 11.
267 [OF-RR-050] Ofwat, Ofgem, 'Financing Networks: A discussion paper', February 2006, Section 7a: Market mechanisms, Issuing index-linked debt pps 48-50

9.34 We maintain that it is appropriate to assume that the majority of embedded index-linked debt is linked to RPI. While our determinations have fully transitioned to a CPIH basis from April 2025, most index-linked debt in the sector remains linked to RPI with our opening assumption of 90% RPI-linked, broadly reflecting the sector. Companies have not generally sought to close out the RPI-CPIH basis risk through the use of derivatives despite have significantly more RPI linked exposure than the notional company, and we have no expectation that such arrangements should be put in place by a company with the notional structure. This approach is also consistent with PR19, where we assumed that 100% of index-linked debt was linked to RPI, whilst 50% of opening RCV and all additions were linked to CPIH. The CMA did not make any adjustments to the assumptions we applied for index-linked debt in its redeterminations at PR19.

Dividends and new equity

9.35 We have maintained the approach adopted in previous determinations that equity has a role to play in financing real RCV growth. In the absence of additional equity, the level of investment and RCV growth means that gearing would increase, putting pressure on financial metrics and financial resilience in the medium term. Whilst it is to be expected that gearing will fluctuate between periods as companies raise debt and equity to fund investment, we consider it appropriate that our financeability assessment is carried out on the basis of the notional company maintaining gearing close to 55% throughout the period.[268] This will help support a company with the notional capital structure to access debt funding on efficient terms as and when required.

9.36 It is possible for the increased equity financing requirement to be met by fresh equity or, in part, through retention of retained earnings and dividend restriction. We have provided an allowance of 2.5% of equity issued for issuance costs, amounting to approximately £0.3 billion for the sector. We consider this allowance is favourable to companies, being towards the upper end of our analysis of recent equity issuance, which ranged from 1.36% to 2.61%, and represented an increase over the draft determinations.[269] Unlike the approach adopted at PR09, we have not proposed that this funding allowance should be clawed back if it is not used, as we considered the funding to be inherently consistent with the long term funding requirements of the notional capital structure. But this is a matter that could be revisited as part of the redetermination process. We note that companies have not challenged the allowance or this element of the policy approach in their statements of cases.

[268] Our financeability assessment allowed gearing to increase to 57.5%, before new equity was introduced to return gearing to 55%. We considered this was consistent with issuing equity in tranches.
[269] [OF-OA-020] Ofwat, PR24 final determinations: Aligning risk and return appendix, December 2024, Table 7 Issuance costs for recent regulated utility equity raises, p.68

9.37 The financeability assessment in our final determinations was underpinned by a dividend yield of 4%, consistent with our guidance of a reasonable dividend yield for a company that performs in line with its determination. This was a change from the approach which had been the subject of consultation in development of PR24 methodology, in direct response to representations to our draft determinations. In draft determinations, we restricted the dividend yield to 2% for all companies to provide part of the equity requirement through increased retained earnings.

9.38 As we noted above, the approach adopted in our draft determinations had also been consistent with the business plans of a number of companies that had chosen to restrict dividends in their actual structures over 2025-30. However, some company representations, and an Oxera report commissioned by Water UK, argued that restricting dividends to 2% could have a detrimental effect on the attractiveness of the sector:

9.39 Oxera suggested that we had not taken account of the difference in dividend requirements across investor groups (which it referred to as a 'clientelle' effect).[270] It set out that, in practice, market frictions such as taxes, transaction costs, or asymmetric information are present, and certain sets of investors are likely to prefer different payoff profiles according to factors such as their income preferences, tax situation, and their own funding arrangements. Oxera set out that long-term investors more broadly may prefer predictable, reliable dividend streams.

9.40 Similarly, Anglian Water[271] and Severn Trent[272] also argued that there were adverse signalling effects associated with the lower dividend policy. Expecting investors to accept a lower dividend yield could lead to a higher required equity return, reflecting the uncertainty over realising that return. Therefore, companies suggested that we should assume that equity finance is predominantly secured via new equity issuance, rather than via a reduction in dividends.

9.41 Noting evidence we had seen of companies scaling equity injections in a manner that supported the ongoing payment of dividends we accepted in our final determinations that it was appropriate to amend the approach in our financeability assessment, to apply a 4% dividend yield and the greater use of equity injections. Evidence from recent equity issuances by companies with significant growth expectations has shown that companies maintain a dividend stream whilst raising new equity. Severn Trent Water and National Grid both scaled up their issuance requirements to maintain

[270] [OF-RR-031] Oxera, 'Investability report for Water UK', August 2024, Section 4, pps. 45-59
[271] [OF-RR-035] Anglian Water, 'Anglian Water PR24 Draft determination representations', August 2024, Section 14.2.1, pps. 123-124
[272] [OF-RR-036] Severn Trent Water, 'SVE3.01 Risk and return, draft determination representations', August 2024, pps 38-40

dividend yields.[273] However, this appears to directly contradict evidence provided to the CMA that the sector would have to wait until 2040 before seeing any cash dividend.[274]

Profiling of interest payments

9.42 We applied a constant allowed return across the price control period in our revenue allowances. We applied this in the financial model for our financeability assessment, and the reported financial metrics reflect this. This is a practical approach, and is consistent with previous price reviews when the allowance for embedded debt was higher than the allowance for the new cost of debt.

9.43 Assuming the cost of new debt remains above the cost of embedded debt, we would expect the average cost of debt to increase over the price control period and therefore, interest payments to increase. This means that financial ratios will be marginally understated within the financial model in the first two years and marginally overstated in the final two years within the financial model. We would expect that companies have adequate financial levels of financial resilience to manage these effects and to retain any cash flow benefit in the early years due to this averaging which can be offset against the higher interest charges in later years.

9.44 No company nor other stakeholder raised this as an issue with us through the price review process. Credit rating agencies look at forward credit metrics over a number of years as part of their rating assessment, and recognise the cost of new debt reconciliation will be carried out at the beginning of the next price control period. We consider this issue can be descoped from the assessment in the redeterminations, but if it is considered to be an issue, the revenue profiling functionality within the financial model could be used to profile cashflows and hence financial metrics.

Financial metrics

9.45 We considered whether the financial ratios produced within the financial model were consistent with the target credit rating for an efficient company with the notional capital structure. To achieve this we assessed the average financial ratios against levels that were broadly based on the evidence available from the approaches and

[273] In respect of recent equity issuances by National Grid and Severn Trent, both companies retained dividends yields consistent with the policy over previous years. For example, in its consolidated cash flow statement for the year ended 31 March 2024, Severn Trent plc reported cash inflows from issues of shares of £1.0 billion and cash outflows in respect of dividends paid to shareholders of the parent company of £0.3 billion. [OF-RR-051] Severn Trent plc, 'Annual report and accounts 2024', May 2024, Consolidated cash flow statement, p.221

[274] [redacted]

assessments published by the credit rating agencies at the time of our final determinations, and evidence from company business plans and representations to our draft determinations.

9.46 We considered a range of financial metrics. As for previous price determinations, companies tended to focus on adjusted interest cover ratio (AICR) and funds from operation to net debt (FFO/net debt) as the key financial metrics in their business plans. However, it is recognised that each credit rating agency applies its own methodology in assessing financial metrics, making adjustments that may be specific to each company, and this requires careful interpretation when considering the levels of financial ratios that should be considered for the purposes of the financeability assessment. We also placed weight on the level of the key financial ratios targeted by companies in their business plans, which supported a view that care is needed in being overly prescriptive with the target financial ratios that should be applied in a financeability assessment.

