

Response to the equity market return consultation by Ofgem for RIIO ED1

Report prepared for Centrica¹

January 2014

Executive Summary

This short report is in response to the Ofgem consultation paper on the equity market return, issued on 6 December 2013. The report is split into two sections which:

- 1) consider the methodological approach and quantitative evidence on the cost of equity; and
- 2) look at cross checks through a mixture of quantitative and qualitative evidence.

The table below shows the equity market returns given by different regulatory precedent. The final column is based upon examination of market evidence relative to the decision made by Ofgem at the time of the decision (for DPCR4, GDPCR, TPCR4 and DPCR5) and what the equivalent interpretation would be based upon current market evidence.

Table E.1: Total equity market return estimates, based on historical approach

	WPD proposal	Ofgem central estimate for RIIO ED1	Ofgem offshore IDC minded-to position	CC NIE provisional	Ofgem RIIO GD1/T1	CAA Q6 Policy Decision	RIIO ED1 based upon previous Ofgem decisions*
Risk-free rate	2.00%	1.60%	-0.30%	1.25%	2.00%	0.50%	0.80%
Equity Risk Premium	5.25%	5.25%	4.40%	4.75%	5.25%	5.75%	5.65%
Total Market Return	7.25%	6.85%	4.10%	6.00%	7.25%	6.25%	6.45%

Source: CC, Ofgem, CEPA analysis

This analysis is set against strong investor appetite for equity returns in regulated infrastructure assets, given the increasing perception of low risk and the low likely returns from alternative assets.

Our analysis leads us to the following conclusions in response to this consultation.

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Consistency of methodology

The RIIO GD1/ T1 cost of equity allowance was overly generous and its interpretation of market evidence was inconsistent with previous Ofgem price controls and its post-2003 established methodology. In RIIO GD1/T1 Ofgem allowed a Total Market Return (TMR) equal to the DPCR5 TMR, despite evidence on the risk-free rate, TMR and volatility pointing to a lower figure. In the absence of a change in a methodological approach, this must be assigned to a change of interpretation by Ofgem.

The introduction at RIIO GD1/ T1 of the cost of debt indexation mechanism, which was accepted by all companies, reduces interest rate risk for companies, whilst removing headroom costs for consumers. We support the continued use of cost of debt indexation for RIIO ED1.

Applying the same approach as previous Ofgem price control decisions prior to RIIO would point to a TMR of 6.45% after a 0.4 percentage point downward adjustment for a change in RPI inflation estimate, which is consistent with the top half of the Competition Commission (CC) range for Northern Ireland Electricity (NIE) and the Smithers & Co (2003) TMR range.

We cross-check these findings using both qualitative and quantitative data. For example, the methodology which gives a 6.45% TMR for CEPA's comparative analysis is based on price control decisions relative to observed market evidence at the time, where decisions were made at times with greater volatility than at present. This means analysis based on quantitative data alone may give a conservative estimate, and thus the TMR may be below 6.45%.

Ofgem's central TMR estimate of 6.85% for RIIO ED1 is inconsistent with recent regulatory determinations of other regulators. The Civil Aviation Authority has selected a TMR of 6.25% for the forthcoming Q6 price control. This position was set out on 10th January 2014, so reflects an up to date assessment and was 50bps lower than their decision prior to the NIE provisional determination. Ofgem's TMR point estimate is also inconsistent with the range determined most recently by Ofcom or the Office of Rail Regulation.

From a consistency perspective, Ofgem has explicitly arrived at a TMR of just 7.3% in nominal terms for Interest During Construction (IDC) for offshore transmission². An equity beta of below 0.9 is used despite additional risks relative to regulated (onshore) gas and electricity networks, such as a less mature regulatory regime, a degree of construction risk and greater technological risks. Consistency is vital, but there is also now regulatory precedent of Ofgem's own to support a lower cost of equity.

Cost of equity parameters

For the risk-free rate, the use of a ten year average of ten year maturity Index Linked Gilts (ILGs) has been used by Ofgem and other regulators and does not, by definition, rely on

² 4.1% in real terms using a 3.2% RPI inflation estimate.

contemporary data. The CC risk-free rate of 1.25% is above the long-term average (c.1.0%) and above estimates using the spot rate adjusted for expected forward movements in this spot rate³. A real risk-free rate of 1.0%, prior to any adjustment for a new estimate of RPI inflation, is consistent with Ofgem's historic evidence based approach.

