PC21 Draft Determination
NI Water Response

Annex 7.1 - Allowed Rate of Return
(Economic Insight)

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Economic Insight Ltd

ALLOWED RATE OF RETURN AT PC21

Report for Northern Ireland Water

Allowed Rate of Return at PC21

This report for Northern Ireland Water (NI Water) sets out our analysis of the Utility Regulator's (UR's) approach at draft determinations to the allowed rate of return. We find that there is a strong rationale for the UR to update its cost of equity estimates to reflect the Competition and Markets Authority's (CMA's) provisional findings on total market return and the risk-free rate. Doing so implies an updated cost of equity of 2.97%-3.17%.

1.1 Overview

This section addresses NI Water's allowed rate of return. For NI Water, this is set based on a combination of its actual cost of debt and a notional cost of equity. As a consequence, the main focus of this analysis is on the determination of the allowed cost of equity. All returns figures are expressed in RPI terms.

Our main findings are as follows.

- The UR's approach to the cost of equity draws heavily on regulatory precedent from the CMA, especially for total market return and the risk-free rate. Given the availability of the CMA's provisional findings on water company redeterminations, there is a good case for updating the UR's estimates of total market return and the risk-free rate to reflect this.

- On equity beta, the UR's draft determination includes a relative risk assessment for NI Water versus companies in England and Wales that is not reflected in the CMA's provisional findings. There is therefore a good case for retaining the UR's estimate of beta.

- The CMA selected point estimates that lie above the mid-point of its ranges for cost of equity parameters. This was based on the need to secure finance for large investment programmes, asymmetric risk and financeability. The UR should consider the extent to which the arguments for aiming up are applicable to NI Water.

- Updating the UR's draft determination figures for the mid-point of the CMA's ranges for total market returns and the risk-free rate implies a cost of equity of 2.97%, while applying the CMA's point estimates implies a cost of equity of 3.17%.

We set out: (i) an overview of the UR's draft determination of the allowed rate of return; (ii) a comparison of the UR's draft determination with Ofwat's approach at PR19 and the CMA's approach for water company appeals; and (iii) our assessment of the implications for NI Water.

1.2 The UR's draft determination

The UR introduced a time-varying rate of return, reflecting annual variation in NI Water's cost of debt. As we set out in the table below, the UR has opted for an allowed rate of return of 1.89% in 2021-22, falling to 1.55% in 2026-27 (Vanilla). This is based on notional gearing of 50%, post-tax cost of equity of 2.71% and cost of debt of 1.08% in 2021-22 falling to 0.39% in 2027-27.[1] Relative to PC15, this involves material falls in both the allowed costs of debt and equity and therefore the overall allowed rate of return.

Table 1: Cost of capital for PC21

Year	Gearing	Post-tax cost of equity	Cost of debt	Vanilla WACC
2021-22	50%	2.71%	1.08%	1.89%
2022-23	50%	2.71%	0.91%	1.81%
2023-24	50%	2.71%	0.76%	1.74%
2024-25	50%	2.71%	0.61%	1.66%
2025-26	50%	2.71%	0.48%	1.59%
2026-27	50%	2.71%	0.39%	1.55%

Source: PC21 Draft Determination

As described above, the allowed cost of debt is based on projections of NI Water's actual debt costs. The allowed cost of equity is based on recommendations from a March 2020 First Economics report, summarised in the table below.[2]

Table 2: Cost of equity for PC21

Parameter	Value
Gearing	50%
Risk-free rate	-2.25%
Market return	5.50%
Equity beta	0.64
Post-tax cost of equity	2.71%

Source: PC21 Draft Determination, First Economics report

Relative to PC15, the fall in the allowed cost of equity is driven by a combination of lower risk-free rate and market return. As we set out below, in practice, the values for the risk-free rate and total market return draw on the then most recent regulatory precedent from the CMA's NATS re-determination, while the estimate for equity beta

[1] *Annex A – Financing Investment.' p.9-10.*
[2] *'PC21: NI Water's Cost of Capital.' First Economics (March 2020); p.11.*

draws on market data for equity beta from listed English water companies, alongside a relative risk assessment.