9.47 Moody's publishes guidance for gearing and adjusted interest cover for the water sector for various ratings above investment grade (Baa2 upwards). The requirements for other rating agencies can only be inferred, drawing on the evidence from company rating assessments and the financeability assessments included in company business plans. Most companies targeted credit ratings from Moody's and S&P in their financeability assessments.

9.48 Our assessment is broadly based on the approaches adopted by the credit rating agencies but, as noted above, cannot be expected to replicate exactly the approach for each rating agency, for each company. Therefore, it is not relevant to consider a median credit rating for the financeability assessment. The level of the cash lock-up in company licences is also not relevant to the financeability assessment, as this is designed to support financial resilience by retaining cash within the business under stressed conditions.

Actions of the credit rating agencies immediately prior to our final determinations.

[redacted]

[275] [OF-RR-028] Moody's Ratings, 'Reduced predictability of regulatory environment pressures credit quality', November 2024, Exhibit 4 Moody's generic guidance for the UK water utilities

[redacted]

[redacted]

9.51 On 12 November 2024, **S&P** published a note setting out its rating actions for eight companies.[276] It considered the operating and financing conditions over 2025-30 could be more challenging for 'almost all' the companies that it rates. It set out that the whole sector is exposed to potential weakening of the regulatory framework, but that risks were more pronounced for selected companies and could lead to differentiated ratings. It took rating actions which it said could lead to rating downgrades post final determinations, but this would depend also on any 'strategic decisions' made by the companies in response to the final determinations.

9.52 We took account of the changes to guidance published by the credit rating agencies in our final determinations to the extent the guidance was clear and relevant to the notional company. **Fitch** did not provide any update ahead of final determinations on the basis of an expectation of material changes from draft to final determinations, and a need to understand companies' ability to adjust financial policy. As such, it would not have been appropriate to second guess its actions.

Actions of the credit rating agencies since final determinations

Moody's

9.53 Moody's completed a number of rating assessments for water companies following the end of the appeal window for the final determinations. It affirmed the ratings of 10 companies and downgraded 4 companies.[277] It set out that the ratings of disputing companies would be reassessed following the CMA's determinations.

[276] [OF-RR-051] S&P Global Ratings, 'Rating actions taken on eight U.K. water companies on potential revision to regulatory framework support', November 2024
[277] [redacted]

9.54 Our assessment of Moody's credit ratings demonstrates a clear differentiation in how Moody's views companies within the water sector. [redacted]

S&P

9.55 Following the final determinations, S&P tightened its rating sensitivities for the 2025-30 period for some companies to reflect its assessment of the heightened public and political expectations placed on the regulatory regime.

9.56 In its recent announcement of rating actions,[279] S&P sets out that it considers that UK water companies will operate in a "less supportive environment". It considers that the framework's supportiveness has weakened on regulatory and financial stability as well as regulatory independence and insulation. As a result it has revised its view of the preliminary regulatory advantage for water companies in England and Wales to strong/adequate from strong.

9.57 It considers that risks are more pronounced for certain companies and result in different rating outcomes, as a result of both altered business risk assessments and rating thresholds at multiple rating levels.

9.58 S&P does not publish sector wide guidance for its assessment of financial metrics. Thresholds for companies can vary as a result of different assessments of business risk based on historic and expected levels of performance, and gearing levels relative to regulatory assumptions. S&P states that it continues to use the low volatility table for Severn Trent Water and United Utilities, as these companies typically display a track record of strong operational and financial performance. It sets out that it would

[278] [OF-RR-052 [redacted]

[279] Standard and Poor's, 'U.K.Water regulatory framework support, low financial flexibility in coming regulatory period drive rating actions', February 2025

typically expect gearing levels closer to the 'notional company's expectation' from the regulator.

9.59 The credit ratings for the disputing companies are also driven by company specific issues that are outside of the price control determinations. Table 9.1 sets out S&P ratings' following the final determinations and shows the variation in rating factors across the sector.

Table 9.1 February rating updates from S&P

Company	Rating/outlook	Business risk profile	Financial risk profile	Volatility table	FFO/Debt thresholds
Affinity Water	BBB+/Negative	Excellent	Highly leveraged	Medial	8%-11%
Anglian Water	BBB/Stable	Excellent	Highly leveraged	Medial	6%-8%
Dŵr Cymru	BBB+/Negative	Excellent	Highly leveraged	Medial	8%-11%
Severn Trent Water	BBB+/Stable	Excellent	Aggressive	Low	9%-12%
South East Water	BBB-/Watch Neg	Strong	Highly leveraged	Medial	7%-9%
South Staffordshire Water	BBB+/Stable	Excellent	Aggressive	Medial	11%- 14%
Southern Water	BBB-/Watch Neg	Strong	Highly leveraged	Medial	7%-9%
SES Water	BBB/Stable	Excellent	Aggressive	Medial	9%-12%
United Utilities Water	BBB+/Stable	Excellent	Aggressive	Low	9%-12%
Yorkshire Water	BBB+/Stable	Excellent	Highly leveraged	Medial	8%-11%

Source – S&P Ratings. Issuer rating or rating for the most senior class of debt

Fitch

9.60 Fitch has set out in a number of company rating actions that it believes that the final determination "has provided a reasonable outcome for most UK water companies." Fitch set out that its recent rating actions factor in the outcome of the final determinations and companies' financial targets (where committed).[280] Fitch carried out its own assessment of ODI performance for the 2025-30 period, commenting that

[280] [OF-RR-045] Fitch Ratings, 'Fitch on UK Water, Rating approach for AMP8', March 2025, p.3

the ODIs were stretching but achievable. Whilst it set out a negative position overall for the companies that it rates, this appears to be pessimistic given its view of outperformance for Severn Trent is around half of the £300 million the company itself expects to achieve.[281] Fitch noted moderately higher business risk in AMP8, mainly driven by heightened exposure to environmental risk, increasing public scrutiny, and higher clawback risk, which is linked to the price control deliverables (PCDs) mechanism. The rating agency also noted that complex structures remain highly geared and that the generic uplift for recovery may be withdrawn if derivative liabilities are very high. It identified that further uncertainties may arise from the Cunliffe review, the most significant regulatory reform since privatisation.

9.61 Fitch set out that the sector also faces a heightened risk of fines related to operational and environmental under-performance, and a pressing need to rebuild trust with the public, government, and regulatory bodies

9.62 Fitch maintained its 'a-' rating for the regulatory environment for UK Water, setting out that comparison with several other regulatory frameworks is still strong, although noting the uncertainty around the Cunliffe review (which it says should be resolved in June). It considers there is moderate tightening of debt capacity for the average UK water company and higher business risk, leading to a 2% reduction in net debt/RCV and a 0.1% increase in cash and nominal PMICRs.

9.63 However, Fitch considers companies may have better/worse debt capacity versus the sector average due to structurally different risk profiles and has withdrawn the generic sector uplift for debt recovery where derivative liabilities are very high. The removal of the one-notch uplift has been triggered when super senior mark-to market derivatives liabilities exceed 10% of RCV, impacting Southern Water and Yorkshire Water.

Our assessment of the impacts of recent actions of the credit rating agencies for the notional financeability assessment

9.64 Credit rating agencies take account of a range of business and financial factors in making an in-the-round credit assessment. As such, it is important not to place too much weight on a single financial ratio, particularly where there is substantial headroom in other financial metrics such as gearing. We note that the CMA took this approach at PR19 where it stated:

"We consider that the overall assessment of a credit rating requires judgement about the overall quality of credit with respect to a broad range of factors that contribute to a ratings assessment. While financial ratios play an important role in the assessment of credit ratings, these are not applied mechanistically by agencies, nor in isolation

[281] Severn Trent, 'Severn Trent Capital Markets Day', March 2025

from a wide range of other relevant factors. Of the three major ratings agencies, S&P Global, Moody's and Fitch, only Moody's is explicit in applying a 40% weighting to the results of credit ratios with its methodology. We consider that caution is required in a financeability assessment to avoid placing undue emphasis on the value of a particular ratio.".[282]

9.65 Moody's had already revised its adjusted interest cover guidance ahead of our PR24 final determinations and we used the guidance figure as a reference point for our financeability assessment in the final determinations.

