

December 2021

PR24 and beyond: Discussion paper on risk and return

About this document

This discussion paper provides **emerging thinking on our approach to risk and return for the next price review** of water companies in England and Wales. We build on some of the key issues raised in our May consultation and reflect on the responses to it. This discussion paper is a further step in the development of our methodology for the full price review on which we will consult in summer 2022.

Executive Summary

PR24 has to deliver for customers, communities and the environment in the face of considerable and urgent challenges. While we recognise that some challenges can be addressed outside the price review process, our May consultation '[PR24 and beyond: Creating tomorrow, together](#)' set out the key themes that we suggest PR24 will need to address. We have received many responses to that consultation and we reflect on those that relate to risk and return in this discussion document.

Our ambition for PR24 remains to align the interests of water companies and investors with those of customers, so that the sector is attractive to investors, but companies can only earn high returns from great performance. The return on capital makes up an important part of allowed revenues and hence customer bills.¹ We therefore want to secure an approach which ensures that capital is appropriately remunerated but which will not leave customers bearing unnecessarily high bills in PR24 and beyond.

Since our PR19 final determinations in December 2019, there have been a number of regulatory and economic developments. First, we have seen the conclusion of two price control appeals to the CMA (namely, the [final determination of our PR19 price controls](#) and the [final determination of Ofgem's RIIO-2 price controls](#)) in which the CMA assessed considerable amounts of evidence and arguments, particularly on cost of capital estimation. Second, as the economy emerges from the pandemic, the macroeconomic environment remains uncertain, although the continuing high premium over RCV from recent equity transactions and for listed water companies demonstrates a market expectation that returns above the cost of capital look set to continue for a number of companies.² Against this background, we now need to develop

¹ The allowed return comprises approximately one-fifth of customer bills in PR19.

² Pennon's proposed acquisition of Bristol Water represents a premium of 44% to RCV ([see: Investegate](#)), above the approximately 10-30% range characterising recent transactions (source: PWC, '[Review of the relationship between financing allowances and water company performance](#)' October 2020, Figure 4.11 and 4.12)

our methodology on how we set allowed returns and the overall balance of risk and return for PR24

For all these reasons, we want to engage early with stakeholders on selected areas of risk and return. This document builds on the feedback received following our May consultation and outlines our emerging thinking on selected issues. Our intention is not to cover every issue relevant to risk and return and we do not give a view on the level of expected returns at this stage.

By way of summary, we anticipate retaining our approach in which returns are determined by an allowed base return on capital and a framework of incentive and risk allocation mechanisms. We propose to estimate the base return on equity with most weight placed on the capital asset pricing model (CAPM). Since this is likely to produce a range of potential values, we see merit in using appropriate cross-checks. For example, we propose to look at evidence from market-to-asset ratios while recognising that, for any cross-check, a degree of judgement will be required.

In terms of the base return on capital, we envisage retaining a fixed allowance for the cost of equity and an allowed cost of debt that has a fixed component for embedded debt and an indexed component for new debt. We are minded to set an allowed return for embedded debt mainly on the basis of sector-wide balance sheet debt (cross-checked using a benchmark market index), and for new debt on the basis of a benchmark index.

We propose a framework for considering notional gearing. We consider that there may be benefits to adopting a lower notional gearing level at PR24 and we are exploring this further. The combined effects of a more uncertain future (for example, driven by less predictable weather and the effects of climate change) and revenue at risk from service performance (including reviewing whether the PR19 gearing reduction was sufficient for this) may indicate a greater role for equity in order to provide a buffer against supply-side or demand-side shocks.

From the base return, we anticipate presenting the plausible range of upside and downside returns which efficient companies may earn through performance in outcomes, costs and financing. This will help focus management attention on the key risks and provide a clearer indication of the risks and returns investors can expect. We continue to envision a role for reconciliation mechanisms in limiting and reassigning risk, although we are minded to simplify and reduce them wherever practicable.

We are minded to transition to full CPIH inflation indexation of the Regulatory Capital Value (RCV) at the start of PR24. This would allow us to discontinue use of the discredited RPI measure of inflation and would reduce complexity in our price review models. Our decision reflects the intention by the UK Statistics Authority (UKSA) to

effectively convert RPI into an equivalent of the CPIH measure in 2030, limiting the need for a more cautious approach to the transition.

As at previous price controls, we envision continuing to protect customers by assessing financeability for the notional company before performance rewards or penalties are applied. Whilst we cannot predict the level of the allowed return at this stage, we note that likely falls in the cost of embedded debt and our proposed move to full CPIH indexation of the RCV may mean more headroom in financial ratios at PR24. For any financeability constraints which do arise, we propose to consider the underlying cause of the constraint in determining the most appropriate solution. Our preferred approach is to consider equity solutions, particularly if notional gearing strays significantly from the opening level because of significant real RCV growth. Where companies, or ourselves, identify a financeability constraint that is due to a shortfall in cash flows for other reasons, we may consider the use of revenue advancement, but we would expect to see clear reasoning for doing so, with compelling evidence that it would be in the best interests of current and future customers.

To reduce risks to customers, we continue to attach significant importance to companies' financial resilience. Our emerging thinking on financial resilience is covered in [Financial resilience in the water sector: a discussion paper](#). We see our approach at PR24 as complementary to the aims set out in that discussion paper. We propose to retain the requirement for companies' Boards to provide assurance that business plans contain reasonable measures to maintain continued financial resilience. In the financial resilience discussion paper we also note that the Gearing Outperformance Sharing Mechanism (GOSM) designed in PR19 was not applied by the CMA for the companies which appealed their PR19 determinations. However, it does apply to the 13 companies that did not appeal. We continue to consider how best to address the concerns which the GOSM was designed to mitigate. Our discussion paper on financial resilience invites views on that issue.³

³ The closing date for responses to that consultation is 31 January 2022.

Responding to this discussion paper

We welcome views on the emerging thinking in this discussion paper on risk and return for PR24 by 2 February 2022. Please email them to PR24@ofwat.gov.uk. In our draft methodology in summer 2022, we propose to outline more comprehensively our overall approach for setting allowed returns and evaluating the balance of risk and return. Ahead of that, we will build on the further work signalled in this discussion document and carefully consider feedback and responses.

We will publish responses to this document on our website at www.ofwat.gov.uk. Subject to the following, by providing a response to this discussion paper you are deemed to consent to its publication.

Information provided in response to this document, including personal information, may be published or disclosed in accordance with access to information legislation – primarily the Freedom of Information Act 2000 (FoIA), the General Data Protection Regulation 2016, the Data Protection Act 2018, and the Environmental Information Regulations 2004. For further information on how we process personal data please see our [Privacy Policy](#).

If you would like the information that you provide to be treated as confidential, please be aware that under the FoIA there is a statutory [Code of practice](#) which deals, among other things, with obligations of confidence.

If you think that any of the information in your response should not be disclosed (for example, because you consider it to be commercially sensitive), an automatic or generalised confidentiality disclaimer will not, of itself, be regarded as sufficient. You should identify specific information and explain in each case why it should not be disclosed and provide a redacted version of your response, which we will consider when deciding what information to publish. At a minimum, we would expect to publish the name of all organisations that provide a written response, even where there are legitimate reasons why the contents of those written responses remain confidential.

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1. Introduction

1.1 Aims of this discussion paper

This discussion paper provides emerging thinking on our approach to risk and return for the next review period. We build on some of the key issues discussed in our [May consultation](#) and reflect on the responses to it. This discussion paper is a further step in the development of our methodology for PR24 and beyond on which we will consult in summer 2022.

1.2 The context of our work within PR24 and beyond

PR24 has to deliver for customers, communities and the environment in the face of considerable and urgent challenges. Our water sector needs to tackle demands from climate change, customers' increasing expectations for service and the treatment of the environment, and the pressures on people's ability to pay.

While we recognise that some challenges can be addressed outside the price review process, our May consultation set out the key themes that we suggest PR24 will need to address. We said that a successful PR24 will:

- increase **focus on the long-term**;
- deliver **greater environmental and social value**;
- reflect a **clearer understanding of customers and communities**; and
- drive improvements through **efficiency and innovation**.

We must set price controls in the manner which we consider is best calculated to satisfy our statutory duties. In summary, our relevant principal duties are to protect the interests of consumers, secure that water company functions are properly carried out, secure that companies are able to finance the proper carrying out of those functions, and further the resilience objective.

We interpret our financing duty as a duty to secure that an efficient company with the notional capital structure can finance its functions, in particular by securing reasonable returns on its capital. In doing so, it will be able to raise finance on reasonable terms while protecting the interests of current and future customers.

We want to align the interests of companies and investors with those of customers, so that the sector is attractive to investors, but companies can only earn high returns from great performance. In line with our increased **focus on the long-term**, we want investments in what is typically long-lived infrastructure to be made in the context of a

transparent and evidence-led regulatory framework. In order to facilitate this, and in recognition of the fact that companies will be developing business plans now which should be considering the long-term (i.e. decades hence, not just the next five years), we propose to give an early view on the allowed return on capital for the period 2025-2030 next year.⁴

Our regulatory approach aims to allocate risk to those best able to manage and control it. The approach to price determinations remunerates investors for that risk, but companies maintain significant discretion over their own financing and capital structure arrangements and so companies must bear the risks of their financing decisions within the context of the price control, company licences and company law. Financial resilience (along with corporate and operational resilience) is also vital if the sector is to deliver in the interests of customers both today as well as into the future. In PR19, we increased our focus on financial resilience and we recently published a discussion paper on further measures we propose to take in relation to financial resilience.⁵

A **clearer understanding of customers and communities** includes companies having due regard to their track record on service delivery and environmental performance, as well as customer perceptions of shareholder and management remuneration. PR19 set out clear expectations of companies, their Boards and investors on policies such as dividends, executive pay, and the sharing of benefits with customers. We continue to maintain high expectations of companies on all these areas, as explained in our financial resilience discussion paper. For PR24, our expectation is that dividend policies set out in company business plans are aligned with strong performance for customers and the environment and a company which is operationally and financially resilient.

1.3 Our May consultation

In the May consultation, we suggested that for PR24 we would:

- **seek to optimise our risk framework**, reducing complexity where appropriate. We will also look at whether we can improve our understanding of risk;
- **consider updating our approach to estimating the allowed return on capital**, including whether to index the allowed return on equity, as well as

⁴ We signalled our intention to do this in our May consultation (p.34 of '[PR24 and beyond: Creating tomorrow together](#)').

⁵Ofwat, '[Financial resilience in the water sector: a discussion paper](#)', December 2021

reviewing the role of balance sheet and benchmark index data in setting the allowed return on debt;

- **explore our approach to financeability**
- **consider ways of incentivising financial resilience**, to protect customers from the adverse outcomes of risky financial structures; and
- **consider a further transition towards full CPIH indexation**, to reduce reliance on the discredited RPI measure.

In response to the May consultation, we received helpful feedback from stakeholders and have progressed our thinking on many of the issues above. The feedback we received in relation to incentivising financial resilience has been taken into account in our recent publication, ['Financial resilience in the water sector: a discussion paper'](#)

We have also taken into account submissions to the PR24 Future Ideas Lab. We will reflect on feedback to this discussion document and progress our analysis further ahead the draft methodology in summer 2022.

2. Balance of risk and return

2.1 Introduction and summary

In setting a balanced incentive package, we are seeking to align the interests of companies and their investors with those of customers, now, and in the long term. To achieve this, our regulatory framework contains the following tools:

- **Risk allocation mechanisms:** This includes true-ups and the suite of reconciliations (for instance totex cost-sharing). These mechanisms incentivise companies and assign risks between customers, management and shareholders; primarily on the basis of which party is best placed to manage them.
- **Scenario analysis using Return on Regulatory Equity (RoRE) risk ranges:** Producing different forecast risk ranges for reasonable 'business-as-usual' risks allows companies and the regulator to gain insight into which risks are most significant under a given incentive framework.
- **Other uncertainty mechanisms:** This includes IDoKs and Substantial Effects determinations. These mechanisms limit the revenue risk which companies are exposed to, if the conditions informing final determinations change materially.

This section sets out our anticipated direction of travel on PR24 risk allocation mechanisms and how we propose to assess the balance of risk and return at PR24. We are minded to:

- **Review the number and complexity of reconciliations,** with a view to simplifying and removing reconciliations where this is likely to be beneficial and supports good incentives and our policy goals.
- **Evolve our approach to RoRE risk ranges.** We envision that we would lead on producing notional risk ranges, informed by historical data and company information. Companies would be able to provide feedback and produce company-specific risk ranges. We would adapt our PR19 approach to ensure that risk ranges focus on in-period risk, not performance against benchmarks.

2.2 Consultation responses

Question 11.1 of our May consultation document asked: "**Are there areas of our risk allocation framework where mechanisms could be added, simplified or removed in a way which would benefit customers?**" Respondents raised the following issues:

- **Number of reconciliations:** Several companies argued that there were too many mechanisms and proposed criteria to reduce their number.⁶ The Developer Services Reconciliation Adjustment (DSRA) and RPI-CPIH wedge reconciliation were two which respondents suggested for removal. Certain companies also proposed additional pass-through for business rates, and Covid-19 costs.⁷
- **Unclear role for interim determinations:** Several respondents noted that interim determinations had not been made for some time and that this suggested the criteria were too restrictive, and that updated guidance was needed.⁸

Question 11.2 of our May consultation document asked: **"How should we improve our use of RoRE risk ranges to provide insights into the balance of risk and reward, and improve comparability across companies?"** Respondents raised the following issues:

- **The purpose of risk ranges:** Thames Water expressed a desire for further guidance on the purpose of RoRE risk ranges; specifically on whether we intended them to be used to calibrate the allowed return on equity or to help the sector manage risk and signal priorities. Northumbrian Water argued risk ranges could be used to assess whether the regulatory settlement was a 'fair bet', and to understand its financeability.
- **Lack of comparability:** Several responses cited the subjectivity of risk measurement and different approaches taken to constructing risk ranges.⁹ Responses variously suggested that there was potentially a role for more guidance, prescribed common approaches to risk measurement and risk range composition, and common scenarios to promote greater comparability.
- **Difficulties measuring risk:** Certain responses argued that the approach taken by most companies to calculating risk ranges at PR19 was flawed as it failed in most cases to adequately capture cross-linkages between risks, step changes in risk or very rare events.¹⁰
- **Comprehensiveness of risk analysis:** Certain responses suggested that additional sources of risk, for example pension deficits and the revenue forecasting incentive, could usefully be added to the analysis of risk.¹¹
- **Greater focus on company circumstances:** Several responses advocated more of a role for company-specific risks in calibrating the risk-reward balance. Some water-only company (WoC) responses argued that risks to such companies should be considered separately to water and sewerage companies (WaSCs), arguing there

⁶ Affinity Water, Anglian Water, Hafren Dyfrdwy, Southern Water, South West Water, Thames Water, Wessex Water.