For the TMR, long-term historic data from Dimson, Marsh and Staunton (DMS) and Barclays is used in arriving at a market derived TMR estimate of 5.98% based on CEPA analysis of previous Ofgem decisions, using a 2.70% inflation assumption throughout. The change in inflation expectations from Ofgem would lead to a 40bps falls in the TMR estimate to 5.58% without any headroom⁴. A TMR of 6.45% is consistent with Ofgem's pre-RIIO decisions and this may be a conservative estimate based on cross checks (e.g. Market Asset Ratio premia).

Implications for Ofgem's consultation

The CC mid-point of the TMR range for the NIE case is the same as used for the Bristol Water and Stansted airport decisions. We support the use of a point estimate from the mid-point of the range rather than the upper bound.

We disagree with the two central tenets of the Ofgem consultation paper, namely that the CC places too great an emphasis on contemporaneous information and adoption of a lower TMR than 6.85% would represent a change in methodology for Ofgem. It would in fact utilise the same methodology and use an interpretation consistent with Ofgem decisions prior to RIIO GD1/T1.

An inflation adjustment of 0.4 percentage points is well justified and supported by evidence, so this amount should be deducted from the cost of equity. A 0.4 percentage point change in inflation estimate would bring our estimate of the TMR down to 6.45%.

Interactions with other elements of the cost of capital

Ofgem's advisers (Imrecon/ECA and Smithers & Co) have pointed to an equity beta well below 0.9⁵. Ofgem's own analysis finds that evidence supports an equity beta of 0.40-0.75. Our analysis is consistent with such a range.

We do not believe the CC provisional determination warrants reassessment of the cost of debt indexation model and find that the 'halo effect' still remains. Whilst this means that the index may be overly generous, we believe indexation brings significant benefits to companies and consumers and should be used for RIIO ED1.

Summary

In terms of the appropriate cost of equity, we believe application of Ofgem's methodology and a consistent interpretation of its outputs would yield a TMR of 6.45%, comprised of a risk-free rate of 0.80% and an ERP of 5.65%. If this was combined with an equity beta of 0.75, this

³ We support use of the former approach i.e. a greater reliance on historic market evidence.

⁴ Ofgem has included headroom of 88bps in our sample of previous decisions.

⁵ See the RIIO Financeability Study and Smithers & Co (2006) report.

would give a cost of equity of c.5.0%. Based on an average Regulated Asset Base (RAB) of £22bn, each 100bps increase in the cost of equity would lead to an increase in consumer bills in real terms of £77m per annum (or £0.6bn over RIIO ED1), but also have knock-on effects for RIIO GD2 and T2. A figure lower in the CC range is justified, based on cross checks of market evidence and examination of regulatory precedent.

1. QUANTITATIVE ASSESSMENT OF THE COST OF EQUITY

Before responding to the questions posed by the Ofgem consultation regarding appropriate equity market returns, we address the implicit assumptions underlying the consultation questions. These assumptions are central to the framing of the consultation and to any subsequent decisions. There are two items which we believe are key:

1. the Competition Commission (CC) provisional determination for Northern Ireland Electricity (NIE) is characterised as '*giving significant weight to contemporary market evidence*⁶'; and
2. Ofgem's discussion around a '*change*' of methodology to estimating the appropriate equity returns if moving towards the CC range.

On point 1:

While there is some ambiguity to the phrases 'significant' and 'contemporary', we disagree that the CC relies upon contemporary information to too great an extent. An example of this is the selection of the risk-free rate. The CC note that its estimate for the risk-free rate is above the long-term average for ILGs even when accounting for expected changes in the spot rate on a forward looking basis. The CC approach determines a Total Market Return (TMR) independently to the risk-free rate. If the equity beta is not equal to unity, after arriving at a TMR, the breakdown of the TMR between the risk-free rate and equity risk premium affects the cost of equity allowance. The CAA has recently assumed a risk-free rate 75bps below the CC estimate at 1.25%⁷.

The market cost of equity range from the CC for the NIE case is narrower in terms of a range (100bps rather than 200bps), but retains the same mid-point as the 2008 airports determination and the 2010 Bristol Water determination (5.0-7.0% compared to 5.5-6.5% for NIE). Good regulatory practice involves examining market evidence, including a range of cross checks. This is our interpretation of what the CC has done. We adopt a similar approach in this report by considering historical market evidence before looking at cross checks from wider sources to assess whether our approach and interpretation is consistent with the broader evidence base.

On point 2:

When Ofgem discuss adopting a change of approach, there are two key aspects to consider. The first of these is the methodological approach, whilst the second part is interpretation of the results from the methodological approach. Reduced regulatory risk will be observed when a regulator adopts a consistent methodology and interprets this evidence in a consistent fashion. Given that Ofgem and the CC uses similar methodological assumptions and market

⁶ Ofgem (2013) See paragraph 1.15, 1.21 and subsequent consultation question.