1.3 Comparison of the UR's draft determination with water sector precedent

We now compare the UR's draft determination on the allowed rate of return with relevant water sector precedent, namely:

- Ofwat's December 2019 final determination of the allowed rate of return for water companies in England and Wales at PR19; and
- the CMA's September 2020 provisional findings on the appeals of Anglian Water, Bristol Water, Northumbrian Water and Yorkshire Water against their PR19 final determinations.

In setting out the CMA's conclusions, we have distinguished between its point estimate and the mid-point of its range for each parameter. This is because the CMA made a deliberate choice to select point estimates that were above the mid-point of its range, on the grounds of "significant investment required within the sector over AMP7 and beyond, in particular on projects that help to control and prevent the impacts of climate change", alongside "reasons specific to this determination, related to asymmetry and financeability, which justify a degree of caution against setting the cost of capital too low". On the cost of equity, the CMA picked point estimates that were midway between the mid-point and top of its range, on the grounds that estimates of these parameters are more likely to suffer from error than cost of debt estimates.[3]

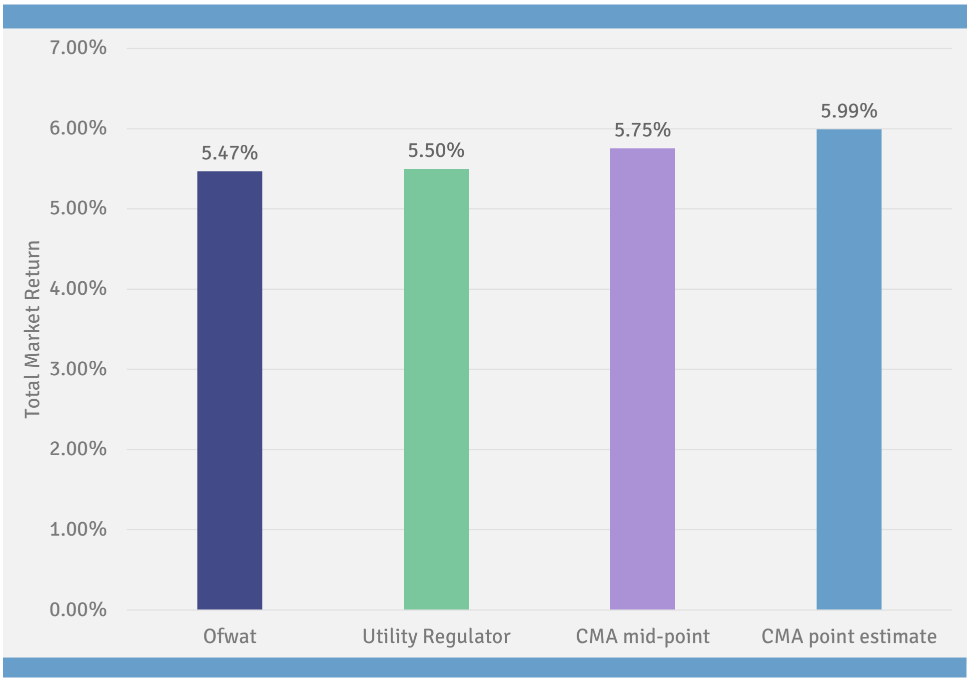
Total market return

The figure overleaf summarises total market return determinations by Ofwat, the UR and the CMA (on an RPI basis). These estimates were derived as follows:

- Ofwat's estimate of 5.47% was based on a combination of: (i) data on historical equity returns; (ii) ex-ante analysis (using historical data to forecast future returns); and (iii) forward-looking analysis based on dividend discount models.
- The UR's estimate of 5.50% was based on regulatory precedent examined by First Economics, the most recent of which was, at the time, the CMA's re-determination of NATS' price control. This was primarily based on data on historical equity returns.
- The CMA's point estimate of 5.99% is also primarily based on data on historical equity returns. The higher estimate relative to the NATS re-determination is due to a combination of the CMA's decision to select a higher point estimate and its placing of greater weight on estimates using alternative inflation data.

[3] *'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations: Provisional Findings.' Competition and Markets Authority (September 2020); para. 9.674.*

Figure 1: Total market return



Source: Economic Insight analysis of Ofwat, UR and CMA regulatory determinations

Risk-free rate

The figure overleaf summarises risk-free rate determinations by Ofwat, the UR and the CMA (on an RPI basis). These estimates were derived as follows.