⁷ Affinity Water, Hafren Dyfrdwy, Severn Trent.

⁸ Southern Water, Wessex Water.

⁹ Anglian Water, Bristol Water, Southern Water, Dŵr Cymru Cyfyngedig, Wessex Water.

¹⁰ Anglian Water, Dŵr Cymru Cyfyngedig.

¹¹ Thames Water, United Utilities Water.

was a tendency towards Outcome Delivery Incentive (ODI) underperformance for WoCs in the PR14 (2015-20) data.¹²

2.3 Emerging thinking

Number of reconciliations

The 20 reconciliations to be run during the PR19 (2020-25) period represent a sizeable increase from the eight PR14 (2015-20) reconciliations run during PR19. We are reviewing the existing suite of PR19 reconciliations as part of preparation for PR24 and propose to set a high bar for any new reconciliations. Having considered responses to our May consultation, we propose that we would apply the following criteria to assessing the continuing need for PR19 reconciliations and for new PR24 reconciliations:

- **Materiality:** Persistently small reconciliations or those whose net impact is broadly neutral across control periods may indicate that the reconciliation is unimportant and that its complexity outweighs its benefit.
- **Efficiency of risk allocation:** We intend to place significant weight on the principle that risk should be held by the party best placed to manage it.
- **Cost-benefit:** Reconciliations tend to improve precision in allowance-setting and can achieve policy objectives. Against these benefits should be weighed costs – for instance through increased complexity.

Our proposal in this document to index the RCV to CPIH from the start of the control period (See Section 6) would make having an RPI-CPIH wedge reconciliation unnecessary. As one of the more complex reconciliation mechanisms, we consider this to be one of the implementation advantages of a switch to full CPIH indexation from 2025.

Some responses argued that we could remove contestable developer services from the network plus price control and instead rely on competition and our charging rules to achieve customers' interests. This may allow the removal of the Developer Services Reconciliation Adjustment (DSRA). We will provide further details on our policy concerning developer services as part of our PR24 methodology publication.

The overall impact of Covid-19 on the water sector is still evolving. The net impact at a sector and company level may not, over time, be of high materiality, especially in light

¹² South West Water, South Staffordshire Water.

of the reconciliation mechanisms in place to deal with variation in costs and revenues. We have previously set out the process companies should follow if they consider that an intervention to address the impacts of Covid-19 is appropriate.¹³

Interim determinations

We consider that the expanded number of uncertainty mechanisms and reconciliations over time has played a part in the reduced role for interim determinations. For instance, PR19 featured uncertainty mechanisms for abstraction charges, business rates and an ex-post true-up for labour costs, companies receive significant protection from general inflation, and bear only a fraction of totex cost overruns. These mechanisms reduce the risk of under-recovery of revenues because of unexpected developments, and so can be expected to reduce the scope for interim determinations following downside risk events.

We nonetheless intend to retain a role for interim determinations as part of PR24. This part of our framework is important to protect investors against unexpected and material risks which are not dealt with by our incentives or suite of reconciliation models.

Our regulatory approach has evolved since the last interim determination request in 2013, and we will consider as part of the PR24 process whether we need to issue guidance about how interim determinations would work.

The purpose of risk ranges

The purpose of RoRE risk ranges is to set an indicative range for the impact of reasonable upside and downside variation (from the base forecast) in the different building blocks of the price control (for instance ODIs, financing, etc); and to allow in-period monitoring of company performance against the final determination. Following our policy of putting more revenue at risk in areas of importance to customers in PR14 and further still in PR19, the development of RoRE risk ranges also facilitates greater alignment of company and customer priorities.

Consistent with our policy of setting allowed returns for the notional company, our focus when determining risk ranges is the risk exposure applying to the notional company. Well-evidenced risk ranges for the notionally efficient company can give some insight into its business-as-usual risk exposure, and whether the balance of risk and return is struck appropriately. Given that they are forecasts made in the context of

¹³ Ofwat, '[IN 21/01 Expectations for monopoly company annual performance reporting 2020-21](#)', April 2021.

uncertainty and carry limited information on the distribution of returns, we envision that the usefulness of risk ranges is likely to lie in a sense check for the incentive package as a whole, rather than as a tool to fine-tune the level of the allowed return. In particular, we consider that the expected RoRE outcome for a given item cannot necessarily be assumed to be the simple average of the P10 and P90 forecast outcomes, meaning that upwardly or downwardly skewed RoRE risk ranges cannot necessarily be interpreted as leading to an expectation of RoRE reward or penalty.¹⁴

At PR19 we also made use of RoRE scenarios when stress testing financeability; for instance assessing separately the impact of a 1.0% RoRE penalty on ODIs; the 10% probability (that is, P10) level of totex RoRE in our stress tests; and calculating the headroom for the notional company to an adjusted interest cover of 1.0x.¹⁵ We propose to retain the use of stress testing when assessing financeability at PR24.

Lack of comparability

At PR19 we asked companies to estimate P10 and P90 RoRE scenarios from a specified list of revenue and cost items, adding company-specific items where appropriate. We asked that these scenarios be used to inform the overall risk range but did not provide detailed guidance to companies.

This led to companies adopting a range of different approaches, making it difficult to use company risk ranges to inform those in our final determination. We consider that variation in approach impeded comparability because of two main issues: (a) differences in input data and risk modelling, and (b) conflation of the actual and notional perspectives.

The first of these issues could potentially be remedied through providing more detailed guidance to companies as part of PR24. We will consider as part of our methodology whether there is scope to increase conformity of approach – and hence comparability – without unduly foreclosing on innovation in risk analysis.

However, because of distinguishing factors between companies (for example, geography and population density), we would not expect companies' views of what constitutes a reasonable upside or downside scenario to be identical.

¹⁴ See for instance, Frontier Economics, '[Risky business](#)', 2020, Figure 2

¹⁵ That is, the point at which cashflows would only just be covering debt interest. We discuss in section 7 the financial ratios we propose to use for PR24.

In addition, disagreement over the attainable level of efficiency and service for the notionally efficient company may cause diverging views between us and companies on how to construct notional company risk ranges.

We therefore propose that our focus and that of companies should be different when producing RoRE risk analysis:

- **Notionalised company risk analysis:** We propose that we lead on producing notionalised company RoRE risk ranges, informed by historical data and company information which can provide insights into the risks faced by the notional company. The range for each company will be based on the assumption of notional gearing, and that it will achieve our price control benchmarks on service and efficiency levels.
- **Company-specific risk analysis:** Companies could develop RoRE risk ranges from their actual company perspective using similar categories to those of our notional company ranges (i.e. Costs, ODIs, Financing, C-Mex/D-Mex, Revenue). This could involve considering the RoRE impact of risks based on: a) notional gearing (for comparability), and b) actual gearing – but in both cases allowing for efficiency and service performance that are reflective of company-specific circumstances rather than our benchmarks.

Difficulties measuring risk

Difficulties with our PR19 approach to measuring risk included:

- **Capturing future changes:** The high weight on historical data to calibrate our ranges may not adequately reflect any step-changes in risk.
- **Capturing correlations in risks:** Our PR19 approach largely considered risks independently of each other, yet there is evidence that some risks are correlated.
- **Conflating benchmarking performance with risk:** We included in our risk ranges revenue drivers whose impact was in large part clear ex-ante (for instance, embedded debt benchmarking performance),¹⁶ thereby expanding the scope of assessment beyond purely in-period risks.

As our starting point, we propose to retain significant weight on historical data in estimating the risk profile for PR24, while recognising that caution in interpretation and/or adjustments to estimates may be needed.

¹⁶ Ofwat, '[PR19 Final Determinations: Aligning risk and return technical appendix](#)', December 2019, p.31.

Because an additive approach to compiling risk ranges from individual factors contributing to risks may overstate the overall risks of the control, we are exploring alternative approaches.¹⁷ For instance, we applied a 'scaling factor' to our additive P10/P90 ranges for ODIs at PR19 final determinations, which in part reflected more detailed modelling carried out by some companies, using approaches such as Monte-Carlo simulation.¹⁸

In principle an approach using cross-impact correlations and Monte-Carlo simulation may capture overall risk more accurately. However, this is dependent on having accurate data on correlations and probabilities. Given the number of potential inputs, limited years of data and difficulty validating inputs, we are wary of the possibility that such approaches may consume significant time and effort while offering no material improvement in our understanding of risk exposure. We are further exploring how to measure risk ranges and how to aggregate risks from different sources into an overall range.

We propose that RoRE risk ranges should only capture in-period risk. Under this approach, benchmarking impacts (such as on the cost of embedded debt) would be captured in the base return, and only RoRE drivers contingent on in-period events would be used to calculate the risk ranges.¹⁹

Comprehensiveness of risk analysis

We propose to focus on average RoRE risk impacts over the 5 year period, which assumes that the notional company can bear the risks of variation in individual years. There will remain core categories for RoRE that are more comparable, and which are likely to account for the majority of return variations. These are likely to map closely to the PR19 RoRE categories (Costs, ODIs, Financing costs, C-Mex and D-Mex, Revenue). We propose that these will continue to form the basis of our notional risk ranges. We recognise that companies may wish to model company-specific RoRE drivers outside these categories for the purposes of their own risk-management exercises.

Company circumstances

We consider that RoRE calculations based on the notional capital structure and the expectation that an efficient company can, overall, meet the cost and service package

¹⁷ It is unlikely for instance, that P10 risks for all ODIs would arise simultaneously.

¹⁸ This is risk analysis involving a probability distribution for inputs that have inherent uncertainty. It then calculates results over and over, each time using a different set of random values from the probability distribution.

¹⁹ In practice we anticipate this change would only affect 'Company-specific' not 'Notionalised company' risk ranges, as in the latter perspective it is expected that companies achieve our benchmarks.

on which our determination is set, should form the basis of calculations on the balance of risk and return. This supports strong incentives for efficiency and good outcomes for customers.

We recognise that in practice operational performance as well as company-specific circumstances may drive a range of return outcomes around the central expectation for the notional company of no out-performance or under-performance. Our proposal is that we lead on the production of notional risk ranges, while companies produce company-specific risk ranges. This should allow us to understand both company-specific and notional perspectives in our decision making.

We note the arguments from several WoCs that the particular risk characteristics faced by WoCs merits further analysis and potentially a different approach to modelling the risks faced by the notional company. We will review PR19 performance data to understand to what extent differences in achieved RoRE for WoCs is statistically different compared to WaSCs, and what the implications of this should be for our future approach.

2.4 Questions

Q2.1. Do you agree with our principles for reviewing old and new reconciliation mechanisms and do you have suggestions for further reconciliation mechanisms which could be retired for PR24?

Q2.2. Do you have any comments on our proposed approach to producing risk ranges, including but not limited to:

- a. risk ranges for the efficient notional company prepared by Ofwat; and
- b. company-specific risk ranges produced by companies.

3. Allowed return on equity

3.1 Introduction and summary

Equity plays a vital role in the financing of companies. It allows a company to take on greater risks than if financed by debt alone by providing a buffer to absorb unexpected shocks. As the residual claim on a company's cashflows it is equity which is rewarded by efficiency gains and innovation.

We want to encourage water companies to innovate and find creative solutions to challenges facing the industry. Our intention is that significant amounts of revenue should be put at risk related to company performance (both on the upside and the downside), in order to better align the interests of customers and investors.

It is important that companies receive a base equity return reflecting the risks faced by an efficient company under our notional gearing. However, this does not mean the allowed return on equity should be set above a plausible central estimate of the market return requirement. To do so would mean customers paying more than necessary for delivery of the innovation, efficiency, investment and service outcomes required from water companies. External reviews before PR19 argued that our allowed return over previous price controls may have been too generous, leading to windfall gains for companies.²⁰ This theme was reiterated by Citizens Advice in their Future Ideas Lab submission.²¹ Our assessment in our recent review of the PR14 control also found that the allowed return on capital was generous to companies over that control period.²²

The return on equity is not directly observable, in contrast to the cost of debt, and must therefore be estimated. Consistent with previous controls and other UK regulators we have used the Capital Asset Pricing Model (CAPM) to set the allowed return on equity. In the CAPM, the expected return on equity is given by:

$$K_e = R_f + \beta (R_m - R_f)$$

²⁰ See for instance, NAO, '[The Economic Regulation of the Water Sector](#)', October 2015, p32, or Citizens Advice, '[Monopoly Money – How consumers overpaid by billions](#)', May 2019, pp.17-18

²¹ Citizens Advice, '[Submission to the review: 'PR24 and beyond: Future challenges and opportunities for the water sector'](#)' 26 January 2021

²² Ofwat, '[PR14 Review: Discussion paper on findings](#)', August 11 2021, p77

where: K_e is the cost of equity; R_f is the Risk-Free Rate (RFR); R_m is the Total Market Return (TMR); β is the equity beta of the notional company; and $(R_m - R_f)$ is the Equity Risk Premium.

Our emerging thinking is to:

- **Retain a fixed cost of equity (that is, no indexation).** We agree with analysis by PwC suggesting that equity indexation is unlikely to produce sufficiently clear net gains to make it a priority.²³
- **Retain the CAPM as our main tool for cost of equity estimation.** We also envision a role for cross-checks such as Market-to-Asset Ratio (MAR) analysis.
- **Select a central estimate from within the range.** We will address any asymmetry and investment incentive issues at source, avoiding any perceived need to 'aim up'.
- **Retain both historical and forward-looking Total Market Return (TMR) approaches:** We propose to produce TMR ranges using long-run historical equity returns, while using more recent data to inform the point estimate within the range.
- **Deflate historical equity returns using the ONS's forthcoming CPIH back series.** This will be conditional on the CPIH back series satisfactorily passing a review of its suitability.
- **Consider gilts and potentially SONIA swaps to inform our risk free rate assumption:** We do not propose to place weight on AAA-rated corporate bond indices.

3.2 Consultation responses

Overall, companies support the CAPM to estimate the cost of equity. On cross-checks, Anglian Water and Yorkshire Water disagreed with the use of MARs because of limited data availability and the number of assumptions involved. Yorkshire Water also questioned the reliability of broker forecasts because of their sample size. In addition, the company argued that brokers' view is not necessarily aligned with the expectations of the average or marginal investor within the sector.