⁷ CAA (2014) 'Estimating the cost of capital: technical appendix for the economic regulation of Heathrow and Gatwick from April 2014: Notices of the proposed licences', January 2014.

evidence, it is the interpretation of those findings which Ofgem deems to be inconsistent with the CC rather than the approach itself.

We therefore focus on consistency of interpretation and what this interpretation would mean for the TMR given Ofgem's methodological approach. We find that the Ofgem provisional choice of 6.85% for the TMR would be slightly more of a departure from the interpretation (and thus overall methodology) adopted in pre-RIO price controls than a total market return of 6.00%, the CC's point estimate in the NIE case. For RIO GD1/T1 we find that the interpretation of market evidence for the cost of equity is not consistent with previous Ofgem decisions despite no apparent change in methodology. We note that this does not appear to have increased perceptions of regulatory risk, perhaps because of the relative generosity of the allowed cost of equity.

In the RIO T1/GD1 Overview papers, Ofgem did consult on a cost of equity range of 4.0-7.2%⁸ in 2010, since when observable market evidence on the risk-free rate and equity beta points to further decreases in the cost of equity. This means that a lower figure at least has been in Ofgem's thinking for a period of years.

1.1. Consistency of methodology

Ofgem state that, as a principle, *'a stable or mechanistically-derived estimate of the market return would provide a degree of stability to cost of equity assumptions.'*⁹ When investing in regulated utilities, we believe that investors desire a consistent approach to the setting of the cost of equity that reflects a consistent approach to examining and interpreting market evidence, rather than choosing the same (or similar) number for each price control. Investors may have holding periods in excess of the length of the price control, so would want reassurance that the rate would be adjusted to reflect market conditions if the market cost of equity had risen by the following price control. Having a fixed number for the cost of equity would lead to peaks in investment flows with low market returns, followed by troughs at a time of high market returns, creating a financeability challenge. The CC also continue to states that the equity market return fluctuates and *'cannot therefore be regarded as fixed over time.'*¹⁰

A formula-based methodology would reduce regulatory discretion, however the cost of equity is inherently unobservable and whilst an indexation mechanism could be applied, as it is for the cost of debt, such a mechanism is likely to be subject to significant challenge.

Ofgem note that its approach continues to draw heavily from the Smithers & Co (2003)¹¹ study on the cost of capital. Smithers & Co quote a range of 6.5-7.5% for the TMR, which is a

⁸ Ofgem (2010) RIO-T1 Overview paper, p39.

⁹ Ofgem (2013) 'Consultation on our methodology for assessing the equity market return for the purpose of setting RIO price controls', 6 December 2013, paragraph 1.20.

¹⁰ CC (2013) See paragraph 13.144.

¹¹ Smithers & Co (2003) 'A Study into Certain Aspects of the Cost of Capital for Regulated Utilities in the UK,' Stephen Wright, Robin Mason and David Miles, February 2013.

key reference point for Ofgem. However Ofgem does not reference the approach taken by Smithers & Co, who were their advisers at the time, nor the equity beta estimates and associated methodology. As estimation is drawn from a methodological approach and interpretation of this evidence, by omitting to reference the approach, Ofgem is missing out a key aspect of the Smithers & Co work.

Ofgem has noted a 0.4 percentage point change in inflation estimate, to be applied to the risk-free rate in their consultation document. We agree with this adjustment and discuss this further in Section 1.3. In terms of the Smithers & Co range for the TMR, this should also be adjusted down by the same amount. This gives a TMR range of 6.1-7.1%. The mid-point of this range is 25bps below the Ofgem central TMR estimate of 6.85% and 65bps below the TMR proposed by Western Power Distribution (WPD).

In their updated report for Ofgem, Smithers & Co (2006)¹² find a central estimate for the overall cost of equity of 4.50-6.25%¹³. Removing the 0.4 percentage points from the risk-free rate would give a cost of equity of 4.10-5.85%. This is significantly below the WPD proposal and since the publication of this report, the regulatory framework has matured, and relative to the broader economy, utility networks have become less risky, so their estimate may have fallen since this date Ofgem have not addressed why they have not implemented Smithers & Co findings on the equity beta, although a key part of the Smithers & Co report.

CEPA has recently advised the Australian Energy Regulator (AER) on the stability of the cost of equity, finding that whilst there is evidence to support stability in the very long-term, *'there is limited evidence that stability holds in the short to medium run, so regulators cannot necessarily assume that the cost of equity is stable either over a standard investor timeframe (e.g. 10 years) or over a standard asset lifetime (e.g. 30-50 years).'*¹⁴

Assuming that the equity beta is less than one, setting a constant TMR would not ensure stability in the cost of equity allowance for DNOs as the component parts are not stable. For example, if the risk-free rate changes by 1.0% (with a countervailing change in the ERP of the same magnitude) with an assumed equity beta of 0.5, the change in the parameter estimates would lead to a change in the cost of equity allowance of 0.5% despite having a constant TMR. We favour a reliance on longer term data, but do not interpret this as meaning that the TMR should be fixed. The assumption that the component parts of the TMR remain constant is flawed.