- Ofwat's estimate of -2.35% was based on yields on 15-year index-linked gilts (September 2019 average), adjusted for market implied rate rises over 2020-25.[4]

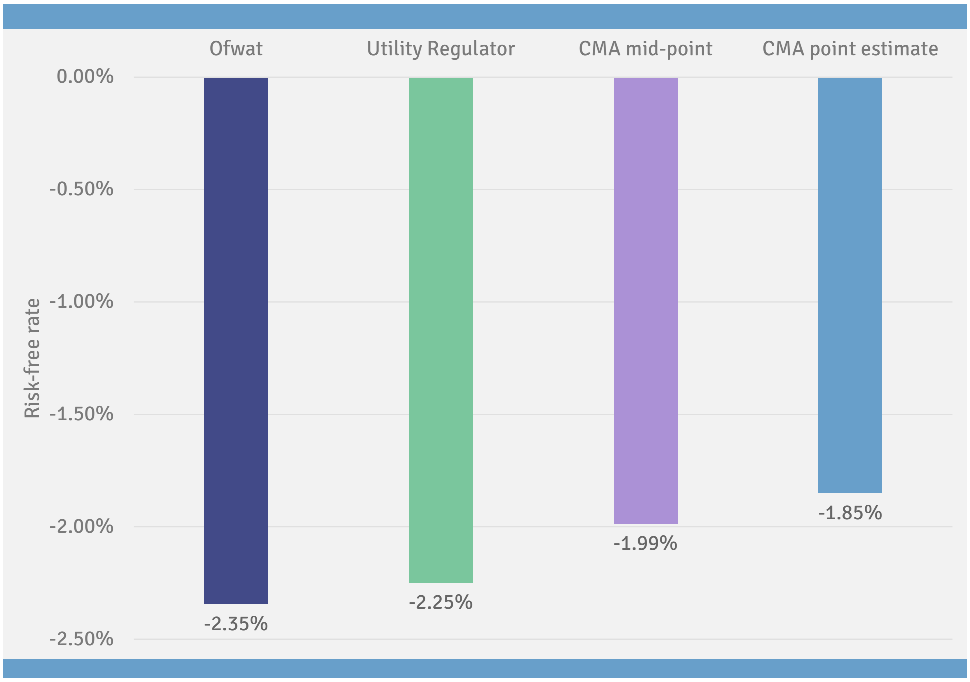
- The UR's estimate of -2.25% was based on regulatory precedent examined by First Economics, the most recent example being the CMA's -2.25% risk-free rate from the NATS re-determination. This was also primarily based on index-linked gilt yields.[5]

- The CMA's estimate of -1.85% for water company appeals was based on a combination of: (i) 20-year index-linked gilt yields (180-day trailing average to end July 2020); and (ii) two indices of non-gilt AAA-rated bond yields over the same time period.

While the UR's and Ofwat's estimates were similar at -2.25% and -2.35% respectively, the CMA's estimate is materially higher. In addition to the CMA's different approach to selecting its point estimate, this also reflects the weight that the CMA attached to non-government bonds. Importantly, the CMA concluded that the yield on index-linked gilts was likely to *understate* the true risk-free rate. This was because "government can borrow at rates substantially lower than even higher-rated non-government market participants", meaning that "the yield on ILGs [index-linked gilts] is likely to sit below the 'true' estimate of the theoretical RFR [risk-free rate], if the RFR is expressed as the yield on a 'zero beta' asset".[6]

[4] *'PR19 final determinations: Allowed return on capital technical appendix.' Ofwat (December 2019); p.38.*
[5] *'PC21: NI Water's Cost of Capital.' First Economics (March 2020); p.11.*
[6] *'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water*