Question 11.3 of our May consultation asked: "**Should we index the allowed return on equity, and if so, how ought this to be implemented?**". The following points were raised by respondents:

²³ [PwC, 'Cost of equity indexation: Evaluating the case for indexation at PR24 and beyond'](#), October 2021

- **A more accurate allowance:** Of the five responses positive towards indexation,²⁴ the Consumer Council for Water (CCWater) argued that more accurate allowances from indexing the RFR would avoid the need to adjust spot RFR estimates for market-implied rate rises that might not materialise. The accuracy of indexation was challenged by two companies. Bristol Water questioned whether the required equity return was moved by short-term volatility in the RFR, and Yorkshire Water questioned the consistency with the CAPM framework of updating one input while keeping the others fixed.
- **Increased complexity:** Eight respondents were concerned about the increased complexity that cost of equity indexation would create,²⁵ for example in financeability assessments and in adding yet another reconciliation mechanism.
- **Bill volatility:** Three responses argued that a further potentially large reconciliation would result in additional bill volatility which customers would be averse to.²⁶
- **Added uncertainty for investors:** Three companies argued that introducing indexation would increase uncertainty of revenues.²⁷ It was suggested this would be a negative for investors, who prefer the predictability of fixed returns and that an indexed return worked against this.

Only three companies supported indexation of the allowed return on equity (Affinity Water, Portsmouth Water, South East Water), with four companies not expressing a firm view on the matter (Anglian Water, Bristol Water, Hafren Dyfrdwy, Severn Trent). The remaining ten companies were opposed.²⁸

In addition to its response on Question 11.3, Bristol Water also proposed that the allowed return on equity could be varied by company based on the extent of enhancement spending and environmental obligations, as well as other factors such as the PR24 business plan's ambition and innovation.²⁹ This response developed a similar idea from the company's Future Ideas Lab submission.³⁰ The company argued that ambitious plans could cause a downside skew to expected returns, and that customers would be better protected by a higher base return on equity than by limiting totex or ODI downsides to correct this skew.

²⁴ Affinity Water, Portsmouth Water, South West Water, CCWater, and Sustainability First.

²⁵ Anglian Water, Bristol Water, Hafren Dyfrdwy, Northumbrian Water, Severn Trent Water, United Utilities Water, Wessex Water, and Yorkshire Water.

²⁶ Anglian Water, Northumbrian Water, and Sutton and East Surrey Water.

²⁷ Thames Water, South West Water and United Utilities Water.

²⁸ Northumbrian Water, Sutton and East Surrey Water, Southern Water, South Staffordshire Water, South West Water, Thames Water, United Utilities Water, Dŵr Cymru Cyfyngedig, Wessex Water, and Yorkshire Water.

²⁹ Bristol Water, 'Response letter to PR24 and beyond: Creating tomorrow, together', July 2021, pp 38-39

³⁰ Bristol Water, '[Regulating for consensus and trust. modernising economic regulation](#)', April 2021

3.3 Emerging thinking

3.3.1 Return on equity indexation

We are minded not to index the allowed return on equity. This is supported by the findings of a report from PwC accompanying this discussion paper³¹ which considered various indexation options. The PwC report evaluated options for indexation against four criteria:

- the empirical case for indexation;
- impacts of indexation on water companies' risk profile;
- impacts of indexation on water customers; and
- overall complexity and practical challenges from indexation.

PwC conclude that there is a weak case for indexing beta and TMR. We agree with PwC's assessment that there is a stronger case for indexing the RFR, but that ultimately indexation is unlikely to produce sufficiently clear gains to make it a priority. While it is likely to improve forecast accuracy, this does not guarantee a more accurate cost of equity.³² It could also increase risk perceptions for investors who value the predictability of a fixed allowance, as alluded to by certain companies.³³ The greater correlation of bills with interest rates would also exacerbate the financial impact of rising interest rates as experienced by poorer, more vulnerable households who are more likely to be net borrowers. In addition, customers in general are less well placed to manage market risk than investors. Finally, incorporating equity indexation into the price control framework would require another reconciliation mechanism, adding to the complexity of the regulatory framework.

3.3.2 Estimation framework

The CAPM is a relatively simple model, with inputs that are readily obtainable, and which is familiar to stakeholders. Nevertheless, the CAPM represents a simplification of the real world and comes with known limitations. Therefore, in addition to using the

³¹ PwC, 'Cost of equity indexation: Evaluating the case for indexation at PR24 and beyond', October 2021.

³² For instance, because holding other CAPM components fixed while RFR changes ignores potential correlations between these inputs; most notably between TMR and RFR.

³³ For instance, United Utilities and South West Water.

CAPM, we propose to use cross-checks outside the CAPM framework to gain assurance over CAPM estimates.

We intend to make use of MARs analysis, noting that this approach is widely used by equity analysts to infer investor discount rates. Yorkshire Water argued in its submission that MARs were not a suitable cross-check because of their dependence on subjective assumptions which could drive a range of results, and that data was only available for the three listed companies – limiting wider inference.

Parameter uncertainty and the need for judgement is not unique to MARs analysis. It is common to most financial and economic modelling. We are not convinced that this drawback disqualifies the approach and note that equity analysts involved in the water sector are comfortable with drawing inferences from MARs premia to the implied return.³⁴ While it is true that the listed companies have tended to display above-average performance, it is possible to control for this differentiating factor by deducting the present value of expected net RoRE outperformance from the MAR premium. We consider that the residual premium is indicative of the present value of outperformance on the allowed return on equity which the market would expect from an efficient notional company – and hence that this is a valid cross-check to the allowed return on equity. We note that the CMA RIIO-2 panel likewise considered that inferences could be taken from MAR premia when considering whether the regulatory allowed return was set too low.³⁵

3.3.3 Selecting a point estimate

We note that the CMA PR19 panel chose an allowed return on equity 25 basis points above the midpoint of its range. The panel cited concerns about asymmetry in the distribution of expected returns, investment incentives, parameter uncertainty and notional company financial ratios. We also note the CMA RIIO-2 panel's final determination that appellants in those appeals had offered no sufficiently persuasive evidence that regulators are required to aim up in general, and that the circumstances did not imply that Ofgem needed to aim up.³⁶

³⁴ For instance, Credit Suisse stated "Our blue sky scenario is that SVT is bought out by an infrastructure fund at a c35% premium to RAB and 12x EV/EBITDA for nonregulated assets. This would suggest 2,980p/share. And it would assume buyers taking sub 5.0% returns on regulated equity." Source: Credit Suisse, 'Severn Trent: Most-levered into higher UK consumer inflation', 25 October 2021.

³⁵ CMA, '[Energy License Modification Appeals 2021. Final determination](#)', October 2021, paras 5.684 to 5.686

³⁶ CMA, '[Energy License Modification Appeals 2021. Final determination](#)', October 2021, paras 5.1065 and 5.1066.

We consider that there are ways of addressing the issues raised by the CMA PR19 panel that are more beneficial to customers than aiming up. For instance, to the extent that there are issues around asymmetry or concerns about investment incentives at PR24, we propose, as our starting point, to address these issues at source rather than as an adjustment to the allowed return. For resolving financeability constraints, our preference is measures which are present value neutral in terms of customer bills – unlike aiming up on the allowed return.

We do not anticipate the PR24 price control package to be designed in such a way that requires an allowed return on equity above the midpoint of our stated range. We will carefully consider how the latest evidence on equity returns should be interpreted and the wider implications of the PR24 package when setting out our early view on allowed returns next year.

3.3.4 Plan-specific allowed returns on equity

We note in response to Bristol Water's proposal of an allowed return on equity calibrated according to plan ambition and innovation that our PR19 framework contained incentives for these factors. If sufficiently ambitious and innovative, such plans could achieve 'exceptional' or 'fast-track' status, with procedural and financial benefits.³⁷ Similarly, we accepted enhanced ODI reward rates for frontier-shifting performance, recognising the benefits this could have to our future benchmark-setting.³⁸

Overall we are not convinced that a more bespoke approach to setting the cost of equity would be more beneficial for customers than these existing incentives. While noting Bristol Water's concerns over asymmetric skew, (as discussed in section 3.3.3) our preference for addressing this issue is to address the factors which give rise to it at source.

3.3.5 Equity betas

Beta is a measure of relative (non-diversifiable) risk which informs the premium above the RFR. Estimation of this parameter requires judgements on the following:

³⁷ An earlier draft determination, and up to 35bps RoRE financial reward.

³⁸ Ofwat, ['Final determination enhanced ODI rates and thresholds'](#), December 2019

- **Length of estimation period:** Shorter estimation periods capture more recent data but can be more volatile and affected by outliers. Longer periods produce more stable estimates but may be less relevant to the ensuing control period.
- **Significant events affecting returns or volatility:** Linked to the preceding point, transient events may drive temporary share price changes that affect betas. A particular consideration is how to assess data from the period affected by the Covid-19 pandemic.
- **Frequency of data:** whether to use daily, weekly or monthly returns.

We note the CMA's PR19 decision to make use of equity betas with estimation periods ranging from two to ten years. The CMA's PR19 redetermination used daily, weekly and monthly beta estimates, whereas we focused mainly on daily data for PR19. For PR24 we propose to consider evidence from a range of estimation periods and frequencies to inform our best view of beta.

We propose to focus on UK listed water companies from periods where these companies can effectively be considered 'pure play' water companies. While noting that Pennon will fit this category following its recent sale of Viridor, for our early view of the allowed return next year, we anticipate placing limited weight on its data – mainly because of its relatively short tenure as a pure play company from the point of the Viridor sale (28 March 2020), compared to the equivalent Severn Trent and United Utilities tenures extending back to 2006.

Our PR19 approach to estimating betas for the notional company involved de-levering raw betas from listed comparators using enterprise value gearing and re-levering to the notional gearing. In their recent report,³⁹ Professors Mason and Wright highlight two issues with this approach:

- **Uncertainty over listed comparator gearing:** The authors note the uncertainty over the true level of listed comparator gearing if the definition of debt is expanded to include the market value of debt (rather than rely on book value), pension deficits and/or derivatives. This raises the prospect that listed company gearing may not be statistically significantly different from the notional gearing, and hence that de- and re-levering may not be necessary.
- **Theoretical relationship between gearing and beta:** The authors note the challenge between the result of a PR19 Weighted Average Cost of Capital (WACC) that increases with gearing and the de-levering and re-levering formula which draws on the Modigliani–Miller theorem, which suggests the WACC should be invariant to gearing.

³⁹ [Mason R., Wright, S., 'A report on gearing, price controls, and financial resilience'](#), December 2021.

The report highlights how a similar issue was addressed by the CMA in the NATS final determination⁴⁰, in which the notional gearing was set equal to that of the listed comparators used for equity beta estimation. The report identifies other approaches which seek to address the issues above.

The alternative approaches proposed by Mason and Wright result in a WACC which is lower than that which would be obtained under our PR19 approach. We welcome views on how to reflect differences between listed company and notional gearing, and how this should be factored into beta estimation.

3.3.6 Total Market Return

The TMR measures the expected return on the 'market' as a whole, where a sufficiently diversified market for securities is typically taken to be the stock index for all shares in developed economies (like the UK FTSE-All Share).

The different sources of data used to estimate the TMR mean that the range is often quite wide (for example, 130bps in the CMA's PR19 redetermination).⁴¹ We identify two main areas to resolve as we develop our approach:

- **Estimation method:** Estimates from approaches which rely on long-run averages of historical returns change slowly over time and only gradually reflect changes to latter-day financing conditions. Approaches that use more recent data (for instance Dividend Discount Models⁴²) have the advantage of using more up-to-date data on returns, but are often assumption driven (for example, on the assumed rate of growth of dividends) which can lead to a range of plausible values. That said, this is not necessarily a significant differentiating factor from reliance on historical averages – which also requires strong assumptions (e.g. that investors treat past performance as a guide to future returns) and is sensitive to assumptions on averaging method.
- **Treatment of inflation:** The choice of historical inflation measure used to derive real returns can produce material differences in the estimated return.

We note that while the CMA 's PR19 redetermination placed predominant weight on historical approaches and weight on both historical RPI and CPI, the CMA's RIIO-2 final

⁴⁰ CMA, '[NATS \(En Route\) Plc / CAA Regulatory Appeal](#)', July 2020

⁴¹ CMA, '[Ofwat price determinations, final report](#)', March 2021, p. 845, Table 9.4

⁴² These models infer an investor discount rate from current share prices and dividends, making assumptions about the dividend growth rate.

determinations concluded that Ofgem's TMR range and point estimate was not wrong and that disputing companies had not demonstrated errors in its approach. Ofgem's TMR point estimate was 6.5% in CPIH terms and focused on long-run averages of CPI-deflated returns, with cross-checks from forward-looking approaches.⁴³ This is the same value as we used in PR19.

We consider that placing excessive weight on historical returns could fail to pick up a structural shift in market return expectations, which could result in a TMR point estimate which materially overstates or understates the expected market return. The principle of placing weight on contemporaneous market factors is also well established from previous decisions in water regulation. For instance, our TMR point estimate from final determinations at PR04 and PR09 was higher than the arithmetic average UK return implied by historical returns data.⁴⁴

We propose for PR24 to use as our starting point a range derived from historical (ex-post and ex-ante) approaches. We then propose to consider evidence from forward-looking approaches when deciding our point estimate from within the range of historical estimates. This will give more weight to historical approaches while allowing us to reflect recent market conditions.

The ONS set out in March this year that it intends to publish a historical CPIH back series for 1947 to 1987 as a high priority.⁴⁵ Given our proposals to move to full CPIH indexation of the RCV (see Section 6), there are simplicity and accuracy advantages to directly using a CPIH-based TMR rather than adjusting RPI-based TMR estimates with a forward-looking RPI-CPIH 'wedge'.⁴⁶ Subject to it successfully passing a review of its suitability, we propose to use the ONS's CPIH back series to deflate historical equity returns.

3.3.7 Risk-free Rate

The risk-free rate (RFR) is a measure of the rate of return that an investor can expect to earn without taking any systematic risks. The RFR is a hypothetical number as no

⁴³ CMA, '[RIIO-2 Energy License Modification Appeals: Summary of provisional determination](#)', 11 August 2021, p.5.

⁴⁴ PR04 and PR09 TMR point estimates were 7.7% and 7.4%, respectively, while the DMS whole-period arithmetic average UK return was 7.3% and 7.1%, respectively (real, RPI). Source: Ofwat, '[PR19 Final Methodology, Appendix 12: Aligning risk and return](#)', December 2017, p37, Figure 8.