Interpretation of other regulatory decisions

The comparative analysis undertaken in Section 1.2 does not include comparison to other recent regulatory determinations by other regulators, or Ofgem itself on non-onshore network regulation.

¹² Smithers & Co (2006) 'Report on the cost of capital, provided to Ofgem,' 1 September 2006.

¹³ This is based on the same TMR of 6.5-7.5%.

¹⁴ CEPA (2013) 'Advice on estimation of the risk-free rate and market risk premium,' March 2013.

The consultation paper notes the difference between Ofgem's central estimate for the TMR for RIIO ED1, post-inflation adjustment, of 6.85% is not consistent with the CC range for the TMR (5.50-6.50%), from which the CC has selected the mid-point. But Ofgem's TMR estimate is not consistent with the ORR CP5 determination, in which a range of 6.50-6.75% was selected. Ofgem's position is also not consistent with the Ofcom Fixed Asset Market Review in August 2013, which gives a TMR of 6.3%. Ofgem have previously referenced the Civil Aviation Authority for the Q6 price control. The TMR range selected at Final Proposals by the CAA was 6.25-6.75%. This was not consistent with the Ofgem TMR central estimate, but has since been revised down by 50bps.

Ofwat are currently working on the PR14 price control, but the evidence available points to significantly lower returns to the previous price control, PR09. Ofwat's Chief Regulation Officer has stated that¹⁵:

"The cost of capital will fall [for the next control period compared to the current control period] - when companies put forward their proposals for the cost of capital in their business; there is a real opportunity for this number to start with a 3."

On 10th January 2014, the CAA issued a policy update on Q6 in which they have revised downwards their point estimate for the TMR. The CAA point estimate is now 6.25% and was revised down from the upper end of their range at Final Proposals. This includes a risk-free rate of 0.5% and an ERP of 5.75%. As such, Ofgem's central estimate of 6.85% for the TMR is yet further apart from the views of other regulators.

We will go on to state that Ofgem's position is not supported by market evidence or consistency with previous Ofgem decisions. The above evidence would also suggest that the Ofgem decision is not supported by regulatory precedent and the view of other regulators. This would suggest that a 6.85% TMR, after adjusting for a higher inflation estimate, is not a supportable estimate.

¹⁵ Ofwat (2013) 'Water 2013 – Keynote Opening Address', Sonia Brown – Ofwat Chief Regulation Officer, 13 November 2013.

1.2. Ofgem's approach to setting the cost of equity

In this section we consider Ofgem's approach to setting the market cost of equity in the four price controls prior to RIIO and subsequent to the Smithers & Co (2003) report. The reason for doing this is that a consistent methodological approach reduces regulatory risk and thus the cost of capital. Our analysis includes the previous two electricity distribution price controls and the Ofgem network determinations between DPCR4 and DPCR5. These are¹⁶:

- DPCR4 (2005-2010);
- TPCR4 (2007-2012)¹⁷;
- GDPCR (2008-2013); and
- DPCR5 (2010-2015).

The price controls not in our sample of previous Ofgem decisions include:

- RIIO GD1/T1 (2013-2021); and
- DPCR3 (2000-2005).

DPCR3 was the electricity distribution price control before DPCR4, running from 2000 to 2005. For this determination, Ofgem estimated a 6.0% TMR, but this was prior to the Smithers & Co (2003) study. The TMR from DPCR3 may represent a change in methodological approach by Ofgem and so its inclusion in the sample would not be justified.

With the RIIO GD1/T1 Final Determination, we believe a decision on the TMR of 7.25% represents a change in interpretation of available market evidence (although with a similar methodological approach) relative to their previous decisions noted above. We do not understand the reasons for a change in interpretation and do not see that there has been any change in approach that would explain Ofgem adopting a higher cost of equity assumption that they would have done in previous years when confronted with the same evidence. For example, relative to their previous decision, DPCR5, the evidence on the risk-free rate, TMR estimates and volatility points to a lower TMR, yet Ofgem did not recognise this in selecting a TMR for RIIO GD1/T1. In the CEPA June 2012 paper on the cost of equity¹⁸, we noted that a mechanistic interpretation of the evidence would lead to a cost of equity of 3.7-6.3% in real terms.