9.66 Fitch and S&P both now adopt more company-specific rating targets based on company performance and capital structure. For example, as shown in table 9.1, S&P applies Its low volatility table for Severn Trent Water and United Utilities, which is a measure of the predictability of cash flows. It sets out that this is based on a track record of strong operational and financial performance over AMP7, marked by an expectation that these companies will be able to deliver in line with their allowances, with gearing closer to the notional company.[283] The assessment of other companies utilises S&P's medial volatility table. Companies are allocated to the medial volatility table as a result of the relatively high level of risk in their financial structures and/or as a result of their operational performance, leading to elevated thresholds for the financial ratios assessed by S&P.

9.67 Our financeability assessment is carried out under the expectation that an efficient company can deliver its obligations and meet its performance commitments set out in our determination. It is also underpinned by an expectation that, over time, companies are able to target a capital structure that allows them to maintain a credit rating that is at least two notches above the minimum of the investment grade. On this basis, our view is that the notional company should be capable of operating under S&P's low volatility table, which, as a result can be used to support an assessment of financeability. As a result, based on table 9.1, we would consider that an FFO to net debt financial ratio in the range 9-12% would be consistent with a BBB+ credit rating for a company with a notional capital structure and that is performing in-line with our determinations.

[282] [OF-RR-013] CMA, "Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited, and Yorkshire Water Services Limited price determinations, final report", March 2021, paras 10.94-10.97. pgs 1122-1123. The CMA also noted that "Moody's decision to set Bristol's credit rating at Baa2, despite interest cover ratios weaker than this level, included a reference to the offsetting headroom against the gearing targets for the ratio as a mitigating factor to 'help to offset credit pressure of an AICR slightly below guidance'.
283 [OF-RR-016] S&P Global, "U.K. Water regulatory framework support, low financial flexibility in coming regulatory period drive rating actions", February 2025, pps. 10-11

9.68 Fitch affords more headroom guidance to companies with strong performance, and have removed the one-notch uplift for the secured capital structure for Southern Water and Yorkshire Water due to mark-to market value of derivative liabilities.

9.69 Overall, our view remains that care is needed when considering the level of financial metrics used by credit rating agencies for the purpose of a financeability assessment for the notional capital structure. By definition, the base position for the financeability assessment is that it is carried out with an underlying expectation that it is for an efficient company. A determination might not take adequate account of the customer interest if the level of financial metrics considered in the financeability assessment are underpinned by thresholds that the credit rating agencies have set for companies that are either poorly performing, or carry a weak level of financial resilience.

9.70 If a financeability constraint were to arise on the FFO to net debt financial metric, then we consider it reasonable for equity injections, or proportionate increases to the level of RCV run-off, to be proportionate responses as both can impact directly on the level of FFO to net debt. Consistent with the view we have expressed in previous price determinations and as set out in section 5 ('Choosing a point estimate' (for the allowed return on equity)), we do not consider it appropriate to adjust the allowed return in order to target specified levels of financial ratios, or to target changes in target financial metrics that have been brought about by the performance of water companies.

Stress testing our determinations

9.71 In the PR19 redeterminations, the CMA modelled the impact of a 1% RoRE penalty on the credit ratios for each company, if it were incurred by the firm in each year of the price control, as a downside scenario.[284] It set out that it considered this scenario to be a severe downside case, which was likely to overestimate potential penalties that companies underperforming against the determination may experience in each of the five years of the price control period.

9.72 The CMA also considered separately the consequences for the disputing companies of totex overspend on the modelled financial ratios. It considered that 2% of totex represented a reasonable downside sensitivity.

9.73 In our final determinations we performed headroom tests, reducing funds from operations to the point where adjusted interest cover is one, ie where a company has just sufficient free cash flows (funds from operations excluding RCV run-off) to pay its cash interest charges. We set out the results in our final determinations which showed that companies could withstand downside cost or revenue shocks equivalent

[284] [OF-RR-013] CMA, "Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited, and Yorkshire Water Services Limited price determinations, final report", March 2021, paras 10.103-10.105. p.1125

to between 10% and 28% of opex allowances, and between 15% and 20% of regulated equity.[285] This is more severe than the reasonable downside sensitivity applied by the CMA at PR19.

9.74 Taking account of our interpretation of our duties, we do not consider it is the role of the price determinations to protect companies under all scenarios. Through calibration of the incentive package including the aggregate sharing mechanism, we aim to increase the focus of company management on performance measures that matter for customers and the environment. If performance incentives are too weak, then companies may not be adequately incentivised to drive performance improvements.

9.75 Investor returns should be at risk. As such, under severe downside scenarios, we may not expect a company to exhibit financial ratios consistent with the target credit rating in the short term. Credit rating agencies typically look forward over a number of years and we would expect companies to take action to mitigate the impact on its financial position, for example through maintaining adequate liquidity resources or by reducing dividends or providing for new equity. In the recent high inflation environment, a number of companies reported financial ratios below the guidance for their credit ratings, without action from the credit rating agencies. The target credit rating should not be considered a floor for stress testing as the target credit rating, itself, provides headroom to deal with cost shocks and other stressed scenarios.

9.76 We also noted that we carry out our financeability assessment before taking account of revenue adjustments for PR19 reconciliations which totalled around £1.5 billion for the sector over 2025-30. This would provide additional headroom to the financial ratios for most companies.

[285] [OF-OA-020] Ofwat, PR24 final determinations: Aligning risk and return –appendix, December 2024, Table 9 p.72

10. Actual Financial Structures

- In setting our determinations and calibrating the overall balance of risk and return, we do so on the basis of the notional capital structure. It is important that this principle, which has underpinned all of the regulatory determinations since privatisation, is maintained. As a number of the requests put forward by the disputing companies are underpinned by their actual financing arrangements, it is important for there to be a clear understanding of our assessment of the financial resilience of each company. Therefore we comment on the financing arrangements currently in place for each of the disputing companies.
- All of the disputing companies maintain debt levels in their capital structures that exceed the notional gearing levels that have applied in all of our previous regulatory determinations. Two of the disputing companies (Southern Water and South East Water) are in the 'action required' category of the assessment carried out for our Monitoring Financial Resilience report. Northumbrian Water and Wessex Water are categorised as 'elevated concern' and while Anglian Water was categorised as 'standard' in our 2024 report, its credit rating is impacted by the level of debt in its holding company structure (the highest of any company in the sector).
- Whilst, we welcome the steps that companies have taken to simplify financial structures and in some cases to inject new equity, we assess that further equity support will be required for all of the disputing companies to meet their obligations and commitments to customers in the 2025-30 period.
- Complex capital structures and the financing arrangements put in place by the companies can be an impediment to the ability of companies to introduce new equity in to the regulated company.
- There is evidence from credit rating agencies that previous finance choices, such as excessive holding company debt and the use of derivatives to circumvent covenants, weighs on the credit ratings of some of the disputing companies and this underpins the need for some of the disputing companies to strengthen their balance sheets.
- For some of the companies this has led to credit ratings that are below the level set for the notional capital structure. Southern Water carries a credit rating that is in the sub-investment grade category, reflecting both the need for the company to manage the levels of risk within its capital structure and the need to deliver a performance turnaround.