⁴⁵ ONS, '[Consumer prices development plan: updated March 2021](#)', March 2021.

⁴⁶ This would, in particular, be impacted by the UKSA's proposal to reform the RPI measure in 2030.

investment has absolutely zero risk. For this parameter there are various choices or assumptions to be made:

- **Choice of risk-free proxy:** UK regulators have, with the endorsement of academic experts,⁴⁷ tended to use inflation-linked gilts. We note the CMA's decision in its PR19 redetermination to use a synthetic index involving 50% weight on RPI-linked gilt yields and 50% weight on AAA-rated corporate bond yields.⁴⁸ We also note, however, the CMA's RIIO-2 final determination from October 2021 which found that Ofgem's use of RPI-linked gilt yields alone to inform its RFR was not wrong.⁴⁹
- **Length of averaging period:** UK regulators have increasingly moved away from using long trailing averages (i.e. those reflecting several years' of yield data). We note that the CMA PR19 redetermination used a 6-month trailing average which was longer than the 1-month we used in PR19. The CMA's RIIO-2 final determination retained Ofgem's approach of using a 1-month averaging period, concluding that this was not wrong.⁵⁰
- **Forecasting approach:** For PR19 we used the rate rise implied by forward gilt rates to uplift our September 2019 estimate of the RFR to a forecast average for 2020-25. The PR19 redetermination did not apply such an adjustment, considering that forward rates do not offer a better assessment of future spot rates than current spot rates.⁵¹
- **Inflation adjustment:** The use of nominal and RPI-linked yields raises the issue of how to convert to a CPIH basis.

Proxies for the RFR should have few (if any) risk premia embedded in their yield. The use of a AAA corporate bond index⁵² would not satisfy this criterion. To adjust this index to a risk-free basis would require adjusting for risks around liquidity, inflation, creditworthiness, and complexity as well as potentially the term premium.⁵³ There is also a risk that events driving up yields for a single instrument may create a misleading impression of the RFR if the index comprises of a small number of instruments.⁵⁴

⁴⁷ Wright et al., '[Estimating the cost of capital for implementation by UK regulators](#)', March 2018, p.8.

⁴⁸ CMA, '[Ofwat price determinations, final report](#)', March 2021, pp. 778-779, para 9.160.

⁴⁹ CMA, '[RIIO-2 Energy License Modification Appeals: Summary of provisional determination](#)', 11 August 2021, pp. 4-5.

⁵⁰ CMA, '[Ofwat price determinations, final report](#)', March 2021, pp. 63-64, para 5.176.

⁵¹ CMA, '[Ofwat price determinations, final report](#)', March 2021, p.795, para. 9.234.

⁵² Specifically, the simple average of the iBoxx non-gilts AAA-rated corporate 10+ and 10-15 indices.

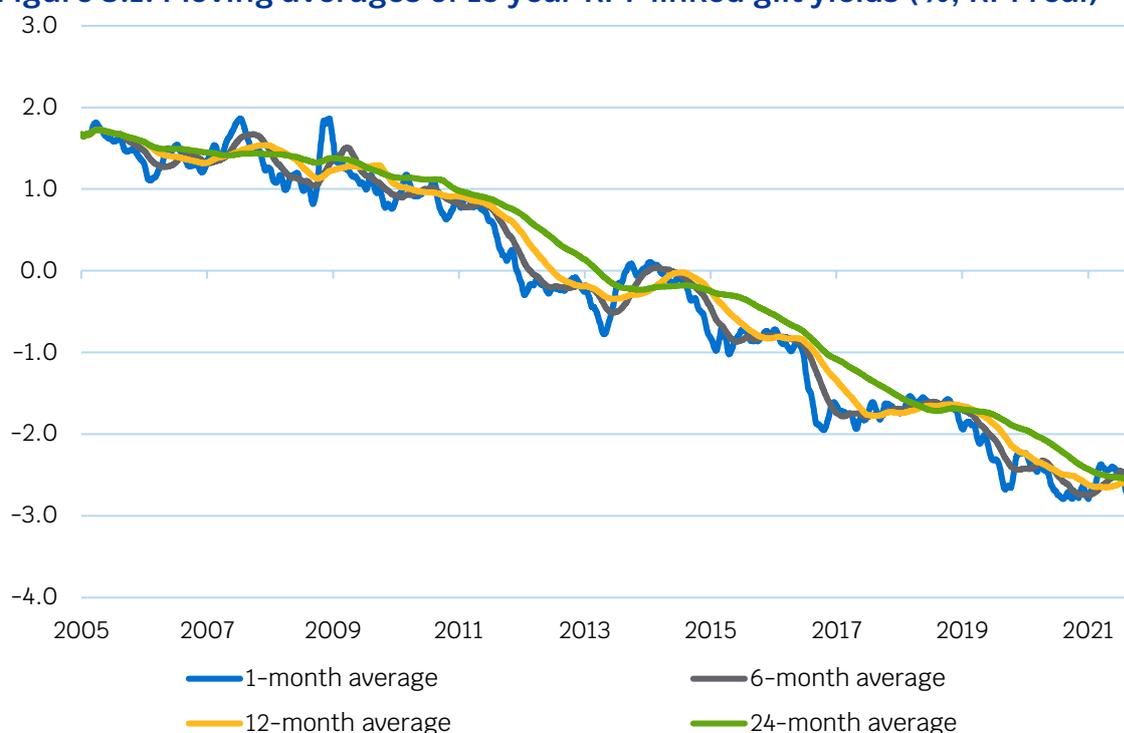
⁵³ We note that the weighted average years-to-maturity of the CMA's AAA-rated synthetic index on 06/10/2021 was 17 years, compared with the CMA's finding using December 2020 data of c,20 years.

⁵⁴ For example, the CMA's index had just 20 unique instruments as at 6 October 2021, and there was a high weight assigned to certain individual instruments,

From the perspective of simplicity, transparency and accuracy, better risk-free proxies exist in the form of gilts and SONIA swap rates. These are relatively liquid measures,⁵⁵ with low credit risk,⁵⁶ which are therefore close to the hypothetical risk-free rate. We acknowledge, however, the CMA RIIO-2 panel's view that there was evidence supporting a 'convenience yield' in government debt and that there was therefore potential to improve index-linked gilts as a proxy for the RFR.⁵⁷ We intend to carry out further work to better understand this issue.

We consider that an averaging period of several months is likely to be sufficient to smooth unrepresentative volatility, while capturing recent enough data to remain relevant to a forecast for the control period. **Error! Reference source not found.** below sets out how different averaging periods smooth volatility.

Figure 3.1: Moving averages of 15 year RPI-linked gilt yields (% , RPI real)



Source: Ofwat analysis of Bank of England data

⁵⁵ The Bank of England found on 3 June 2021 that the SONIA OIS market was 'deep, liquid and transparent' at maturities up to 50 years: Bank of England, '[DLT assessment of the SONIA OIS Market](#)', 3 June 2021

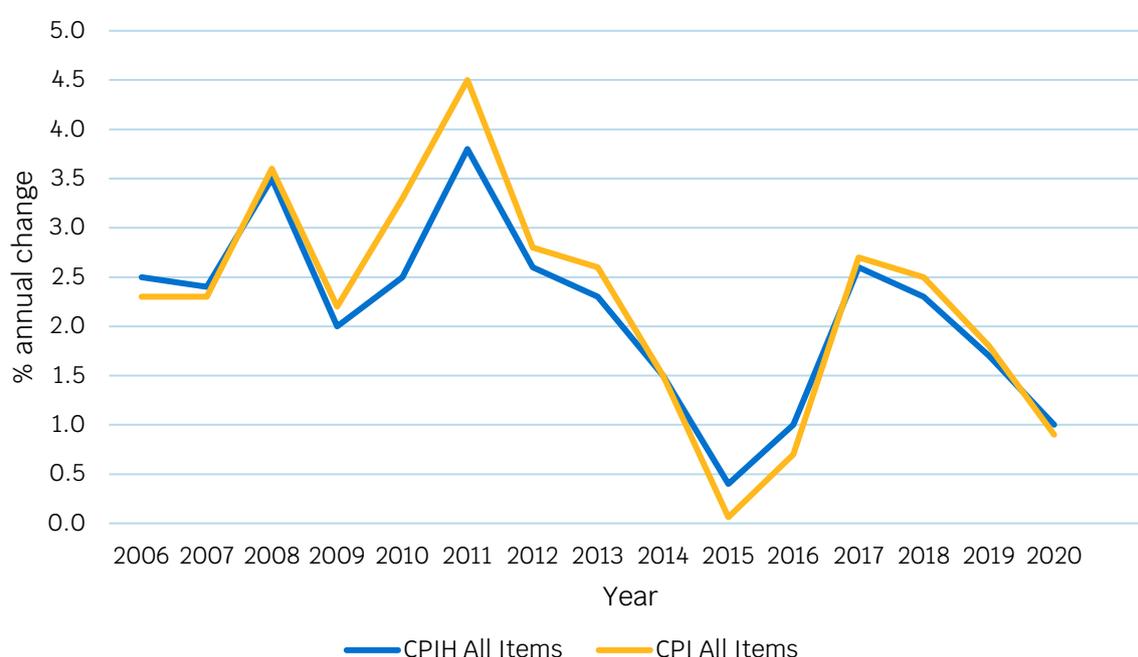
⁵⁶ SONIA is based on collateralised overnight lending, removing most credit risk, and the high credit rating of the UK Government means it also has low credit risk.

⁵⁷ CMA, '[RIIO-2 Energy License Modification Appeals: Summary of provisional determination](#)', 11 August 2021, p. 17, para 5.45

We anticipate placing limited weight on forward rates to inform our RFR point estimate, consistent with evidence in the PR19 CMA redeterminations, our PR14 review,⁵⁸ and the PwC report accompanying this discussion document.⁵⁹ This evidence suggests that the forecast accuracy of unadjusted averages of historical rates is not improved by uplifting for forward rates, showing a clear tendency in recent data to overshoot the actual rate.

We propose to deflate nominal yields to a CPIH basis using the Bank of England's 2.0% CPI inflation target as a long-term assumption. As shown below, the difference between CPI and CPIH over time is small and not persistently negative or positive.⁶⁰

Figure 3.2: Annualised CPIH and CPI inflation, 2006–2020



Source: Ofwat analysis of ONS data

Note: Start date of 2006 is informed by the availability of CPIH annualised inflation from this point

However, inflating RPI-linked yields to a CPIH basis is rendered more complex by the UKSA's reforms to RPI expected in February 2030. While both the Ofwat PR19 and the CMA's PR19 determinations uplifted the RPI yield using the OBR's estimate of the long-term RPI-CPIH wedge, this approach is liable to become inaccurate as we approach the 2030 transition point. This is because the yields of long-dated RPI-linked gilts will increasingly reflect an expectation of principal indexed to lower CPIH inflation rather

⁵⁸ See eg '[PR14 Review: Discussion paper on findings](#)', Figure 5.8, p.75.

⁵⁹ [PwC, 'Cost of equity indexation: Evaluating the case for indexation at PR24 and beyond'](#), Figure 3.7

⁶⁰ On average between 2006 and 2020 the CPI-CPIH wedge averages 0.1%.

than legacy RPI. As such, the approach of using the OBR's estimate of the wedge (currently a long-term wedge of 90bps)⁶¹ is likely to overstate the true conversion needed to infer the pure CPIH-linked market rate. This is something we are looking at more closely and welcome views on how best to make the conversion.

3.4 Questions

Q3.1. How should we reflect the period affected by Covid-19 in our approach to estimating beta?

Q3.2. Noting the impact of gearing on betas discussed in the report by Professors Mason and Wright, how should we adapt our approach to specifying beta for a company at the notional gearing?

Q3.3. How should we convert RPI-linked yields into their CPIH-linked equivalents when deriving a RFR point estimate?

⁶¹ OBR, ['Economic and Fiscal Outlook'](#), October 2021, p. 71.

4. Allowed return on debt

4.1 Introduction and summary

In this section, we outline proposals on how we envisage remunerating debt financing in the allowed return for the notional company. In section 5, we explain our early thinking on the notional capital structure for PR24.

We envisage an approach to the allowed return on debt in which we set a benchmark for the industry based on embedded debt and the cost of new debt for an efficient company at the notional capital structure over the period 2025–2030. Consistent with the approach at PR19, we propose to set a fixed allowance for embedded debt and to index the cost of new debt by reference to a market index benchmark. We expect the allowance for embedded debt to be lower at PR24 because of the replacement of debt that matures over 2020–25 with new debt at lower interest rates.

Below we set out our summary of the feedback received to our May consultation in relation to the approach to setting an appropriate allowance for the cost of debt. Based on that feedback and further assessment, we are minded to:

- **Set a sector-level allowance**, to promote strong incentives to issue debt efficiently while managing risk.
- **Set an embedded debt allowance informed by instrument-level data**, with market index data as a cross-check.
- **Exclude derivatives from the cost of debt allowance**. These instruments do not directly finance expenditure, are net present value neutral at the time of issuance and would typically be issued for reasons to do with companies' actual financial structure.
- **Base the assumed share of new debt on the sector's refinancing and new investment needs**. We will cross check this approach using a more notional index-based framework.
- **Streamline our approach to considering exceptional claims for a company-specific allowance for debt**. We will focus on notional cost factors solely due to small size and seek evidence of customer support, though we propose to discontinue the benefits assessment.

4.2 Consultation responses

4.2.1 Balance sheet data or market index?

Question 11.4 of our May consultation asked: **"To what extent should we place weight on a) balance sheet data; and b) index data when setting the allowed return on debt?"**

More than half of companies supported the balance sheet approach when setting the allowed return on debt. Bristol Water, Northumbrian Water and Yorkshire Water especially supported the principles set out in the CMA's PR19 redeterminations. Yorkshire Water argued for balance sheet data with an individual company approach, instead of a sector-based approach.

Hafren Dyfrdwy, Severn Trent Water and Sutton and East Surrey Water argued for equal weight on balance sheet and market index data. Northumbrian Water, Southern Water, United Utilities and Yorkshire Water responded in favour of balance sheet data with a cross-check using market index data.

In contrast, Anglian Water and Thames Water argued for a market index approach, possibly with a cross-check using balance sheet data.

Dŵr Cymru suggested using balance sheet data for embedded debt and market index data for new debt.

Comments were also made on the following issues related to cost of debt:

- Separate allowances;
- Transparency of methodology;
- The treatment of derivatives;
- Length of trailing average under the market index approach.