Overall, the DPCR3 and RIIO GD1/T1 price controls do not appear to follow methodological approach and interpretation that is consistent with the price controls in our sample. We expect that the inclusion of DPCR3 would have reduced the TMR observed in our analysis,

¹⁶ The dates of the Final Proposals documents are: DPCR4 – 22 Nov 2004, TPCR4 – 4 Dec 2006, GDPCR – 3 Dec 2007, DPCR5 – 7 Dec 2009.

¹⁷ TPCR4 was rolled over to 2013 to correspond with the gas distribution price control.

¹⁸ CEPA (2012) RIIO GD1: 'Cost of Equity: A report for Centrica,' 19 June 2012, p19.

whilst the inclusion of RIIO GD1/T1 would have worked the other way, so these would likely offset each other to some extent¹⁹.

We focus for the remainder of this section on the risk-free rate and TMR that would be observed by application of a consistent approach by Ofgem, including the assumed inflation expectation at the time of setting the decision. This is based on a quantitative assessment, with further context and cross checks provided in Section 2 of the report.

The risk-free rate

There is a readily available proxy for the risk-free rate both in nominal terms (nominal gilts) and in real terms (index-linked gilts). We believe that using gilts of ten year maturity is appropriate and a ten year averaging period of this is a sufficiently long-term measure to ensure stability (and also capture current trends).

The table below shows risk-free rate evidence points at the time of the Final Proposals for each of the price controls and the latest values²⁰.

Table 1.1: Risk-free rate market evidence (prior to any adjustment for changing inflation assumptions)

	DPCR4	TPCR4	GDPCR	DPCR5	Latest
Ten year nominal gilt ten year average yield	5.81%	5.10%	4.89%	4.65%	3.77%
Ten year real gilt ten year average using 2.7% inflation~	3.11%	2.40%	2.29%	1.95%	1.07%
Ten year ILG ten year average yield	2.70%	2.25%	2.07%	1.83%	0.90%
Ten year ILG ten year average yield over price control*	2.19%	1.94%	1.79%	1.40%	0.15%
AVERAGE OF ESTIMATES	2.67%	2.20%	2.05%	1.73%	0.71%

Source: Bloomberg, CEPA analysis

Note 1:~ 2.7% is an long-term estimate of inflation prior to 2010.

Note 2: based upon forward estimates of nominal gilts (i.e. assumes no change in breakeven inflation).*

Note 3: 'Latest' refers to data up until 9 December 2013.

We compare this data with the decisions taken by Ofgem for the price controls.

¹⁹ The DPCR4 determination included a high TMR of 7.5%, so this should assuage concerns regarding cherry picking.

²⁰ Latest values refer to 9 December 2013 unless otherwise specified.

Table 1.2: Real risk-free rate comparison of decisions and market data

	DPCR4	TPCR4	GDPCR	DPCR5	Latest
Average of real risk-free rate estimates (from Table 1.1)	2.67%	2.20%	2.05%	1.73%	0.71%
Real risk-free rate decision	3.00%	2.50%	2.50%	2.00%	2.00%^
Difference in estimates	33bps	30bps	45bps	27bps	129bps

Source: Bloomberg, CEPA analysis

Note 1: ^ this is prior to the adjustment Ofgem make for a higher inflation assumption.