10.1 As set out in Section 9, we assess our determinations on the basis of a notional capital structure. Our long held view is that companies are responsible for their own choices around financing and capital structures, within the framework of the price review, company licenses and company law. Customers are not able to influence the financing choices made by the company that supplies them and so companies must bear the consequences of their financing choices – noting that financing choices made by individual companies can have consequences that have effects that can prevail over price control periods.

10.2 This approach has endured through all determinations we have set since privatisation (and through the previous decisions made by the CMA and its predecessor organisations) – it incentivises companies to finance themselves efficiently. It provides companies with opportunities to outperform a determination, but it also means that companies and their investors must bear the risks and consequences of risky financing decisions, even where these endure over multiple price control periods. Efficient financing extends to company decisions on the timing and frequency of debt issuance and the tenor of debt issuance which impacts on the weighted average maturity.

10.3 As part of this approach, we expect companies to take responsibility for their own financial structures. The regulatory approach has set no requirement or expectation that companies or their investors should put highly debt financed arrangements or covenanted structures in place. Therefore, we do not consider covenants, or the definition of financial ratios that underpin these covenants to be a valid consideration for the financeability assessment of the notional structure. Where covenanted financial ratios are tight, this is for companies and their investors to manage.

10.4 The actions carried out by each of the credit rating agencies, as set out in section 8 and below, support our view that companies need to maintain headroom in their capital structures if they are to maintain long term financial resilience. Through the PR24 process we have referenced that gearing levels that exceed 70% are above the level that is consistent with water companies meeting the requirement of maintaining long-term financial resilience.

10.5 We note also, that under their actual structures and actual credit rating assessments, companies will receive revenue reconciliation adjustments for performance in the 2020-25 period. For the sector, this will provide additional revenue of £1.5 billion, giving a free cashflow benefit in the 2025-30 period.

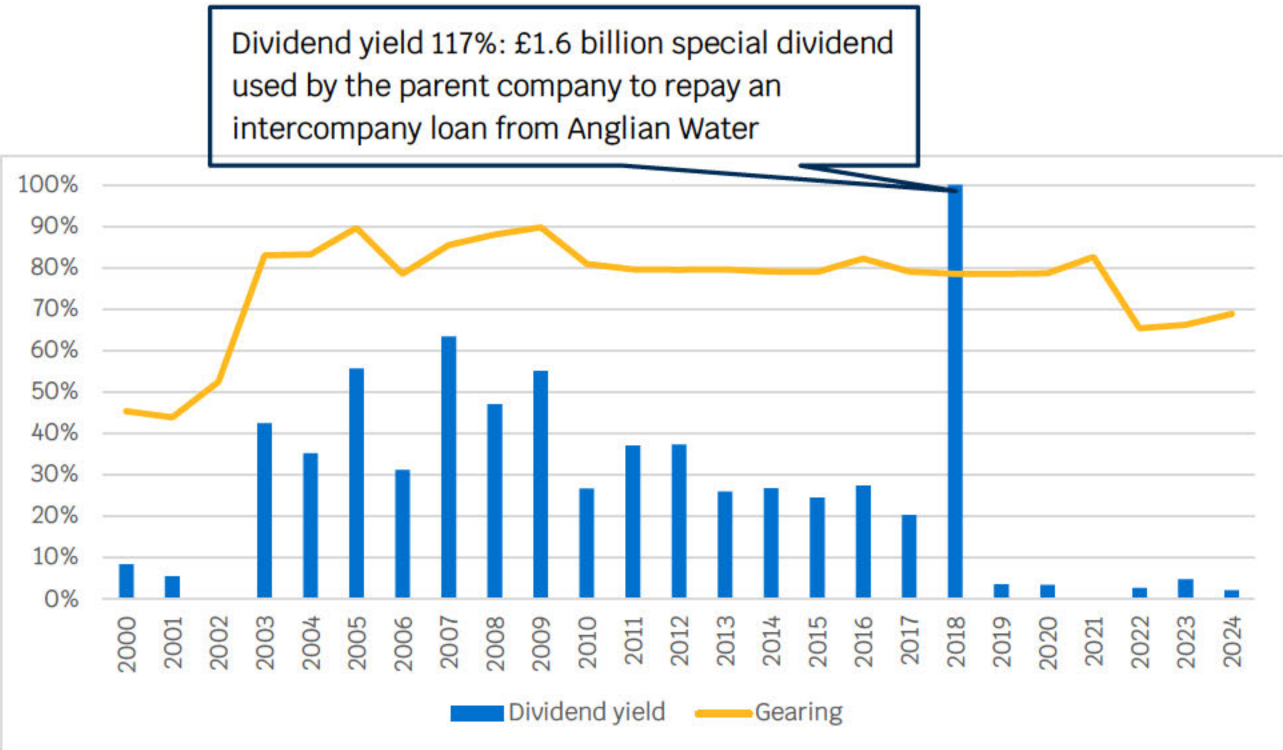
10.6 In this section, we comment on the financial structures put in place by each of the disputing companies, and the factors relevant to the actual credit ratings. In figures 10.1 and 10.2 to 10.6, we present the annual dividend yields and gearing profiles for the disputing companies.

10.7 We make reference to the financial resilience categorisation status in our Monitoring Financial Resilience report, where we categorise companies as 'Action Required', 'Elevated Concern' or 'Standard'. These categorisations determine our approach to monitoring and engagement with the companies we regulate on the matter of financial resilience.

Anglian Water

10.8 In 2002, Anglian Water carried out a financial restructuring. It introduced a whole business securitisation, that allowed it to increase its gearing levels from 52% in 2001-02 to 82% in 2002-03. The financial restructuring was accompanied by the introduction of an inter-company loan from the regulated company to a holding company. Interest paid by the holding company to the regulated company was financed by the payment of dividends by the regulated company, leading to the declaration of high levels of dividends for the period while the inter-company loan was in place as shown in figure 10.1. The inter-company loan was repaid by the group in 2018, this was funded by a one off restructuring dividend of £1.6 billion paid for by the regulated business.[286]

Figure 10.1 Anglian Water – historic dividend yield and gearing



10.9 In 2021, Anglian Water injected £1,165 million of equity into the regulated business, reducing gearing of the regulated company to below 70%. However, this was largely

[286] [OF-RR-052] Anglian Water, Annual performance report, 2018, p. 10

funded through approximately £1 billion of new debt raised in holding and intermediary holding companies. with gearing maintained at around 86% at the holding company level. Whilst the group put in place provisions to access funds on a temporary basis if needed, the prime source of funding to service this debt is expected to be dividends from the regulated company.

10.10 At 31 March 2024, debt in the holding company structure (comprising both intermediary and holding company debt) amounted to £1.8 billion, representing approximately 16% of the regulated capital value at the time, meaning group debt was around 85% of RCV. This is the highest proportion of holding company debt across the sector, as confirmed in a chart set out by Moody's in their recent credit opinion for Anglian Water, reproduced in figure 10.2. [287] As well as the need to service the interest on this debt, it may hinder the ability of the regulated company to access the new equity required to support its investment requirement. As noted below, this has impacted on the current credit ratings of the company.

[redacted]

Source: Moody's ratings

10.11 In its business plan, Anglian Water proposed £819 million of new equity over PR24 to help fund its investment programme, with an average dividend yield of 3.7% and gearing of 68.9% in 2030 at the level of the regulated company. We set out in the final determination that further investor support may be required for the company to maintain its financial resilience in 2025-30 and beyond.

10.12 Anglian Water maintains credit ratings with Moody's, S&P and Fitch. Since the final determination, the following actions have been taken on Anglian Water's credit ratings

10.13 In February 2025, **Moody's** downgraded Anglian Water to Baa1, with a negative outlook.[288] Moody's considers that holding company debt, which at March 2024, amounted to £1.7 billion, equivalent to 15-16% of Anglian Water's RCV could act as further impediment to equity support for the company. The negative outlook considers the risk that shareholder support to reduce group leverage may not happen in a timely manner.