Separate allowances

Anglian Water, Affinity Water, Southern Water and Dŵr Cymru were not supportive of a single allowed return on debt. Southern Water especially noted that "the separate allowances provide useful clarity and allow more meaningful tracking of actual performance against the final determination allowance."

Transparency

Anglian Water, Northumbrian Water, Severn Trent Water and Yorkshire Water all argued for more transparency in the estimation of the sector's average debt costs. Using the CMA findings, they noted in their responses that calculations are highly sensitive to

adjustments. Thus, they advocate the establishment of a clear and transparent methodology.

Derivatives

Anglian Water, United Utilities and Yorkshire Water argued for including the impact of derivatives to reflect the full cost of debt when using a balance sheet data approach. Yorkshire Water stated that "Unpicking and excluding certain elements of a debt portfolio, as Ofwat has sought to do previously, breaks the matching principle resulting in a potential cost of debt that does not match the risk."

Trailing average

Thames Water argued that Ofwat should use a longer than 15-year trailing average under the market index-based approach. That is because a 15-year average would not cover the amount of debt issued in the 2005–2010 period that has a disproportionately high impact on the average cost of debt.

4.2.2 Company specific adjustments

Question 11.5 of our May consultation asked: "**Should we allow adjustments to the sector allowed return based on company size – and how should this be assessed?**"

The four smallest WoCs, along with Anglian Water, South East Water and Yorkshire Water supported continuing to allow uplifts to the allowed return to reflect certain companies' circumstances.⁶² Bristol Water and SES Water also noted that the CMA uplifted the allowance for liquidity and transaction costs in its redetermination of Bristol Water's price control. South West Water was opposed to company specific adjustments, setting out that companies that are too small to be as efficient as other companies in the sector should merge or consolidate in order that customer bills are efficient.

Thames Water, Wessex Water and Yorkshire Water argued that factors other than size, such as the absolute quantum of outstanding debt, changing types of investments and the risks taken, and timing of issuance should be taken into account in determining specific debt costs.

⁶² The four smallest WoCs are Bristol Water, Portsmouth Water, SES Water and SSC Water.

4.3 Emerging thinking

4.3.1 Embedded debt

An established feature of regulation of the water sector, along with a number of other areas of UK economic regulation, is for the allowed return to include the recovery not only of the cost of new debt, but the recovery of historically incurred debt (subject to appropriate checks on efficiency). With falling interest rates since 2008 this has led to the allowed cost of debt to be greater than that which new entrants would require if there were competitive entry. Indeed, a 2018 study into the allowed return on capital commissioned by the UKRN saw the academic authors argue against an allowance for the cost of embedded debt.⁶³

Balance sheet data or market index?

Our PR19 allowed cost of embedded debt focused on a market index benchmark, with a cross-check from balance sheet data. The use of a market index has the advantage of being unlikely to be significantly influenced by a given water company. However, it may not be reliable if the risk-return characteristics of firms making up the index differ from those of water companies (even if they have the same or similar credit rating). For example, in PR19 we found that water companies could typically issue bonds at lower yields than the iBoxx A/BBB non-financials 10yrs+ index, resulting in the application of an 'outperformance wedge' to the 15 year average of that index in deriving the final allowance.

With 17 companies to draw on for evidence of embedded debt costs, we consider that drawing on this sample avoids being unduly influenced by an individual company's cost of debt.⁶⁴ This approach avoids having to calculate an 'outperformance wedge' as was the case in PR19. The added benefit of simplicity is therefore an attraction from starting with balance sheet data. We note the CMA concluded the same in its PR19 redetermination.

In light of the above and reflecting on feedback from the May consultation, we propose to assign more importance to balance sheet data as part of PR24, with a cross-check from relevant benchmark indices. We propose doing so in a transparent way based on a

⁶³ Wright, Burns, Mason and Pickford, '[Estimating the cost of capital for implementation of price controls by UK Regulators](#)', 2018, p 78, section 8.5.2. One author, Burns, disagrees and argues that the allowed return should include embedded debt, p.85, section 9.2.

⁶⁴ Nevertheless, we may consider it necessary to take account of the credit profile of individual companies compared with the notional company.

suitable central estimate of company balance sheet debt costs. In summary, we anticipate our method to involve:

- Identifying the suitable comparator set of companies (for instance the WaSC and large WoCs);
- Evaluate appropriate averages (for instance mean and median) and consider the impact of any outliers; and
- Cross-check the resulting central estimates against a suitable market index (for instance the collapsing average for the A/BBB 10years+ indices).⁶⁵

Derivatives

In assessing companies' cost of debt, our preference is to use the instrument-level data collected in the annual performance report.⁶⁶ Instrument-level data allows us to consider the nature of each instrument and its relevance to our assessment of the allowed cost of embedded debt, for example short-term liquidity facilities were excluded from our PR19 allowance as they were accounted for elsewhere.

Consistent with previous price reviews and other regulators, we propose to exclude all swaps from our view of the notional cost of debt – other than currency swaps. We include currency swaps to avoid dealing with debt instruments in multiple currencies. The exclusion of other swaps is a long-standing regulatory practice. In our view, it is appropriate to omit interest rate swaps because:

- **Swaps are not used to raise finance to support investment, but to reprofile cash flows.** Ignoring transaction costs, interest rate swaps should be net present value neutral at the time of issue and therefore should not affect the overall cost of debt. It would not be efficient to use swaps if the total costs exceeded the cost of standard debt and vice versa.
- **Derivatives can be used to shift financing costs from one period to another and future derivative use is difficult to predict.** Setting an embedded cost of debt allowance by reference to underlying debt instruments at each price review means that a fair cost of debt allowance would be set over time, but setting by reference to derivatives at one point in time might not.

⁶⁵ As the CMA explained (['Ofwat price determinations, final report'](#), March 2021, p.907, fn 2668), a collapsing average 'drops' one year of the trailing average every year. For example, a 15-year collapsing average over the 5-year price control period would be an average of the 15-year, 14-year, 13-year, 12-year and 11-year averages. This methodology attempts to mimic the impact of moving through the price control period, so that (in this example), if we start with a 15-year trailing average of embedded debt, by the end of the first year we will have 14 years of embedded debt and one year of new debt, and so on.

⁶⁶ See for example, ['Severn Trent Water Limited. Annual performance report 2021'](#), 2021, table 4B, pp. 124 - 129.

- **The differing approaches to the use of derivatives suggests that their use represents company-specific risk management decisions.** The costs or benefits of which could reasonably be considered to reside with companies and their investors.

While the CMA in the PR19 redetermination used debt data from annual performance reports, on the subject of derivatives it noted in its cost of debt consultation: “Ofwat’s objections to having to assess and count such [derivative] instruments would seem to match the CMA’s own concerns about a regulator’s ability to properly audit the many different types of potential derivative instruments – and that dedicating the resources to accurately conduct such an assessment may not be in the customer interest in the round.”⁶⁷ In the recent energy appeals, the CMA concluded that Ofgem was not wrong in its approach to, or estimate of, the cost of debt allowance – including the exclusion of derivatives within the cost of debt.⁶⁸

Market index cross-check

Our market index benchmark approach at PR19 was based on a 15-year average of the A and BBB rated IHS Markit GBP non-financials 10yrs+ indices.⁶⁹ The market index was projected to the start of the price review period using market implied interest rate rises and reduced by a 25-basis points 'outperformance wedge'.

As noted above, for PR24 we are minded to use a market index approach as a cross-check to our point estimate based on balance sheet debt. The CMA used a 'collapsing trailing average approach'. We consider this may give a more realistic representation of embedded debt costs for this cross-check, compared to using a fixed averaging period. In its PR19 redetermination the CMA considered both the 20-year and the 15-year averages of the A/BBB index as well as the collapsing averages of the two approaches in order to cross-check the cost of debt derived from company reported debt costs.

4.3.2 New debt

We set out in our May consultation that there may be potential for simplification by not making separate allowances for new and embedded debt. Adopting an approach

⁶⁷ CMA, '[Water Redeterminations 2020. Cost of debt – Working Paper](#)', January 2021, pp.52-53.

⁶⁸ CMA, '[Cadent Gas Limited, National Grid Electricity Transmission plc, National Grid Gas plc, Northern Gas Networks Limited, Scottish Hydro Electric Transmission plc, Southern Gas Networks plc and Scotland Gas Networks plc, SP Transmission plc, Wales & West Utilities Limited vs the Gas and Electricity Markets Authority, Final determination Volume 3: Individual Grounds](#)', October 2021, p 285, Chapter 14 WWU Head A: Cost of debt paragraph 14.254.

⁶⁹ The 15-year trailing average market benchmark captured 80% of the outstanding listed bonds issued in the period 2009-2019.

similar to Ofgem's RIIO-2 final determination would see a single allowance covering the costs of both embedded and new debt, and would avoid having to separately estimate the notional proportion of new debt.⁷⁰

Having considered this further, we are not persuaded of the advantages of a single allowance approach. The practical implication of our preference for taking a balance sheet approach to setting an embedded debt allowance and the potential for material real RCV growth means that, for PR24, we are minded to retain our approach of setting separate allowances for the cost of embedded and new debt (along with a notional proportion of embedded and new debt). Providing a separate allowance for new debt simplifies the indexation of the cost of new debt (which we propose to retain).

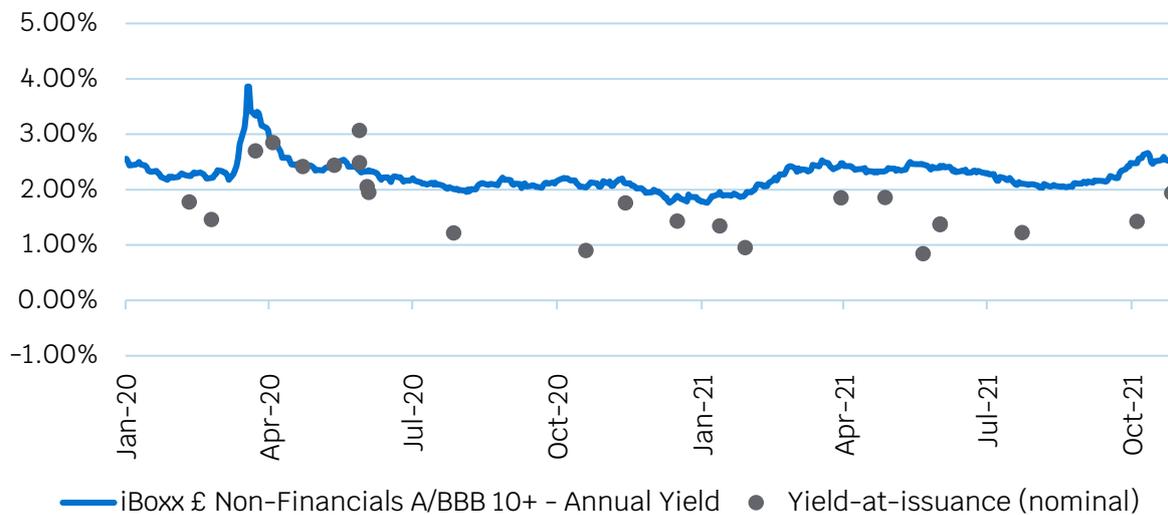
At PR19 we based our allowance for the cost of new debt on a single month average of the yield of our market benchmark (that is the 15-year average of the A and BBB rated non-financials 10yrs+ indices) adjusted to account for the market implied increase in the 15-year RFR over 2020-25. We then applied a 15-basis point 'outperformance wedge'. In the PR19 redetermination, the CMA did not apply the 15-basis point outperformance wedge. The CMA also applied a 6 month trailing average approach to estimating the cost of new debt and did not apply a forward rate adjustment.

The performance of water company yields at issuance compared with the market benchmark since 2020 is shown in Figure 4.1. Our analysis suggests water companies have issued debt with an average tenor of 18 years with yields at 55 basis points below the market benchmark.⁷¹ This suggests that there may be a case for amending the benchmark or applying an outperformance adjustment, which we will keep under review ahead of providing an early view on the allowed return next year.

⁷⁰ Ofgem's RIIO-2 final determination allowed return on debt set a combined cost of debt using an extending trailing average of their preferred benchmark index.

⁷¹ Our analysis includes 24 instruments issued between 1 April 2020 and 31 October 2021 and excludes subordinated debt issuances in this period.

Figure 4.1: Company yield-at-issuances vs iBoXX A/BBB since PR19 final determination



Source: Ofwat analysis of IHS Markit iBoxx and Refinitiv bond issuance data

4.3.3 Share of new debt

At PR19, we assessed the average share of new debt as 20% over 2020–25. In its PR19 redetermination, the CMA started its assessment based on actual debt maturing for WaSCs and large WoCs, plus its assumption on new debt required for RCV growth, estimating a figure of 17%. It cross-checked the results against notional approaches, estimating the share of new debt implied using 15- and 20-year collapsing averages.

The instrument-level data collected in our annual performance report will provide an indication of the debt on companies' balance sheets due to mature over the control period. Therefore, we are minded to use the CMA approach to inform our estimation of the share of new debt across the price review period, using the notional approach as a cross-check.

4.3.4 Company specific adjustments to the cost of debt

In principle, we would expect a single benchmark for the cost of debt for all companies based on the notional capital structure. However, in exceptional circumstances a case may be made for a higher allowance. At PR19, we required small companies to provide compelling evidence that any requested uplift was appropriate, that there were adequate compensating customer benefits, and that the companies' own customers supported funding the uplift.

Following this framework, we made a company specific uplift to the cost of debt allowance of 0.35% for embedded debt and 0.25% for new debt for Portsmouth Water and South Staffs Water.⁷² Sutton and East Surrey also requested an uplift to its cost of debt but failed both on the customer benefits and customer support tests. Bristol Water failed the customer benefits test.

The CMA did not apply the customer benefits test in allowing Bristol Water an uplift to its cost of embedded debt. The CMA did not uplift the cost of new debt for Bristol Water, based on recently issued debt instruments.⁷³ Bristol Water ultimately received a company specific increase of 0.30% to its cost of embedded debt and a 5bps uplift to reflect higher issuance costs in its PR19 redetermination by the CMA.

For PR24, we consider that any uplift to the cost of debt should only reflect cost factors due to small size, rather than management choices around timing and tenor of debt issued.⁷⁴ We also consider that higher financing costs due to small size should not presumptively be passed through to customers where alternatives (for instance mergers) could result in a better outcome. Nonetheless, we recognise that the benefits test applied at PR19 introduced complexity, imposing a considerable resourcing burden on companies and ourselves. We also note the CMA's decision not to include a benefits test. We therefore propose that any applications for a company specific allowance on debt will need to provide compelling evidence that it is supported by customer preferences. This is designed to provide protection to customers analogous to that in a competitive market – where customers (through market prices and choice of provider) would be able to choose not to fund higher financing costs relating to a company's small size.