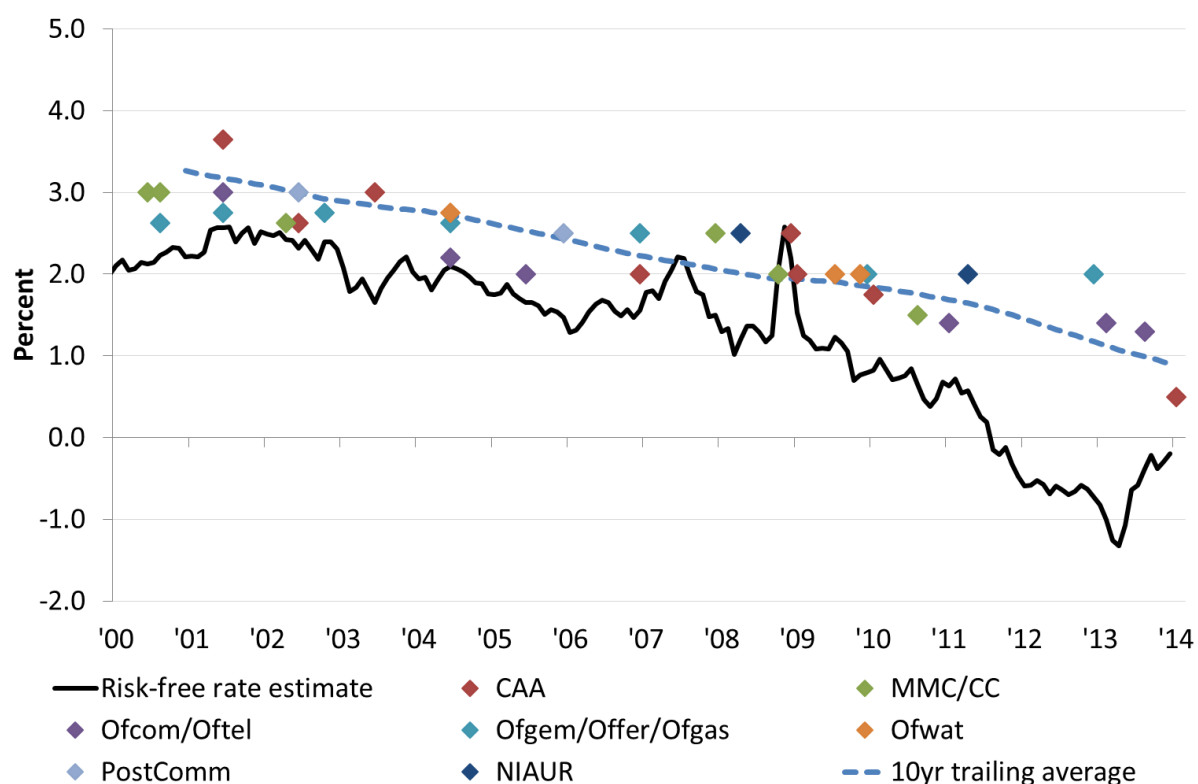
Note 2: 'Latest' refers to data up until 9 December 2013.

- Table 1.2 shows that the risk-free rate has generally been around c.30bps above our composite data series estimate. **If the same 'spread' was observed now for RIIO ED1, this would lead to a risk-free rate of c.1.00%.**

The decisions of other regulators can be observed to be close to the ten year trailing average of ten year ILG yields. Given the spot rate is below the trailing average and significantly below the yields of a decade ago, this trailing average is expected to fall further and a decision above 1.0% may appear generous on this evidence.

This is shown in the figure below.

Figure 1.1 – Regulatory decisions on the risk-free rate



Source: Bank of England, CEPA analysis

The analysis above points to an appropriate risk-free rate of 1.0%, based upon consistency with Ofgem's previous decisions and market evidence. This estimate is prior to any further adjustment based upon inflation²¹.

TMR

There are two principal sources from which we derive total equity market returns data. These are independent from our risk-free rate estimates and we use the Credit Suisse Global Investment Yearbook by Dimson, Marsh and Staunton ('DMS') and the Barclays Equity Gilt Study ('Barclays'). The time series for the UK goes back to 1899 for DMS and we use 1960 to present data for the Barclays dataset. A longer time series has the benefit of cancelling out any differences between expectations and actuals, although in the case of the UK, shifts of expectation may have occurred in the earlier years of the DMS sample e.g. two World Wars.

Ofgem has noted its preference for long-term evidence, so this would be consistent with such a perspective. Given there are annual movements due to volatility in the data series, we take a five-year average of the long-term averages²².

Arithmetic and geometric averages are provided by these data sets. In Ofgem's ED1 strategy consultation, Ofgem stated that *'we note that there has been no consensus in the debate about which of the arithmetic mean or geometric mean is more appropriate for the purpose of setting the cost of equity in a regulatory context.'*²³

In a report in response to the RIIO ED1 business plans, CEPA noted the Blume weighting between geometric and arithmetic mean. This is dependent upon the time horizon for the investment, but gives greater weighting to the arithmetic mean (which is higher than the geometric mean). In our analysis of market evidence, we take an 80% weighting for the arithmetic mean and 20% weighting for the geometric mean²⁴.

The table below shows the available market evidence for the total market return for our sample price controls and the latest available values.

²¹ This is partly derived from ILG yields, which will include inflation expectations, so any adjustment will need to take this into consideration.

²² Returns may not be independent, for example a significant event may decrease prices significantly in one year, but then create a significant return in the following year following an adjustment.

²³ Ofgem (2013) 'RIIO ED1: Consultation on strategy for the next electricity distribution price controls – RIIO ED1 – Financial issues', see paragraph 2.53.

²⁴ As we are seeking to observe the decision relative to a data point, as long as the movements in these indices are similar, the exact weightings should not lead to large differences.