10.14 In February 2025, **S&P** lowered Anglian Water's credit rating to BBB with a stable outlook. S&P set out that the stable outlook was based on the company's final determination outcome. S&P considered factors that may lead to a rise in ratings,

[287] [OF-RR-053] Moody's Ratings, 'Credit Opinion, Anglian Water Services Ltd., Update following downgrade to Baa1 negative', February 2025, Exhibit 1
[288] [OF-RR-054] Moody's Ratings, 'Rating Action: Moody's Ratings downgrades Anglian Water to Baa1, outlook negative', February 2025

including equity injections to show a shareholder commitment to a higher rating at the operating company.

10.15 In February 2025, **Fitch** affirmed Anglian Water's rating at A- with a stable outlook.[289] The affirmation reflected the expected gradual deleveraging of Anglian Water to 66% by the end of the 2025-30 period, sitting comfortably below Fitch Ratings 70% negative rating sensitivity. It highlights Anglian Water's forecast cash PMICRs, above its negative rating sensitivities of 1.5x.

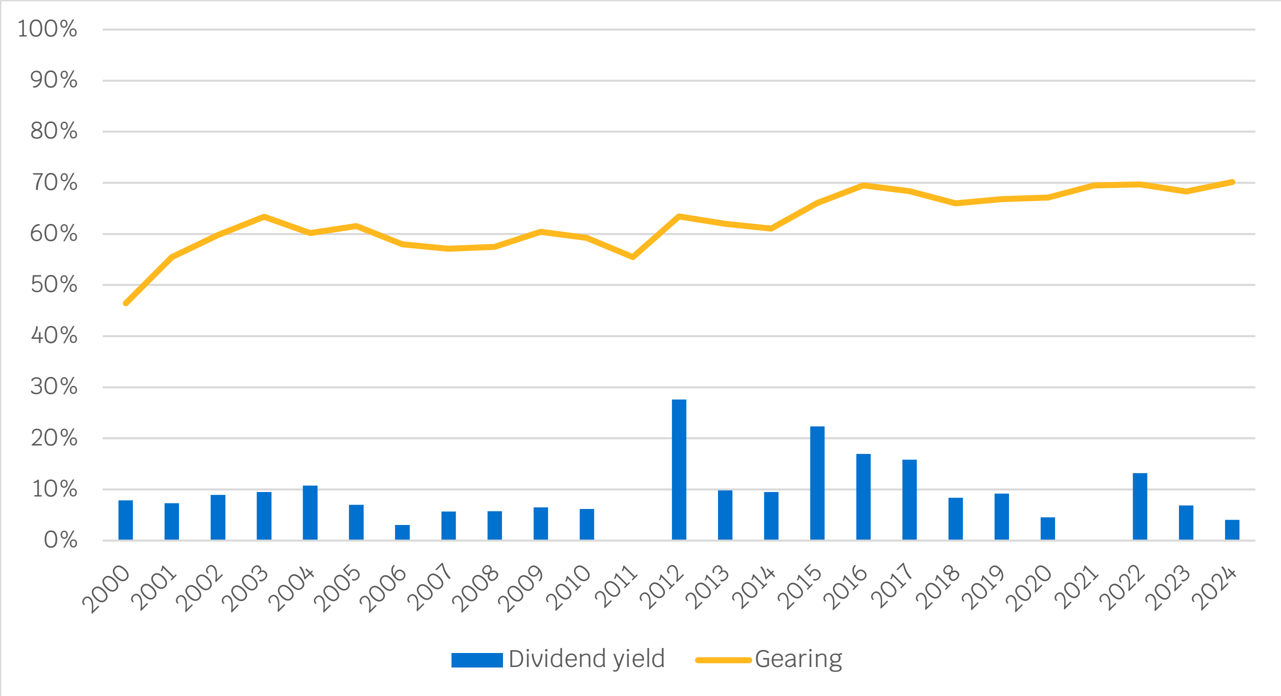
Northumbrian Water

10.16 Northumbrian Water was acquired by CKI in 2011. Since its change of ownership, Northumbrian Water has maintained a high dividend payout ratio. In total, dividends have outstripped reported company profit since 2011. In 2022, KKR acquired a 25% shareholding in the Northumbrian Water Group. It was reported at the time that the transaction value implied a premium of around 50% over regulated capital value.[290]

10.17 In addition, Northumbrian Water had an existing intercompany loan outstanding of £159 million to its parent company, Northumbrian Water Group Limited, which was settled in 2022 following the payment of a special dividend, which the company reported was from non-appointed activities.

[289] [OF-RR-034] Fitch Ratings, 'Fitch Revises Osprey Acquisition's Outlook to Negative; Affirms Anglian Debt at 'A-'', February 2025
[290] [OF-RR-104] Morning Star, 'CK Infrastructure to See Gain With Cheung Kong Group Sale of Northumbrian Water', July 22 reported a premium of around 47% to the estimated year-end regulated asset value, whilst an analyst report from HSBC Global Research referenced the premia as 50%

Figure 10.3 Northumbrian Water – historic dividend yield and gearing



10.18 Northumbrian Water's business plan stated a target credit rating of Baa2/BBB for the actual capital structure which is below the notional target set in our determination. The business plan included a proposed equity injection of £400 million, an average dividend yield of 2.1% and gearing of 73.7% in 2030. We set out in the final determinations that further investor support may be required for the company to maintain its financial resilience in 2025-30 and beyond. The company may need to reconsider its approach to maintaining financial resilience in the context of our final determination and other factors external to the decision.

10.19 Our 2024 Monitoring Financial Resilience report categorised Northumbrian Water as 'Elevated Concern', reflecting its gearing position and its PR24 business plan which was underpinned by a requirement for significant equity financing.[291] During the year Northumbrian obtained a new credit rating with Fitch, which replaced a previous S&P rating, which improved its lowest monitored rating to BBB+/Baa1 Stable at year-end (from the previous S&P credit rating of BBB). On 13 November 2024 Moody's affirmed its credit rating at Baa1 but changed the outlook to negative.[292]

[291] [OF-RR-058], Ofwat, 'Monitoring Financial Resilience Report 2023-24', November 2023, p10
[292] [OF-RR-059] Moody's ratings, 'Moody's Ratings changes outlook to negative on Northumbrian Water, affirms ratings', November 2024

10.20 Northumbrian Water maintains credit ratings with Moody's and Fitch. Since the final determination, the following actions have been taken on Northumbrian Water's credit ratings:

- In March 2025, **Moody's** published its credit opinion following its affirmation of Northumbrian Water's credit rating at Baa1 with a negative outlook.[293] [redacted]
- **Fitch** revised the outlook on Northumbrian Water's BBB+ credit rating to negative in March 2025.[294] Reflecting its expectation that without a sizeable equity injection, regulatory gearing will exceed its tightened negative rating sensitivity of 70% for Northumbrian Water Limited (NWL) and 72% for Northumbrian Water Group Limited (NWG).