4.4 Questions

Q4.1. Do you agree with our proposed role for benchmark bond indices in cross-checking a cost of debt allowance based on a balance sheet approach?

⁷² The uplift at PR19 was based on our assessment of an historic average small company spread to the iBoxx A/BBB index of +0.10% plus the reversal of the sector benchmark spread to the iBoxx A/BBB (the 'outperformance wedge') of -0.25% for embedded debt and -0.15% for new debt. This implied a small company cost of debt premium of 35 and 25 basis points on embedded and new debt respectively.

⁷³ The CMA did not consider that the decision to award Bristol Water an uplift to its cost of embedded debt allowance automatically justified a similar adjustment to the cost of new debt. The CMA considered that analysis of more recent issuance demonstrated that Bristol Water could now issue debt more flexibly and more competitively than was historically the case.

⁷⁴ We retain our view from PR19 that there is insufficient evidence of a small company cost of equity premium and note the CMA's PR19 redetermination supported this position.

Q4.2. Given the persistent issuance discount of water company bonds against the iBoxxx A/BBB index, how should this be reflected in our new debt allowance-setting?

Q4.3 Do you agree with our proposal to restrict company specific adjustments to reflect only factors due to small size, and to remove the benefits test?

5. Notional capital structure

5.1 Introduction and summary

We set price determinations by reference to an efficient company with a notional capital structure (i.e. the mix of debt and equity finance). The notional capital structure underpins the allowed return on capital, our view of the balance of risk and return and our assessment of financeability. A return on capital based on notional gearing allows companies to make their own choice about financial structure, while at the same time ensuring that customers fund no more than the efficient cost of capital for a notionally structured company. This approach allows us to treat all companies in a consistent manner.

The choice of capital structure is a matter of regulatory judgement and remains under careful consideration for PR24. Above all, it should be a structure that allows an efficient company to be able to access finance on reasonable terms, allowing it to carry out its functions, taking account of wider economic circumstances (including changes in financing costs over time). Therefore, we propose a framework for selecting the notional capital structure which:

- incentivises efficient financing choices given the **balance of risk faced by the company**;
- reflects the **scale and nature of investment needs**;
- takes account of a range of **appropriate benchmarks and evidence**; and
- allows the regulator to set a **price control that is in the best interests of current and future customers**.

We discuss below our emerging thinking. In summary, there may be benefits to adopting a lower notional gearing level at PR24 and we are exploring this further.

Lower gearing can be achieved in different ways. For example, through equity injections or adopting a lower dividend yield (relative to the allowed return on equity) which will allow retained earnings to grow as a proportion of RCV. We recognise that raising new equity may involve a transaction cost. For example, at PR09, we provided for an issuance allowance of 5% of new equity for three companies and Ofgem's RIIO2 final determination provided an equivalent equity issuance allowance.

5.2 Consultation responses

In our May consultation, Question 11.6 asked: "**Should we make different assumptions for the PR24 notional structure compared to PR19, and how should such a change be**

implemented?" Company responses were against a change to the level of notional gearing. The main points raised were:

- **Any change must be supported by market evidence:** Companies set out that reducing the notional gearing would move the notional company further away from the actual position of the sector.⁷⁵
- **Stability and consistency:** Certain respondents considered that further changes to the notional gearing were not consistent with stable and consistent regulation.⁷⁶
- **Implications for financeability:** Certain companies argued that the notional structure should not be used to solve financeability constraints.⁷⁷ However, this was not universally the case. For example, Yorkshire Water set out the part that equity can play, stating that "Whilst a reduction in notional gearing can be considered a potential mitigating solution for sensitivity analysis on financeability, it should not be considered a base assumption for the notional structure."
- **Treatment of index-linked debt:** United Utilities was supportive of an increase in the proportion of index-linked debt. However, it noted that "...as demand for corporate index-linked debt is relatively scarce (most is in the hands of pension funds for long duration), index-linked debt in the sector has generally extended debt duration profiles and has been raised at a time of higher real rates relative to the current environment." Other companies such as Anglian Water and South East Water considered that 33% (as assumed in PR19) continues to represent an appropriate level for index linked debt, given the composition of such debt in the industry and the potential for further transition to CPIH. Some companies noted that if Ofwat assumes a level of CPI-linked issuance for the notional company at PR24, it should allow for a higher cost of issuance.⁷⁸
- **Consistency with other assumptions for the notional company:** Yorkshire Water commented that if actual sector data were to be used to support a change in the notional assumptions, then this needs to be consistently applied across all notional debt assumptions.

⁷⁵ Affinity Water, Anglian Water, Portsmouth Water, Southern Water, South Staffordshire Water, Sutton and East Surrey Water, United Utilities Water, Dŵr Cymru, Wessex Water.

⁷⁶ Dŵr Cymru, Northumbrian Water and United Utilities Water.

⁷⁷ South Staffordshire Water, United Utilities Water, Wessex Water.

⁷⁸ Anglian Water, Northumbrian Water, South East Water, Southern Water, Yorkshire Water.

5.3 Emerging thinking

5.3.1 Notional gearing

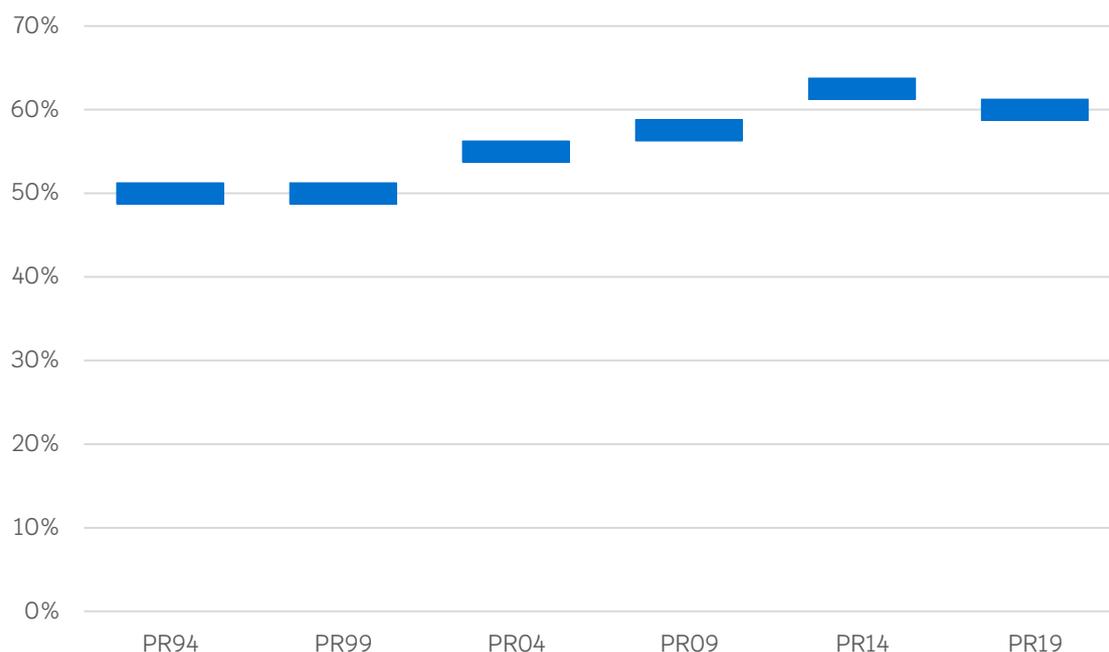
Below we outline the framework within which we propose to consider the appropriate notional gearing for PR24. In considering the market and forward-looking situation at PR24, we consider that there may be benefits to adopting a lower notional gearing level at PR24 and we are exploring this further.

Balance of risk

The notional capital structure, and in particular the level of notional gearing and interest linked debt, is a matter of regulatory judgement and has changed significantly over time.

Figure 5.1 shows that, through a series of small incremental changes, notional gearing increased from 50% at PR94 to 62.5% at PR14. Similar changes to the notional structure over time have been seen in other regulated sectors.⁷⁹ However, we do not consider the increase in notional gearing between PR94 and PR14 is reflective of a reduction in the balance of risk for companies over that period.

⁷⁹ In the recent energy appeals, the CMA noted that the gas distribution sector saw gearing rise to 65% in RIIO-1 compared to 62.5% in the previous control. Conversely, the gearing assumed for SSEN-T and SPT fell from 60% to 55% between the two controls. Ofgem made further adjustments at RIIO-2, reducing notional gearing by 2.5% for NGG and 5% for gas distribution companies and NGET.

Figure 5.1 Notional gearing from 1995 to 2025

Note: At PR09, there was a 5% differential in gearing between WoCs (52.5%) and WaSCs (57.5%).

It is imperative that companies have a sufficient equity buffer to cope with and recover from the financial impact of supply-side or demand-side shocks. At PR19 we made a small reduction to notional gearing from 62.5% to 60% because of our proposals to make greater use of markets and to put more revenue at risk associated with service performance. The combined effects of a more uncertain future (for example, driven by less predictable weather and the effects of climate change) and revenue at risk from service performance (including reviewing whether the PR19 gearing reduction was sufficient for this) may indicate a greater role for equity in order to provide a buffer against supply-side or demand-side shocks.

Investment needs

We expect investment to be funded by a mixture of debt and equity to ensure that companies are able to maintain gearing and other financial metrics at appropriate levels. Water companies are expected to face substantial investment needs over PR24 and beyond. Therefore, we may expect the notional company to reduce gearing in anticipation of this investment in order to increase the capacity to borrow efficiently. New equity to fund real RCV growth may be in the form of retention of dividends or new issuance. The role we expect equity to play in support of growth or to improve financial headroom is consistent with the actions we have seen from a number of companies. For example, Severn Trent issued £250 million of new equity to support its Green Recovery programme, and a number of companies have announced they will retain a larger proportion of earnings across the current price review period, in many cases to

support RCV growth or reduce gearing.⁸⁰ We see similar examples in other sectors of equity supporting the growth of the asset base.⁸¹

We propose to set an assumption for the dividend yield at PR24 that reflects the allowed return on equity and the mix of that return through cash and inflation of the RCV, as well as the real growth in RCV. Whilst our financial model allows for the fluctuation of gearing through the price control period, we are minded to adjust our dividend assumption on a company by company basis such that gearing remains at or close to the opening notional gearing level. At PR19, we restricted the dividend yield for a number of companies with real RCV growth in excess of 10% and, at PR09, we assumed equity injections for three companies, including an allowance for the cost of issuance of 5% of equity raised.^{82 83}

Benchmarks

Reference to observed gearing in the water sector suggests a potentially wide range for gearing – with variation not only between companies but also variation based on how gearing is measured. As noted in the accompanying report by Professors Mason and Wright, there are some important measurement challenges associated with estimating gearing.⁸⁴

At PR19 notional gearing (60%) was below the level of actual RCV gearing of most of the water companies, as was the case at previous price reviews.⁸⁵ Our choice of notional

⁸⁰ For example, in business plans, Portsmouth Water set out £61 million of new injections of capital to support the funding of the Havant Thicket Reservoir, Affinity Water stated that it had shareholder agreement to pay no dividends from the appointed business over the period 2020-25, to enable all returns to be reinvested into the company to reduce gearing levels. South East Water indicated a base dividend below the PR19 base assumption over 2020-25 in line with its commitment to reduce gearing. Thames Water sets out in its annual performance report that it has not paid a dividend to its investors for four years, restricting its dividend to the level required solely to service the obligations of other group companies.

⁸¹ For example, SSE recently announced a rebase of its dividend from 2024 to enable significant growth across the group. In May 2020 BT suspended its dividend saving an estimated £2.5bn. Pay-outs for the following financial years were expected to be half the previous dividend level. This was done to support the rollout of full fibre broadband, expected to cost around £12bn, see [BT suspends annual dividend for first time in 36 years | Financial Times \(ft.com\)](#)

⁸² In PR19 final determinations, we identified eight companies with real RCV growth greater than 10% (Anglian Water, Hafren Dyfrdwy, Southern Water, Thames Water, Wessex Water, Affinity Water, Portsmouth Water and South Staffs Water). For these companies, we reduced the dividend yield from the base assumption of 3% to between 0% and 2.16%. Real RCV growth for Anglian Water in its CMA's PR19 redetermination was less than 10% meaning the CMA's base dividend assumption was applied in the redetermination.

⁸³ At PR09, we assumed equity injections in our financial modelling amounting to 20%, 10% and 7.5% of opening notional equity for Thames Water, Bristol Water and South East Water respectively, being the companies having largest RCV growth assumption and, as a result, weaker financial ratios.

⁸⁴ Mason R., Wright, S., '[A report on gearing, price controls, and financial resilience](#)', December 2021.

⁸⁵ We refer to 'RCV gearing' to distinguish from gearing relative to enterprise value.

gearing is set to incentivise efficient behaviour and is determined in the context of our duties (including the interests of consumers, our financing duty and long-term resilience). The CMA has expressly recognised that a regulator could in certain circumstances reasonably assume that a financeability constraint could be addressed by raising equity finance.⁸⁶ In contrast, company choices would be expected to focus on maximising the interests of companies and investors.

Average gearing relative to RCV is about 70% and beyond the level we are comfortable with for the notional company. However, the range of actual RCV gearing in the sector is wide (between 45% and 83%)⁸⁷ and gearing relative to enterprise value (for listed water companies) is typically lower than gearing relative to RCV. For listed water companies gearing relative to enterprise value is lower than the current notional gearing (enterprise value gearing is nearer to 55%, whereas average gearing relative to RCV for the three listed water companies is 66.0%).⁸⁸

We also note the CMA's conclusions in the recent energy appeals in relation to notional gearing relative to the actual gearing of companies in the sector. The CMA set out that "falling equity returns would suggest a lower level of gearing and a lower dividend yield would be appropriate. We do not agree with the appellants that GEMA must match the actual approach taken by companies in the sector – as such an approach would be a) backward looking and resistant to change, and b) a significant constraint on GEMA's ability to set price controls and test financeability in a way that best matches its duties."⁸⁹

Customer interests

In setting an appropriate capital structure, we need to take into account the interests of current and future customers. Whilst benchmark data may be useful in considering an appropriate notional structure, as noted above, company choices would be expected to focus on maximising the interests of companies and investors, whereas our choice of

⁸⁶ CMA '[Firmus Energy \(Distribution\) Limited v Northern Ireland Authority for Utility Regulation – Final determination](#)', June 2017, p. 188, paragraph 7.123. The CMA expressly recognised in the Firmus reference of 2017 that "If FE [Firmus Energy (Distribution) Limited] does face financeability issues, the UR [The Northern Ireland Authority for Utility Regulation] was not wrong to assume that FE can address this by reducing gearing to 45%."