Figure 2: Risk-free rate



Source: Economic Insight analysis of Ofwat, UR and CMA regulatory determinations

Equity beta

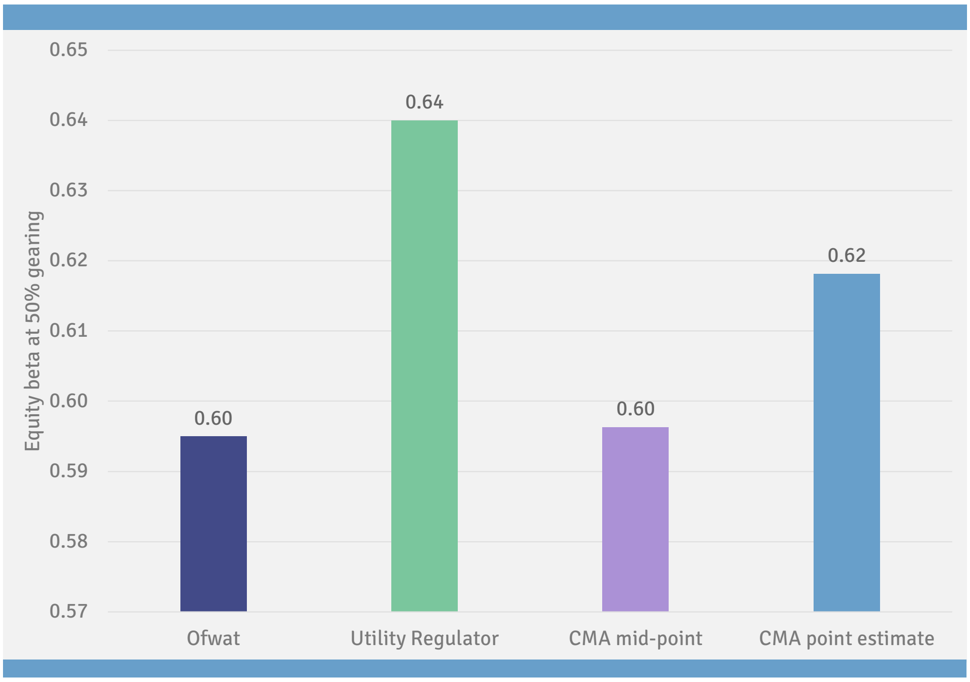
The figure overleaf summarises equity beta determinations by Ofwat, the UR and the CMA. Since the Ofwat and CMA determinations were based on notional gearing of 60%, we have recalculated equity beta at 50% gearing, based on Ofwat's and the CMA's conclusions on asset and debt beta. The UR opted for a slightly higher equity beta estimate (0.64) than either Ofwat (0.60) or the CMA (0.60). All of the estimates of equity beta were based on market data for listed water companies in England and Wales (Severn Trent and United Utilities). Differences between Ofwat and the CMA mainly arise because of the CMA's different approach to picking a point estimate, since the mid-point of the CMA's range was the same as Ofwat's estimate.

The UR's determination, however, also took account of differences in systematic risk between NI Water and companies in England and Wales. First Economics, advising the UR, concluded that NI Water was exposed to slightly more risk than companies in England and Wales. This was because, although NI Water enjoyed similar protections against demand risk, NI Water's longer control period (six years, compared with five in England and Wales) exposed it to greater cost risk and its comparatively small regulatory capital value (RCV) relative to totex meant that its operational gearing was higher (with an RCV-to-totex ratio of around four, compared to around seven for companies in England and Wales). On this basis, First Economics concluded that a beta estimate towards the upper end of the range of 0.58-0.66 was appropriate.[7]

Services Limited price determinations: Provisional Findings.' Competition and Markets Authority (September 2020); para. 9.135.

[7] *'PC21: NI Water's Cost of Capital.' First Economics (March 2020); p.6.*

Figure 3: Equity beta at 50% gearing



Source: Economic Insight analysis of Ofwat, UR and CMA regulatory determinations

1.4 Implications for NI Water

Overall, we consider the implications of our review for NI Water's allowed rate of return are as follows.

- On total market return and the risk-free rate, the UR's estimates were primarily derived from recent regulatory precedent in the CMA's NATS re-determination. Given that the CMA's provisional findings on water company appeals are now available, there is a strong case for the UR to update its findings to reflect this.

- On equity beta, the CMA's findings for water companies in England and Wales do not reflect the assessment of relative risk underpinning the UR's selection of an equity beta of 0.64. This suggests that there is a good case for maintaining the estimate from the UR's draft determination.