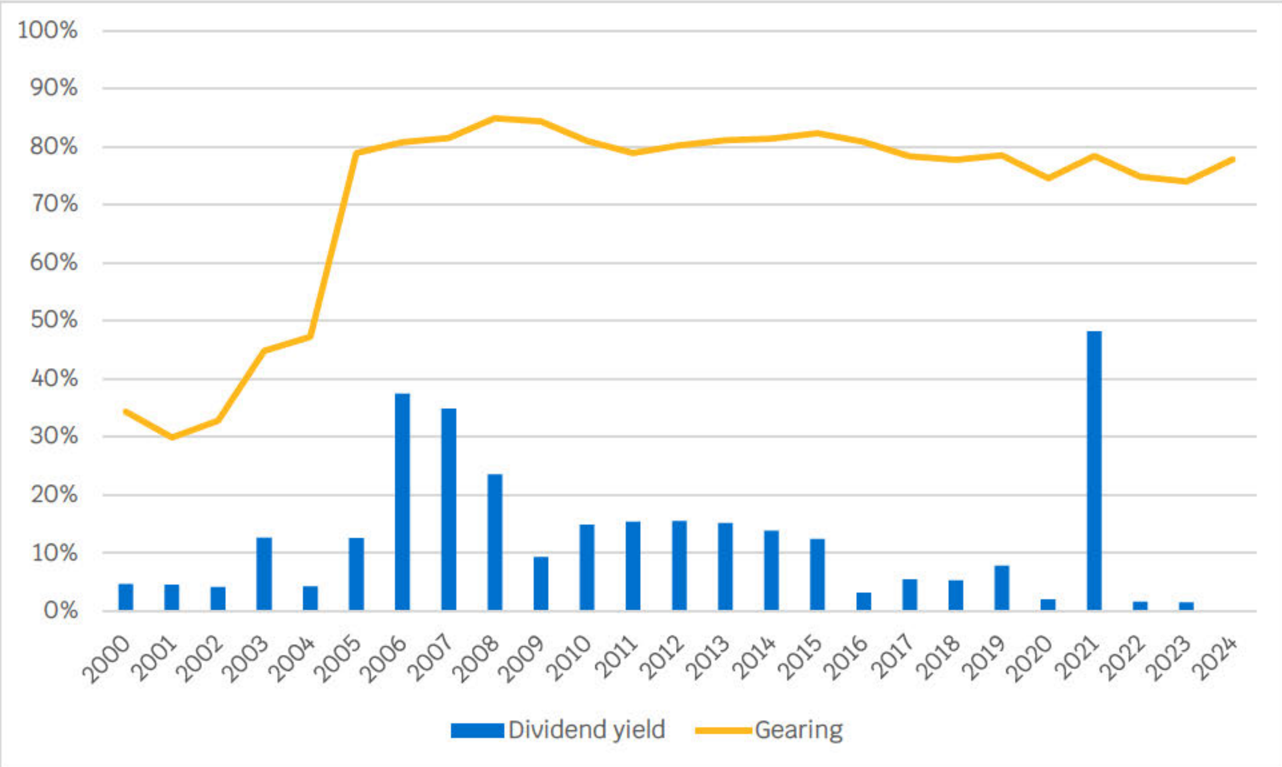
South East Water

10.21 In 2005, South East Water carried out a financial restructuring. It introduced a whole business securitisation and increased its gearing levels from 47% in 2003-04 to 79% in 2004-05.[295] The financial restructuring was accompanied by the introduction of an inter-company loan from the regulated company to a holding company. In the period following the capital restructuring, the company has held a credit rating just one notch above the minimum investment grade at Baa2 with Moody's and BBB with S&P since 2004, and targeted this rating in its business plan.[296]

10.22 Interest paid by the holding company to the regulated company was financed by the payment of dividends by the regulated company, leading to the declaration of high levels of dividends while the inter-company loan was in place, as shown in figure 10.23 The inter-company loan was repaid in 2021, funded by a one off restructuring dividend of £136 million paid for by the regulated business.[297]

[293] [OF-RR-033] Moody's Ratings, 'Northumbrian Water Ltd. Update following affirmation at Baa1 negative', March 2025
[294] [OF-RR-032] Fitch Ratings, 'Fitch Revises Northumbrian Water's Outlook to Negative, Affirms Senior Unsecured at 'BBB+'', March 2025
[295] During the year to 31 March 2007, South East Water merged with Mid Kent Water, with South East Water's licence extended to incorporate the Mid Kent operating area in December 2007.
[296] [OF-RR-060] South East Water, 'PR24 5 Year Business Plan 2025 to 2030', October 2023, Chapter 13 Financials, Part 2 – Financeability and financial resilience of our plan, p.163
[297] [OF-RR-061] South East Water, Annual performance report, 2021, p.269

Figure 10.4 South East Water – historic dividend yield and gearing



Source: South East Water report and accounts and annual performance reports. For the period up to the merger of financial reporting in 2008, we also include the results of Mid Kent Water.

10.24 South East Water's business plan stated a target credit rating of Baa2/BBB for the actual structure which was below the notional target set in our determination. The business plan included a proposed £56 million fresh equity injection, a dividend yield of 1.3% and gearing of 74.9% in 2030. [298]

10.25 In response to our draft determination, the company was required to provide additional board assurance and a financial resilience plan, with evidence of investor support to demonstrate how it will take forward its responsibility to maintain financial resilience. In the company's response to our draft decision, it proposed £75 - £125 million in fresh equity and the full restriction of dividends to keep gearing under 70% over the 2025-30 period, subject to the outcome of the final decisions.[299]

[298] [OF-RR-060], South East Water, 'PR24 5 Year Business Plan 2025 to 2030', October 2023, Chapter 13 Financials, Part 2 – Financeability and financial resilience of our plan, Table 2.4 p.163
[299] [OF-RR-062], South East Water, 'PR24 Draft determination response – Executive summary', August 2024, 3.2 Summary of component parts of our draft determination response, Financial resilience, pps. 27-28

10.26 In its 2023-24 annual report, the company's auditors raised a similar concern, raising a material uncertainty relating to going concern due to necessary financing not being committed at the date the financial statements were approved.[300]

10.27 In November 2024, Moody's downgraded South East Water to the lowest category in the investment grade, placing it on a credit rating of Baa3 and on review for possible further downgrade. [redacted]

10.28 Also in November 2024, S&P placed the company's BBB rating on CreditWatch with negative implications.

10.29 Following the actions of the credit rating agencies, investors injected £75 million of equity into the company in December 2024 (an equity injection that was confirmed to be over and above the level proposed in its draft determination representation) and the company extended the maturity date of a £120 million loan to June 2026,[302] with the result that Moody's revised its credit rating assessment to Baa3, with negative designation.[303]

10.30 Consequently, the company is now in cash lock-up under its licence and unable to pay a dividend or other distribution without our approval.

10.31 Overall, we continue to have concerns with South East Water's financial resilience. We categorised the company as 'Action Required' in our 2024 Monitoring Financial Resilience Report,[304] and we set out in the final determination that the company may need to reconsider its approach to maintaining financial resilience in the context of the final decision and other factors external to the decision.

[300] [OF-RR-063] South East Water, '2023/24 Group annual report and financial statements', July 2024, Independent auditors report to the members of South East Water Limited, Material uncertainty related to going concern, pps. 180-181

[301] [OF-RR-064], Moody's Ratings, 'Rating Symbols and Definitions', 24 March 2025, p.36.

[302] [OF-RR-065] South East Water, 'Interim Financial Report - Condensed group financial statements for the six months ended 30 September 2024', December 2024, Chair and CEO joint report, financing, p.6

[303] [OF-RR-066] Moody's Ratings, 'Rating Action: Moody's Ratings confirms South East Water's Baa3 ratings, negative outlook', December 2024 [redacted]

[304] [OF-RR-058], Ofwat, 'Monitoring Financial Resilience Report 2023-24', November 2023, p9

10.31 South East Water maintains credit ratings with Moody's and S&P. Since the final determination, the following actions have been taken on South East Water's credit ratings:

10.32 In March 2025, **Moody's Ratings** maintained South East Water's Baa3 rating, with a 'negative outlook'. [redacted]

10.33 In February 2025, **S&P** set out that the credit watch negative placement (on the BBB credit rating) reflected its view that the company faces persistent financing needs that will continue to create liquidity challenges. Whilst S&P sets out that a loan extension until June 2026, and a £75 million equity injection in December 2024 eased liquidity pressures., it could lower the rating on the debt issued by South East Water Ltd. by one notch if there is no shareholder support by end of May 2025 that would allow the group to maintain adequate liquidity for the 12 months prior to the loan's maturity and to finance its capital programme for the rest of AMP8.