Table 1.3: Equity market returns evidence

	DPCR4	TPCR4	GDPCR	DPCR5	Latest
DMS Arithmetic 1900-latest (five year average)	7.44%	7.27%	7.26%	7.26%	7.13%
DMS Geometric 1900-latest (five year average)	5.57%	5.40%	5.40%	5.41%	5.22%
DMS composite of the above (using an 80-20 split)	7.07%	6.90%	6.89%	6.89%	6.75%
Barclays 1960-latest (five year average)	6.14%	5.68%	5.66%	5.68%	5.20%
Average of DMS/Barclays	6.61%	6.29%	6.28%	6.29%	5.98%

Source: Bloomberg, CEPA analysis

Note 1: Based on most recent data available at time of Final Proposals – DPCR4 to 2003, TPCR4 to 2005, GDPCR to 2006, DPCR5 to 2008, latest to 2012.

Note 2: ‘Latest’ refers to data up to 9 December 2013

The use of these figures is to calculate the degree of ‘headroom’ across different price controls, so a systematic adjustment does not impact on our final results²⁵. This then compares to the decisions taken by Ofgem on the total equity market return.

Table 1.4: Real equity market return comparison of decisions and market data

	DPCR4	TPCR4	GDPCR	DPCR5	Latest
Average of real equity market return estimates (from Table 1.3)	6.61%	6.29%	6.28%	6.29%	5.98%
Real equity market return decision	7.50%	7.00%	7.25%	7.25%	7.25%^
<i>Difference in estimates</i>	<i>89bps</i>	<i>71bps</i>	<i>97bps</i>	<i>96bps</i>	<i>127bps</i>

Source: Bloomberg, CEPA analysis

Note 1: ^ this is prior to the change in inflation assumption; given Ofgem’s 6.85% equity market return estimate, we assume an inflation rate which is 0.4 percentage points lower, for consistency with prior Ofgem decisions.

Note 2: Equity beta for these price controls were equal to 1.0 apart from DPCR5, where the equity beta was 0.9.

Note 2: ‘Latest’ refers to data up to 9 December 2013

²⁵ For example, if this data was deemed to be 40bps too high, this would then give headroom which is 40bps more. However as the latest data values would be adjusted by 40bps also, this would not impact upon our results.

- Table 1.4 illustrates that the total equity market return has generally been around 88bps above our composite data series estimate. ***If the same 'spread' was observed now for RIIO ED1, this would lead to a total equity market return of c.6.85%²⁶.***

When the equity beta is not exactly equal to one, the split between the risk-free rate and equity risk premium (ERP) is material. This is magnified when the cost of capital is being applied to a combined Regulatory Asset Value (RAV) which is in billions of pounds in size, and when the evidence contained within the RIIO Financeability study points to a lower equity beta being applied for the forthcoming price control. A 0.8% difference in the cost of equity assumption (the difference between Ofgem's current central cost of equity estimate of 6.3% and a rate of 5.5%, which would use the CC's cost of equity parameters) is equal to £62m per annum²⁷.

²⁶ Using an inflation assumption of 2.7%.

²⁷ This is based on a Regulated Asset Base estimate of £22bn at 65% gearing.

1.3. Inflation adjustment

The estimates above give a TMR of 6.85% based on the past Ofgem approach under these price controls, but with an inflation rate of 2.7% assumed in deflating nominal yields. This 6.85% TMR is comprised of a risk-free rate of 1.0% and an ERP of 5.85%. This is before consideration of the change in relationship between CPI and RPI inflation. We have raised this point in our previous response to Ofgem in RIIO ED1 and also to other regulators, such as the CAA. We therefore agree with Ofgem's decisions to adjust the cost of equity allowances down by 0.4 percentage points.

- *This would reduce the overall total market return to 6.45%.*

The OBR in a working paper considered the relationship between CPI and RPI inflation, such that we can compare across both measures of inflation²⁸. This working paper from November 2011 found that the difference between CPI and RPI inflation from 1989 to 2011 had averaged 0.7 percentage points, but that they expected this difference to persist at around 1.2 percentage points from then on. Ofgem's DPCR5 inflation estimate was 2.8% and their inflation estimate for RIIO ED1 is 3.2% so an additional 0.4 percentage points difference is to be used (and to be deflated using the Fisher formula, as per CC precedent).

Given that this OBR paper was written at the end of 2011, we would reject claims that there has been an offsetting structural break in council tax and that some of this 0.4 percentage points has already been included in the change of inflation forecast for DPCR5²⁹. Estimates of inflation should include the impacts of both the formula effect and non-formula effects going forward. A further measure which should show this is breakeven inflation. The one year average of ten year breakeven inflation prior to the DPCR5 Final Proposals was 2.6%. The one year average to 6 January 2014 is 3.2%. This difference is c.60bps, so larger than the 40bps change proposed by Ofgem. The inflation rate should be the best long-term estimate going forward. Given Ofgem's adoption of breakeven inflation in the cost of debt indexation mechanism, a holistic approach rather than identifying individual disparities between CPI and RPI inflation appears appropriate.