⁸⁷ Hafren Dyfrdwy has gearing of about 45.5% at 31 March 2021 reflecting an equity injection by its owner Severn Trent Water. See Ofwat, '[Monitoring Financial Resilience](#)', slide 5

⁸⁸ The gearing relative to RCV reported as at 31 March 2021 was Severn Trent Water – 66.1% and United Utilities – 65.3%, while the equivalent enterprise value gearing figures were 54.3% and 54.9% (Source: Ofwat analysis of Refinitiv data).

⁸⁹ CMA, https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2A_publication.pdf, October 2021, p. 328, paragraph 5.1006

notional gearing needs to consider what is likely to be in the best interests of current and future customers.

5.3.2 Index linked debt

As well as the split between debt and equity, we take a view on the split between fixed rate and index-linked debt for the notional company. The use of index linked debt matches debt liabilities to revenues and so is commonly used in regulated sectors. At PR19, we assumed an opening proportion of 33% index linked debt, with incremental debt being fixed rate.

Since then, we have seen that companies have maintained significant levels of index linked debt and swaps. Therefore, we are minded to assume that the proportion of index linked debt remains constant throughout 2025-30 and that new debt raised by the notional company to support investment at PR24 is a mix of fixed rate and index linked debt. We propose to take a simplified approach in the financial model such that the proportion of index linked debt remains constant across the price control period.

Table 55.1 shows the proportion of index-linked debt reported by companies in annual performance reports. A number of companies have raised CPI linked debt through a mixture of debt and index-linked interest rate swaps. Companies reported £29.7 billion of index-linked debt in annual performance reports for 31 March 2021 (with about 10% of index-linked debt being linked to CPI or CPIH – on a post-swap basis).

Table 5.1: Index-linked debt as a proportion of net debt reported in company annual performance reports

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Sector weighted average	49%	49%	48%	49%	52%	53%
Median (sector)	61%	58%	57%	55%	54%	61%
Median (WaSCs and large WOCs)	54%	51%	50%	50%	54%	53%

Source: Table 1E, annual performance reports 31 March 2016 to 31 March 2021 reported on a post-swap basis

In section 4, we proposed placing most weight on a balance sheet approach for calculating the allowance for embedded debt. Given the proportion of index linked debt that remains outstanding across the sector, we are minded to increase the proportion of index linked debt in the notional company from the level at PR19 (when we assumed 33%).

At PR19, all index linked debt in the notional company was linked to the RPI measure of inflation. This was consistent with the majority of index linked debt issued by water companies at that time. It also reflected that 50% of opening RCV continued to be inflated by RPI. However, we are aware that companies have some CPI or CPIH linked debt (to date around 10% of index-linked debt) and, in section 6, we set out our preference for the full indexation of RCV to CPIH at PR24. We are considering how best to take this into account in our assessment of index linked debt at PR24.

Consistent with our approach to embedded debt, we recognise that the majority of index-linked debt in the opening balance sheet of the notional company will historically be linked to RPI. Going forward, it might be reasonable to assume that the notional company raises a proportion of its debt linked to CPI or CPIH. To recognise this, one approach may be to assume that the majority of debt continues to be linked to RPI whilst recognising that there may be a growing proportion of debt linked to CPI. Therefore, we could consider a hybrid RPI/CPIH index that reflects an assumption for the average mix of CPI and RPI linked debt across the control period. Alternatively, we could assume the notional company had entirely CPI or CPIH-linked debt, which would be consistent with the preferred basis for measuring inflation and with full CPIH-indexation of the RCV. We seek views on the suitability of these two approaches for the treatment of index-linked debt.

We note that Ofgem, in its recent RIIO-2 final determinations provided an additional allowance for the cost of new CPI/CPIH debt as well as an allowance for managing basis risk between RPI and CPI debt. This resulted in an additional 5-basis points to the overall cost of debt allowance.⁹⁰

5.4 Questions

Q5.1. Do you agree with the framework we have set out for determining an appropriate notional structure and PR24 and beyond?

Q5.2. Do you agree the proportion of index-linked debt should be increased and what are your views on the composition of index-linked debt for PR24?

⁹⁰ Ofgem, '[RIIO-2 Final Determinations – Finance Annex \(REVISED\)](#)', February 2021, pp 13-14, paragraphs 2.24 – 2.26

6. RCV indexation

6.1 Introduction and summary

The regulatory capital value (RCV) is a tally of historical capitalised expenditure on which regulated companies earn a return on capital. As at March 2021, the sector's RCV stood at £77bn. RCV will continue to play an important role in how we set price controls for PR24. The approach to the price control for bioresources may be different and we discuss the options being considered in our separate publication: 'Our proposed approach to funding bioresources activities at PR24'.

RCV contributes to bills in two important ways. Firstly, RCV run-off is the rate applied to the RCV which approximates the rate of asset depreciation. This amount is deducted from the RCV and is an important component of allowed revenue and hence customer bills. The allowed return is also applied to the RCV and reflects the financing costs of an efficiently-run company under our notional capital structure. RCV run-off and the allowed return are responsible for about a third and a fifth of allowed revenues, respectively.

The RCV is indexed to inflation, which protects the real value of investments. Historically indexation was to RPI, but when it became apparent that RPI was a flawed basis for measuring inflation, we began the process of transitioning to a more legitimate measure. In the development of our approach to PR19, we proposed in May 2016 to start the indexation of revenues and RCV to CPIH from 2020.⁹¹ We said that we were minded to index 50% of legacy RCV and all new RCV to CPIH, and proceeded on this basis for PR19. While acknowledging the merits of a more rapid transition, our decision recognised the importance of maintaining the trust and confidence of investors and allowing for a planned transition of existing debt. We also recognised the bill impact implied by a more rapid transition.

Significant developments since our May 2016 publication include:

- **Ofgem's** decision in December 2018 to adopt full CPIH indexation of Regulatory Asset Value in three of its formerly RPI-linked controls for RIIO-2 GT/GD/ET;⁹²
- **Ofwat** and the **CMA's** PR19 determinations concluded in December 2019 and March 2021, respectively. These exercises set out profiles for RCV growth that imply a c.60% share of CPIH-linked RCV in total RCV by March 2025; and

⁹¹ Ofwat, '[Water 2020: our regulatory approach for water and wastewater services in England & Wales](#)', May 2016.

⁹² Ofgem, '[RIIO-2 Sector Specific Methodology Annex: Finance](#)', December 2018, p.68.

- The **UK Statistics Authority** announcing its intention, in December 2020, to replace the method of calculating RPI with that used to calculate CPIH from February 2030.⁹³

In this section we suggest an evaluation framework for considering the inflation indexation of RCV and indicate our preference to adopt full indexation to CPIH from the start of PR24.

6.2 Consultation responses

Question 11.8 of our May consultation asked: "**To what extent should we further increase the share of the notional company RCV which is indexed to CPIH in our assumptions for the period 2025–2030, and how should this be implemented?**"

A majority of responses were receptive to a more rapid transition to CPIH: 11 out of 17 company responses fit into this category,⁹⁴ with the remaining six neutral rather than opposed.⁹⁵ Most supportive responses were in favour of full indexation from the start of the PR24 control period, although some did not indicate whether they favoured this over a more gradual approach. Several neutral responses argued that a gradual approach was preferable as it would reduce bill pressures and any mismatch between legacy RPI-linked debt and revenues. Yorkshire Water argued that financeability testing ought to assume CPI-linked debt following a full transition at the start of the control. United Utilities and Southern Water noted that there was uncertainty around compensation payable by companies to RPI-linked bondholders due the 2030 RPI reform (for instance in the form of an upwardly-adjusted coupon). These responses tended to argue that companies should be protected from these impacts.

6.3 Emerging thinking

We propose the following framework for assessing options for further transitioning to CPIH indexation:

- **Legitimacy:** RPI is no longer a national statistic and tends to overstate inflation as experienced by customers. We also note the Johnson Review's recommendation

⁹³ UKSA, '[A consultation on the reform to Retail Prices Index \(RPI\) Methodology](#)', March 2020.

⁹⁴ Affinity Water, Hafren Dyfrdwy, Northumbrian Water, Severn Trent Water, South West Water, Thames Water, United Utilities Water, Dŵr Cymru Cyfyngedig, Wessex Water, Yorkshire Water.

⁹⁵ Anglian Water, Sutton and East Surrey Water, South West Water, Southern Water, South Staffordshire Water, Portsmouth Water.

that regulators should "work towards ending the use of RPI as soon as is practicable".⁹⁶

- **Affordability:** All other things equal, a faster transition to CPIH indexation will initially place upwards pressure on bills because of the higher CPIH allowed return compared to its RPI equivalent. This will unwind over time due to the more slowly-growing CPIH-indexed RCV. Two responses voiced concern over bill pressures at PR24, arguing that companies should have some flexibility over implementation.⁹⁷
- **Financeability:** Mirroring the impact on affordability, the higher initial revenues from a faster CPIH transition will boost cashflow metrics; with this effect fading over time.
- **Implementation costs:** Thames Water and South East Water noted one impact of full indexation would be higher exposure to basis risk⁹⁸ in the transitional period 2025-30, and/or the cost of hedging against this.
- **Complexity:** Several responses recognised the beneficial impact which full indexation would have in terms of a more predictable RCV, and ability to retire the RPI-CPIH wedge reconciliation.

Our preliminary assessment under these criteria is summarised below in Table 6.1:

Table 6.1: Initial review of full indexation

Impact	Comments
Legitimacy	<ul style="list-style-type: none"> • Moving to full CPIH indexation would secure the fastest move away from the discredited RPI measure, and so be most aligned with the Johnson Review's recommendation on regulatory use of RPI. • As noted by several responses to our previous consultation, full CPIH indexation would enhance customer legitimacy. • We note that the proposal by two companies (United Utilities and Severn Trent) at PR19 to apply RCV run-off changes that gave effect to a full transition to CPIH indexation was supported by their customers.⁹⁹
Affordability	<ul style="list-style-type: none"> • The affordability of the PR24 package remains an important consideration, and we will keep under review the bill impact of individual policy proposals as well as the package in the round. Our indicative analysis in Appendix 2 suggests that the annual average bill increase from full indexation would lie in the range £3-£12 in nominal terms over 2025-30, based on three companies. We would expect this impact to reverse in

⁹⁶ Johnson, P., '[UK Consumer Price Statistics: A review](#)', 2015, p.62.

⁹⁷ Sutton and East Surrey Water and Water UK.

⁹⁸ ie the risk that CPI inflation protection does not cover RPI-linked interest costs

⁹⁹ Ofwat, '[PR19 Final determinations. Aligning risk and return technical Appendix](#)', December 2019, p.6.

Impact	Comments
	subsequent years as the bill impact of lower RCV indexation dominates.
Financeability	<ul style="list-style-type: none"> We have conducted illustrative analysis in Appendix 2 of this document which suggests that full CPIH indexation will materially improve cashflow metrics over PR24, albeit with slower RCV growth.
Implementation costs	<ul style="list-style-type: none"> Full indexation may involve costs incurred by companies, but there may also be benefits (e.g. from a less volatile enterprise value).¹⁰⁰ Our expectation is that any costs would be relatively modest. As noted in section 5, Ofgem proposed a 5bps allowance for basis risk mitigation and new CPIH issuance for its full CPIH switch.¹⁰¹ Our provisional view is that if compensation (e.g. RPI-linked bond re-couponing) occurs, these costs are likely to take effect from 2030, so they are best addressed as part of PR29.
Complexity	<ul style="list-style-type: none"> We expect that full CPIH indexation would have material benefits in reducing complexity. We anticipate that it would allow a clearer interpretation of the RCV, permit the retirement of the RPI-CPIH wedge reconciliation, and allow simplification of the financial model.

Therefore, our preference would be to adopt full indexation of the RCV to CPIH from the start of the PR24 period. We note that alternative options could also achieve some of these objectives, however our initial assessment is that none exhibit the same benefits across the range of proposed criteria. For instance:

- **Continuation of the PR19 approach:** The latest it would be reasonable to postpone full indexation is 2030, given the UKSA's planned reform to RPI in that year. Doing so would, however, leave the legitimacy issues and complexity of a hybrid RPI/CPIH control unaddressed over 2025-30, and there would be no financeability benefit over the PR24 period.
- **Glide path:** This would involve a Day 1 increase in the starting share of CPIH-linked RCV at PR24, trending to a full switch by 2030. We consider that such an option is less attractive, as it delays the legitimacy, simplification and financeability benefits of full indexation.

¹⁰⁰ See Oxera, '[Indexation of future price controls in the water sector](#)', March 2016

¹⁰¹ The notional share of index-linked debt is 30% in RIIO-2 vs. 33% at PR19. Source: Ofgem, '[RIIO-2 Final determinations - finance annex](#)', 3 February 2021, pp. 13-15.

6.4 Questions

Q6.1. Do you agree with our proposed framework to evaluate the transition to CPIH indexation, and our proposal to transition fully at the start of PR24?

7. Financeability

7.1 Introduction and summary

We interpret our financing duty as a duty to secure that an efficient company with the notional capital structure can finance its functions, in particular by securing reasonable returns on its capital. In doing so, it will be able to raise finance on reasonable terms while protecting the interests of current and future customers.

Our financeability assessment considers whether, when all of the individual components of our determination are taken together (including totex, allowed return and retail margin, PAYG rates and RCV run-off), an efficient company with the notional capital structure will be able to generate cashflows sufficient to meet its financing needs. The financeability assessment is a test of the sufficiency of cashflows from the price control package as a whole. We do not see the financeability assessment as a test for whether an individual component of the price control package, such as the allowed return (or the components of it), is reasonable.