10.34 S&P also stated that it believed that recent liquidity pressures significantly increased the risk profile of South East Water compared to most of its peers in the water sector, considering the large increase in capex the group will have to execute over AMP8.

Southern Water

10.35 In 2002, Southern Water carried out a financial restructuring. It introduced a whole business securitisation and increased its gearing levels from 58% in 2002-03 to 85% in 2003-04. The financial restructuring was accompanied by the introduction of an inter-company loan from the regulated company to a holding company. Interest paid by the holding company to the regulated company was financed by the payment of dividends by the regulated company.

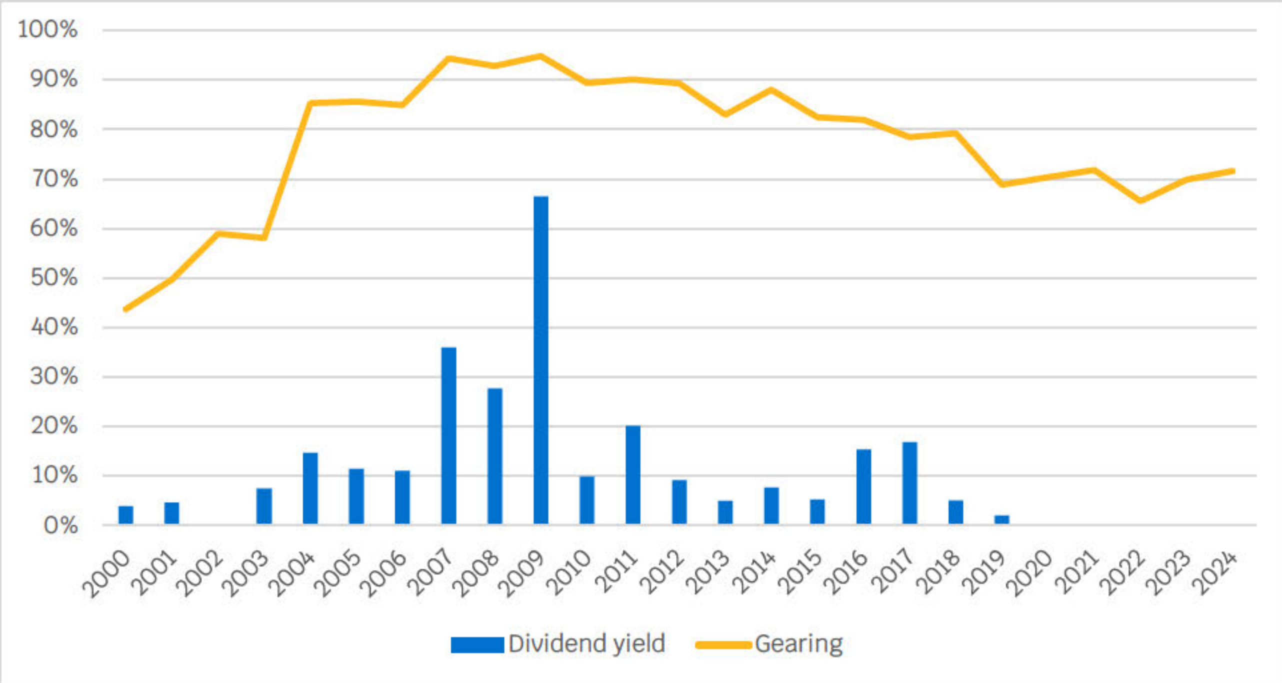
10.36 Part of the intercompany loan was repaid in the year to 31 March 2019, when additional holding companies were added to the structure, introducing debt into the corporate structure above the regulated company. The stated objective of the introduction of the debt above the regulated company was to improve the financial resilience of Southern Water, by reducing the total leverage of the Southern Water Financing Group and reducing interest payments at Southern Water to help manage financial covenants.[305] As at 31 March 2024, external debt in the Midco and Holdco group of companies was around £0.8 billion, representing approximately 11.6% of RCV.

10.37 Also around this time, the company undertook significant swap restructuring exercises in 2018 and 2020, which company management chose to pursue to allow the company to meet the financial ratios set out in its covenants. These arrangements had the effect of improving short term cash flows, but resulted in increased future liabilities. These derivative arrangements remain in place today and are material to the credit rating assessment of each of the credit rating agencies as set out below. We discussed the Southern Water financial resilience case study and the challenges associated with these derivative arrangements in our Financial Resilience discussion paper.[306]

10.38 Southern Water underwent a significant restructuring and recapitalisation in 2021. A fund managed by Macquarie Asset Management acquired a majority stake in Southern Water's parent company, and invested over £500 million into the company as new equity and repayment of the outstanding intercompany loan, along with further funds to manage the debt above the regulated company. Further £375 million equity was injected into Southern Water by the new investor in 2023, including additional funds to service debt above the regulated company, and the company has announced plans for a further £900 million equity raise early in the new price control period. [307] We welcome the additional equity that has been announced to be raised, which is necessary to support the company's investment programme, to support its long term financial resilience and to support the company to deliver its performance turnaround.

[305] [OF-RR-067] Southern Water Services Limited, 'Annual Report and Financial Statements 2018-19', 2019, Group Structure, pps. 96-100
[306] [OF-RR-023] Ofwat, 'Financial resilience in the water sector: a discussion paper' December 2021, pp. 12-14 and 15-17.
[307][OF-RR-002], Southern Water "£900 million equity raise, request for referral of final determination, liquidity and credit ratings update", February 2025, RNS

Figure 10.5 Southern Water – historic dividend yield and gearing



10.39 Southern Water's business plan stated a target credit rating of Baa1/BBB+ for the actual capital structure which was in line with the notional target set in our decision. The business plan proposed no new equity, a dividend yield of 2% and gearing of 71.9% in 2030.

10.40 We required the company provide a financial resilience plan in response to our draft determination. The company's representation provided evidence of investor support to inject £650 million of fresh equity into the business in 2027, subject to the outcome of the final determination.[308] Reflecting the scale of the investment programme and the need for a performance turnaround, we set out in the final determination that we considered a greater level of equity support would need to be provided, and sooner than proposed in the company's representation to our draft determination. The company remains a priority for our ongoing monitoring and engagement on its financial resilience.

[308] [OF-RR-057] Southern Water, 'Our response to Ofwat's draft determination on our business plan for 2025-30', August 2024, 7.5 Financial Resilience action plan and dividend policy, p.203

10.41 In our 2024 Monitoring Financial Resilience report, we assessed Southern Water as 'Action Required'.[309] Southern Water remains in a trigger event under its financing documents. Following Moody's decision in August 2024 to place the company's Baa3 credit rating on review for downgrade, the company is also in cash lock-up under its licence and would be unable to pay a dividend or other distribution without our approval.[310]

10.42 On 13 November 2024 Moody's downgraded the company's rating to Ba1 (below investment grade) and placed the credit rating 'on review for downgrade'.[311]

10.43 On 31 October 2024, S&P downgraded its credit rating from BBB to BBB- and retained its outlook of 'CreditWatch with negative implications'. However, the company does continue to hold two investment grade ratings (with S&P and Fitch) in line with its licence conditions.