- The CMA's rationale for picking a point estimate for the cost of equity above the mid-point of its range was: (i) the need to attract finance for large investment programmes; (ii) asymmetric risk; and (iii) financeability. The UR should consider the extent to which the arguments for aiming up are applicable to NI Water.

As such, the table overleaf sets out the implied cost of equity when the UR's draft determination calculations are updated to include (i) the CMA mid-points and (ii) point estimates for total market return and risk-free rate. This suggests a cost of equity of 2.97% based on the mid-point and 3.17% based on the point estimate.

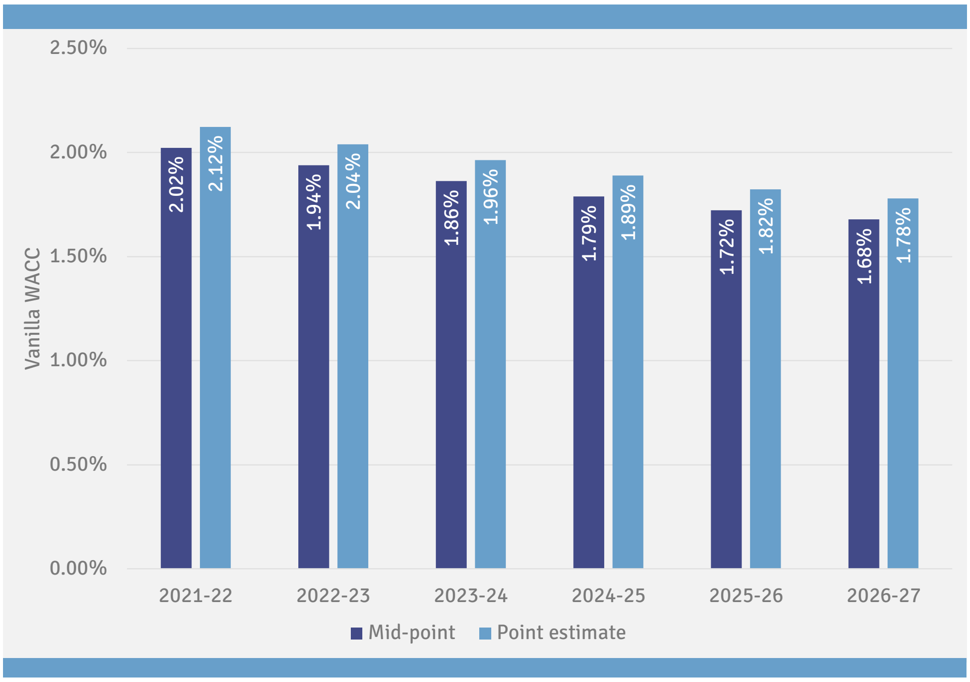
Table 3: Cost of equity incorporating updated CMA total market return and risk-free rate

Parameter	CMA mid-point	CMA point estimate
Total market return	5.75%	5.99%
Risk-free rate	-1.99%	-1.85%
Equity beta (UR value)	0.64	0.64
Cost of equity	2.97%	3.17%

Source: Economic Insight analysis of UR and CMA determinations

The figure below summarises the implications of these updated cost of equity estimates for the overall Vanilla WACC across PC21. These suggest an average Vanilla WACC of 1.84% based on the CMA's mid-points and 1.94% based on the CMA's point estimates.

Figure 4: Vanilla WACC incorporated updated CMA total market return and risk-free rate



Source: Economic Insight analysis of Ofwat, UR and CMA regulatory determinations

In addition to considering the extent to which arguments for aiming up on the allowed rate of return apply to NI Water's current circumstances, the UR should also consider whether this is affected by the possibility that NI Water may be given access to alternative sources of finance in the future. This is because of the risk that too low a rate of return could limit NI Water's attractiveness to investors, and therefore curtail its access to such sources of finance, especially to the extent that a lower return is 'baked in' by precedent at PC21. In this context, we also note that changes to NI Water's sources of finance could require wider revisions to the approach to setting the allowed rate of return. For example, it might be appropriate to set the allowed return on debt on a notional rather than an actual basis, to provide incentives for efficient debt management.

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