We propose the following high-level approach to assessing financeability at PR24, which draws on that adopted at past price reviews. Our intention is to:

- consider a notionally structured company with an efficient level of expenditure. Risks associated with the choice of actual capital structure should remain with investors and not be transferred to customers;
- assess financeability before the revenue impact of any adjustments relating to the previous price review periods (for example, from reconciliation mechanisms) to ensure incentives for companies are not diluted and customers do not compensate companies for prior poor performance;¹⁰²
- look at a suite of financial ratios, looking at the average and trends of those ratios;
- require companies to provide Board assurance that they are financeable by reference to the notional company and that the actual company structure remains financially resilient;
- set an assumption for notional gearing and dividend yield at the start of the period, although we may adjust dividends or provide for new equity where gearing strays significantly from the notional level because of substantial real RCV growth;
- where companies, or ourselves, identify a financeability constraint that is due to a shortfall in cash flows for reasons other than increases to notional gearing as a

¹⁰² Reconciliation adjustments to revenue in the draft and final determination are excluded before considering financeability. However, midnight adjustments (i.e. those made at the inception of the control period) to RCV do form part of the assessment.

result of financing RCV growth, we may also consider the use of revenue advancement. But we would expect to see clear reasoning for doing so, with compelling evidence that it would be in the best interests of current and future customers.

We propose to carry out our financeability assessment in our financial model which companies will complete as part of their business plan submissions. The PR24 financial model is under development and will accompany our draft methodology to be published in summer 2022.

7.2 Consultation responses

We did not ask a specific question in relation to financeability in our May consultation, although we did explain the challenges to our PR19 financeability assessment.¹⁰³ A number of companies referred to financeability in their responses to question Q11.6 related to the capital structure of the notional company.

- **Financeability analysis and the notional company:** Five companies argued that the notional company assumptions should not be used to solve a financeability constraint referring to the decisions in the recent CMA PR19 redeterminations.¹⁰⁴ The CMA considered the allowed return on capital was the primary factor in ensuring that an efficient firm can finance its functions and that the financeability analysis provides a cross-check on the allowance for the return on equity.
- Nevertheless, Yorkshire Water set out the part that equity can play in addressing issues with headroom in the financeability assessment, stating that “Whilst a reduction in notional gearing can be considered a potential mitigating solution for sensitivity analysis on financeability, it should not be considered a base assumption for the notional structure.”
- Similarly, United Utilities said that the use of financial levers remains a useful tool for financeability, stating “With regard to the use of revenue advancement via PAYG and/or RCV run-off, notwithstanding the CMA’s position (which mirrors that of the ratings agencies, Moody’s and Fitch), we do think this tool could remain beneficial to customers at PR24 in managing ‘in-period’ revenues and cashflows. In particular, from a ‘real world’ financeability perspective the use of such a tool might be beneficial to maintain FFO/debt at acceptable levels (S&P’s prime credit metric)

¹⁰³ First, that in 2018 two credit rating agencies tightened their guidance on financial ratios for English and Welsh water companies, in response to a perceived increase in political risk. Second, the CMA’s PR19 redetermination did not support our approach of advancing future cashflows as a tool to resolve financeability constraints.

¹⁰⁴ Anglian Water, Northumbrian Water, United Utilities, Wessex Water and Yorkshire Water.

and/or improve dividend cover thus aiding equity financeability. However, such tools should not be over-used such that they are detrimental to longer-term financial resilience.”

- **Aiming-up:** Bristol Water and Yorkshire Water also referred to the consideration that financeability was one of the factors in determining whether to 'aim-up' the allowed return on equity.

7.3 Emerging thinking

7.3.1 Relevant financial ratios

We intend to retain a basket of financial metrics as part of our assessment of financeability, comprising debt ratios, equity ratios and other metrics.

Table 7.1 shows the ratios we collect annually from companies in annual performance reports. We do not propose to amend our approach from PR19, placing most weight on the key measures of indebtedness and the ability to service and repay debt which are: **gearing**, **adjusted interest cover** and **funds from operations to net debt** ratios.¹⁰⁵ We propose to look at the average of each metric over the review period and the trend over the period.

¹⁰⁵ In recognition of the role played by credit rating agencies, we propose to also consider the adjusted interest cover and FFO/net debt in our assessment of financeability, which we refer to as 'alternative versions' of these two metrics. The alternative adjusted interest cover ratio adjusts the funds from operations for any surplus pay-as-you-go revenue over operating expenses, replicating the adjustment made by Moody's. The adjusted FFO/net debt ratio includes the accretion of index-linked debt in the calculation of post interest funds from operations, replicating the adjustment made by S&P.

Table 7.1: Financial metrics

Financial metric	Basis of calculation	What does the metric calculate?
Gearing	$\frac{\text{Net debt}}{\text{RCV}}$	Gearing measures a company's capital structure and level of indebtedness
Interest cover	$\frac{\text{FFO (pre interest)}}{\text{Cash interest}}$	Interest cover measures a company's ability to meet interest payments from operational cash flows.
Adjusted cash interest cover ratio (ACICR)	$\frac{\text{FFO (pre interest)} - \text{RCV run off}}{\text{Cash interest}}$	ACICR is a more conservative measure than interest cover. It provides an indication of interest coverage assuming companies cannot reduce the RCV run-off.
Funds from operations (FFO) / Net debt	$\frac{\text{FFO (post interest)}}{\text{Net debt}}$	FFO/Net debt measures a company's debt burden relative to their operational income.
Dividend cover	$\frac{\text{Profit after tax}}{\text{Dividends declared}}$	Dividend cover measures a company's capacity to pay dividends at current levels.
Retained cash flow (RCF)/Net Debt	$\frac{\text{FFO(post interest)} - \text{dividends paid}}{\text{Net debt}}$	RCF/Net debt measures a company's debt burden relative to their operational income after paying interest and dividends.
Return on capital employed (RoCE)	$\frac{\text{EBIT} - \text{tax}}{\text{RCV}}$	RoCE can be compared against the allowed return on capital. It presents the returns made by the providers of both debt and equity finance.
Return on regulatory equity (RoRE)	$\frac{\text{EBIT} - \text{tax} - (\text{cost of debt} * \text{net debt})}{\text{equity component of the RCV}}$	RoRE measures the return due to shareholders/equity assumed in the notional capital structure. It allows us to assess the returns earned by equity providers against the allowed return on equity.

Notes: Net debt represents borrowings less cash and excludes any pension deficit liabilities.

Funds from operations (FFO) is cash flow from operational activities and excludes movements in working capital.

Cash interest excludes the indexation of index-linked debt.

7.3.2 Potential financeability at PR24

We intend to maintain our approach of assessing financeability on the basis of the notional company. We consider that there are a number of factors that may improve financeability at PR24 (compared to PR19) with a full transition to CPIH potentially enhancing the cash flows arising from the allowed return:

- the level of the real allowed return compared to the inflationary element will be dependent on **the extent to which the RCV is indexed by CPIH**. A higher proportion of CPIH-inflated RCV will result in higher in-period real returns (than

when a portion is indexed to RPI – as was the case at PR19) because of the RPI-CPIH wedge;

- we expect to see **a reduction in the embedded cost of debt** as historical debt at higher interest rates matures and companies take on more debt at lower interest rates; and
- **choices we may make regarding the notional capital structure** will affect the level of certain financial ratios. For example, lower notional gearing and/or a higher proportion of index-linked debt would reduce the balance of debt and the cash interest payable in certain financial ratios.

If our in-the-round assessment of the relevant financial ratios suggests that the notional company would not be financeable, we need to consider the potential adjustments to the price control package appropriate to restore financeability. In doing so, we propose to consider the underlying cause of the financeability constraint in determining the most appropriate solution.

Our preferred approach, particularly where we identify a financeability constraint for a specific company arising primarily as a result of a large investment programme impacting on the level of notional gearing, or where there is limited headroom when sensitivity testing of the financial metrics, is to consider equity solutions. Equity has an important role in addressing financeability constraints and where we see notional gearing within the financial model straying materially above the opening assumption, we propose to take steps to reduce this to a level consistent with the opening level, by the end of the price control period.

Additional equity may be in the form of retained earnings or further capital raising. As noted above, at PR19 we restricted the dividend for companies with real RCV growth in excess of 10%. Consistent with our approach in PR19, we propose to set a base dividend policy for the sector commensurate with the allowed return on equity.¹⁰⁶ We consider it reasonable to assume that companies retain a proportion of this return because a proportion of shareholder return is generated from inflationary growth of the RCV, and real RCV growth will enhance future returns.

Where companies, or ourselves, identify a financeability constraint that is due to a shortfall in cash flows for reasons other than increases to notional gearing because of financing RCV growth, we may also consider the use of revenue advancement (for instance through PAYG and RCV run-off rates). Where companies propose to advance

¹⁰⁶ In PR19, the base return on equity was 4.19% and our financeability assessment assumed a notional dividend yield of 3%.

revenue, we would expect to see clear reasoning for doing so, with compelling evidence that it would be in the best interests of current and future customers.

7.4 Questions

Q7.1. Do you agree that financeability is likely to be less constrained at PR24 than at PR19?

Q7.2. Do you agree that real RCV growth should be funded through a combination of debt and equity such that gearing of the notional company remains consistent with the notional gearing set at the start of the control period?

Appendix 1. Questions for stakeholders

Q2.1. Do you agree with our principles for reviewing old and new reconciliation mechanisms and do you have suggestions for further reconciliation mechanisms which could be retired for PR24?

Q2.2. Do you have any comments on our proposed approach to producing risk ranges, including but not limited to:

- a. Notional risk ranges for the efficient notional company prepared by Ofwat; and
- b. Company-specific risk ranges produced by companies.

Q3.1. How should we reflect the period affected by Covid-19 in our approach to estimating beta?

Q3.2. Noting the impact of gearing on betas discussed in the report by Professors Mason and Wright, how should we adapt our approach to specifying beta for a company at the notional gearing?

Q3.3. How should we convert RPI-linked yields into their CPIH-linked equivalents when deriving a RFR point estimate?

Q4.1. Do you agree with our proposed role for benchmark bond indices in cross-checking a cost of debt allowance based on a balance sheet approach?

Q4.2. Given the persistent issuance discount of water company bonds against the iBoxxx A/BBB index, how should this be reflected in our new debt allowance-setting?

Q4.3 Do you agree with our proposal to restrict company specific adjustments to reflect only factors due to small size, and to remove the benefits test?

Q5.1. Do you agree with the framework we have set out for determining an appropriate notional structure and PR24 and beyond?

Q5.2. Do you agree the proportion of index-linked debt should be increased and what are your views on the composition of index-linked debt for PR24?

Q6. Do you agree with our proposed framework to evaluate the transition to CPIH indexation, and our proposal to transition fully at the start of PR24?

Q7.1. Do you agree that financeability is likely to be less constrained at PR24 than at PR19?

Q7.2. Do you agree that real RCV growth should be funded through a combination of debt and equity such that gearing of the notional company remains consistent with the notional gearing set at the start of the control period?

Appendix 2. Indicative impacts of full CPIH indexation

This appendix sets out the results of preliminary modelling to understand the incremental impact on financeability and customer bills of a switch to full CPIH indexation at the start of the PR24 control. We have focused on two metrics:

- **Adjusted Cash Interest Cover Ratio (ACICR):** This metric is an important measure of financeability. At PR19 final determinations we targeted an ACICR of about 1.5x for the notional company.
- **Average nominal bill:** We focus on the nominal perspective as this is how bills are experienced by the bill payer.

There remain uncertainties about the scale of the investment programme, and other cost factors for PR24. Rather than attempt to forecast such factors in our appraisal of different RCV indexation scenarios, we use our populated PR19 financial models from final determinations under different scenarios of starting CPIH-linked RCV. The Ofwat and CMA PR19 final determinations imply that c.60% of the RCV will be indexed to CPIH by 31 March 2025. We accordingly model three scenarios:

- **60% (a)** – This scenario aims to approximate ACICR and customer bills if we did not reprofile cashflows to achieve our 1.5x ACICR target.
- **60% (b)** – This scenario contains the same assumptions as (a), except that in cases where average ACICR is lower than 1.5x on average over the 2020–25 period, we perform cashflow reprofiling. We adjust the balance of future RCV and current-period revenue to achieve cashflows consistent with a period average 1.5x ACICR.
- **100%** – This scenario assumes a starting CPIH-linked RCV share of 100% and reprofiling as described in Scenario '60% (b)' if ACICR is on average below 1.5x for the period.

Below we focus on scenario '60% (b)' as the baseline, because at PR19 we carried out revenue reprofiling for 12 out of 17 companies (including the ones featuring in this analysis) to achieve a 1.5x ACICR for the notional company (because the ACICR prior to reprofiling was lower).¹⁰⁷ We show the results for scenario 60% (a) – i.e. without revenue reprofiling – as a sensitivity.

We have focused on three companies designed to provide reasonable coverage of the different types of companies in the sector: one highly-covenanted WaSC (Thames

¹⁰⁷ Ofwat, '[PR19 final determinations: Aligning risk and return technical appendix](#)', Table 6.4, Table 6.5.

Water), one standard corporate WaSC (Wessex Water), and one WoC (Sutton and East Surrey Water).

As can be seen from Table A4.2 below, the switch to 100% CPIH indexation provides a significant boost to ACICR compared to the 60% indexation scenarios, and all three companies show an ACICR at or above 1.6x in each year with full CPIH indexation.

Table A4.2: Adjusted Cash Interest Cover Ratio

	Starting CPIH RCV (%)	2020-21	2021-22	2022-23	2023-24	2024-25	Average
Thames	60% (a)	1.44	1.44	1.43	1.43	1.45	1.44
	60% (b)	1.51	1.51	1.49	1.49	1.50	1.50
	100%	1.66	1.64	1.62	1.62	1.65	1.64
Wessex	60% (a)	1.39	1.39	1.40	1.41	1.43	1.40
	60% (b)	1.48	1.49	1.50	1.50	1.53	1.50
	100%	1.60	1.60	1.61	1.62	1.65	1.61
SES Water	60% (a)	1.45	1.42	1.44	1.48	1.54	1.47
	60% (b)	1.48	1.45	1.47	1.51	1.58	1.50
	100%	1.65	1.61	1.62	1.66	1.74	1.66

From Table A4.2 below, we see the impact on household bills. The average household bill impact from moving to the 100% CPIH scenario from the baseline of scenario 60% (b) is as follows: Thames (£8), Wessex (£12), and SES Water (£3).

Table A4.2: Nominal household bills per year

	Starting CPIH RCV (%)	2020-21	2021-22	2022-23	2023-24	2024-25	Average
Thames	60% (a)	£380	£396	£407	£413	£422	£404
	60% (b)	£384	£399	£410	£416	£424	£406
	100%	£394	£410	£419	£420	£429	£414
Wessex	60% (a)	£413	£428	£448	£455	£468	£442
	60% (b)	£418	£433	£453	£459	£472	£447
	100%	£425	£443	£466	£474	£488	£459
SES Water	60% (a)	£184	£187	£190	£191	£191	£189
	60% (b)	£184	£188	£191	£191	£191	£189
	100%	£188	£191	£193	£194	£194	£192

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