10.44 Southern Water maintains credit ratings with Moody's, S&P and Fitch. Since the final determination, the following actions have been taken on Southern Water's credit ratings:

10.45 In March 2025, **Moody's** extended the review for a further downgrade on ratings of Southern Water, having downgraded Southern Water to Ba1 in November 2024.[312] [redacted]

10.46 In February 2024, **S&P** set out that the extension of its 'CreditWatch with negative implications' indicated that it would lower the rating on the debt issued by Southern Water, possibly by multiple notches, if it were to consider that the group's liquidity

309 [OF-RR-058], Ofwat, 'Monitoring Financial Resilience Report 2023-24', November 2023, p9
310 [OR-RR-068], Moody's Ratings, 'Credit Opinion, SW (Finance) 1 PLC, Update following rating review', August 2024
311 [OF-RR-069], Moody's Ratings, 'Rating Action: Moody's Ratings downgrades Southern Water to Ba1, on review for further downgrade', November 2024
312 [OF-RR-070], Moody's Ratings, 'Announcement: Moody's Ratings extends the review for downgrade on ratings of Southern Water', March 2025

position would no longer remain adequate by the end of March 2025. S&P states that means that ahead of about £810 million debt maturing in the year to March 2026, the company would need to draw a significant portion of the £900 million equity committed by its majority shareholder, secure additional funding sources to refinance its £350 million bond maturing in March 2026, and extend, or find funding for, the £455 million accretion paydown on inflation-linked swaps, and £175 million (notional value) of mandatory breaks due in the financial year to March 2026.

10.47 S&P also sets out that if its credit rating fell below BBB-, it would likely remove the one-notch uplift resulting from its structural enhancements because of the company's large swap portfolio, with a negative mark to market position of about £1.5 billion.

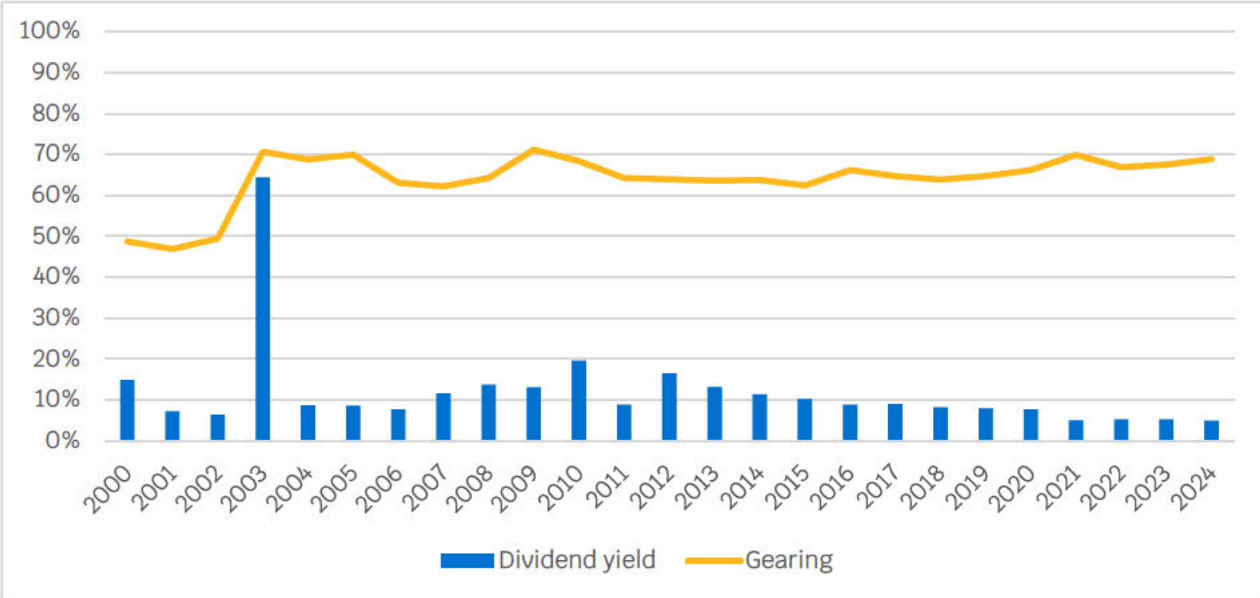
10.48 In March 2025, **Fitch** removed its Rating Watch Negative for Southern Water, following Southern Water Service Limited (SWS) announcing plans to raise £900m of committed equity, not conditional on the outcome of the CMA's redetermination. Its stable outlook reflects Southern Water will comply with Fitch's 77% gearing sensitivity with this shareholder support. Fitch highlights Southern Water's significant swap portfolio, particularly the increasing risk from its super senior swaps, valued at 23% of its RCV, is significantly above Fitch's revised guidance on liabilities from super senior derivatives at 10% of RCV. This means that Southern no longer benefits from an uplift from having above average sector recovery. It also highlights that its measure of regulatory gearing is 3% higher than Southern Water's unadjusted regulatory gearing it uses for its covenants, stating that this is due to Southern Water borrowing through swaps by re-couponing

Wessex Water

10.49 Wessex Water was acquired by YTL Power International in May 2002, and has been owned by the same investor since then. The company choose to increase gearing to around 70% in 2003 through the payment of a special dividend of £210 million and gearing has remained in the range of 60-70% since then. At that point the dividend policy was changed to pay out all of the current cost profit available to shareholders, from the previous policy to pay out two thirds of the historic profit attributable to shareholders.[313]093

[313] [OR-RR-071], Wessex Water Services Limited, 'Accounts for the year to 30 June 2003', 2003, Note 7 p.10 – "Since 1 April 2002 the dividend policy was changed to declare as an ordinary dividend all of the current cost profit available to shareholders after current year corporation tax but before prior year corporation tax, deferred tax and the current cost financing adjustment."

Figure 10.6 Wessex Water – historic dividend yield and gearing



10. 50 Wessex Water's business plan stated a target credit rating of Baa1/BBB+ for the actual capital structure, which was in line with the notional target set in our final decision. The business plan proposed no new equity and no payment of dividends over 2025 to 2030, with gearing of 71.6% by 2030.

10.51 Reflecting the outcome of the PR24 quality and ambition assessment, we required the company to provide additional Board assurance and a financial resilience plan, with evidence of investor support. The company's response reconfirmed its proposal for a full restriction of dividends in the 2025-30 period. However, taking account of the scale of the investment programme, we were unconvinced that it would be able to maintain sufficient headroom in the event of downside risks and achieve its target credit rating. We assessed Wessex Water as 'Elevated Concern' in our 2024 Monitoring Financial Resilience report and the company remains subject to targeted ongoing monitoring and engagement on its financial resilience.[314]

10.52 Wessex Water maintains credit ratings with Moody's and Fitch. Since the final determination, the following actions have been taken on Wessex Water's credit ratings:

[314] [OF-OA-066] Ofwat, 'Monitoring Financial Resilience Report 2023-24', November 2023, p11

10.53 In March 2025, **Moody's** affirmed Wessex Water's credit rating as Baa1 with a negative outlook.[315] [redacted]

10.54 In March 2025, **Fitch** affirmed Wessex Water's debt rating at BBB+ and revised its outlook to negative. Fitch set out that subject to the outcome of the company's the appeal to the CMA, the rating trajectory will mainly depend on shareholder support to strengthen the company's capital structure.

[315] [OF-RR-072], Moody's Ratings, 'Credit Opinion, Wessex Wayer Services Finance Plc, Update following affirmation at Baa1 negative', 5 March 2025

Ofwat (The Water Services Regulation Authority) is a non-ministerial government department. We regulate the water sector in England and Wales.

Ofwat
Centre City Tower
7 Hill Street
Birmingham B5 4UA
Phone: 0121 644 7500

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Any enquiries regarding this publication should be sent to mailbox@ofwat.gov.uk.

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