The question then is whether to include this downwards adjustment in the risk-free rate or ERP term. As our analysis on the risk-free rate has used a ten year trailing average and has used both nominal and ILG yields, we expect that some but not all of the effects of the RPI formula effect would be present in this estimate. The effect on the market equity premium would have been minimal. As such we think it appropriate to reduce both our risk-free estimate and ERP estimate by 0.2 percentage points each. Ofgem's approach has taken the full 0.4 percentage points from the risk-free rate. Such an approach would reduce the company specific cost of equity allowance relative to the method we set out above.

²⁸ OBR (2011) 'The long run difference between RPI and CPI inflation', November 2011.

²⁹ These points were raised at the Ofgem stakeholder workshop on 7 January 2014 by Keith Noble-Nesbitt of Northern PowerGrid.

- *This would give a risk-free rate of 0.80% and an ERP of 5.65%.*

This is within the range of the CC NIE determination for the market cost of equity (5.50-6.50%), but at the top end of the range. This would be 45bps below Ofgem's current estimate, but still 40bps above the CC mid-point³⁰. Going back to our volatility index, half of our sample included periods which had significantly higher volatility at the time of the Final Proposals, so given the low observed volatility currently a lower figure relative to this index may be appropriate. We now look into what other factors might be driving this difference.

1.4. Ofgem approach compared to the CC

The previous section showed that Ofgem had included spreads on the TMR based upon market data averaging c.88bps across our four selected price controls. Applying the same headroom to a consistent methodology would give a TMR of 6.45% for RIIO ED1. Removing this spread would leave Ofgem towards the lower bound of the CC range³¹.

Therefore it is our view that the difference in approach should be characterised as a difference in interpretation rather than necessarily a focus on more contemporary evidence. The range adopted by the CC is also consistent with their previous ranges on the total market cost of equity. For the airports in 2008, the CC opted for a 5-7% market cost of equity and adopted the same range for the Bristol Water determination. In the NIE case, the range was narrower, but still around the same mid-point.

1.5. Other Ofgem decisions

Ofgem, in October 2013, issued their minded-to position on Interest During Construction (IDC) approach for offshore transmission and the Project NEMO interconnector³². This is for the construction of assets, which will possess greater risk than simply operational assets and will act as a cap (for example, the cost of debt is the floor for the NEMO interconnector).

This gives a TMR of 7.3% in nominal terms – using a 2.89% nominal risk-free rate. This gives a -0.30% real risk-free rate based on our 3.2% inflation assumption, and a TMR of 4.1% in real terms. This is 275bps below the Ofgem provisional decision for the RIIO ED1 price control of 6.85%. In addition, the equity beta chosen for the offshore transmission is also below the equity beta used for RIIO ED1, despite the offshore transmission IDC being for the more risky construction phase, for offshore assets and with a less mature regulatory regime in place.

³⁰ Assuming a 0.9 equity beta, the cost of equity would be 5.84%, 86bps below the allowance for WPD and 46bps below the Ofgem central business plan figure.

This difference would be greater were consistent inflation expectations to be applied to both estimates.

³¹ This would be exactly consistent with the CC approach should there to be no headroom and a consistent inflation estimate.

³² Ofgem (2013) 'Proposed Interest During Construction approach for offshore transmission and Project NEMO,' 18 October 2013.

1.6. Conclusions

In summary, we find that were Ofgem to apply the same methodology as previously, their point estimate for the TMR would be consistent with the CC range for the NIE provisional determination (at 6.45%). This uses the a consistent methodology which relies on long-term data i.e. ten year averages for the risk-free rate and 50yr+ averages for the TMR. The increase in inflation expectations is well justified and breakeven inflation differentials may point to a higher figure.

A risk-free rate of 0.80% and an ERP of 5.65% would be consistent with previous Ofgem decisions based on our analysis, so adopting a TMR as low as 6.0% would not represent a fundamental change of methodology. (in fact, less so than selecting a TMR of 6.85%³³). There is also other regulatory precedent, for example Ofgem IDC allowance for offshore transmissions and the TMR ranges from other regulators, which support a lower TMR figure than Ofgem is consulting on.

We look at cross checks for this quantitative analysis in the following section where we consider other elements such as equity betas. These cross checks point to a TMR below 6.45%, as arrived at through our comparative analysis.

2. CROSS CHECKS AND BROADER IMPLICATIONS

2.1. Cross checks on the Total Market Return (TMR)

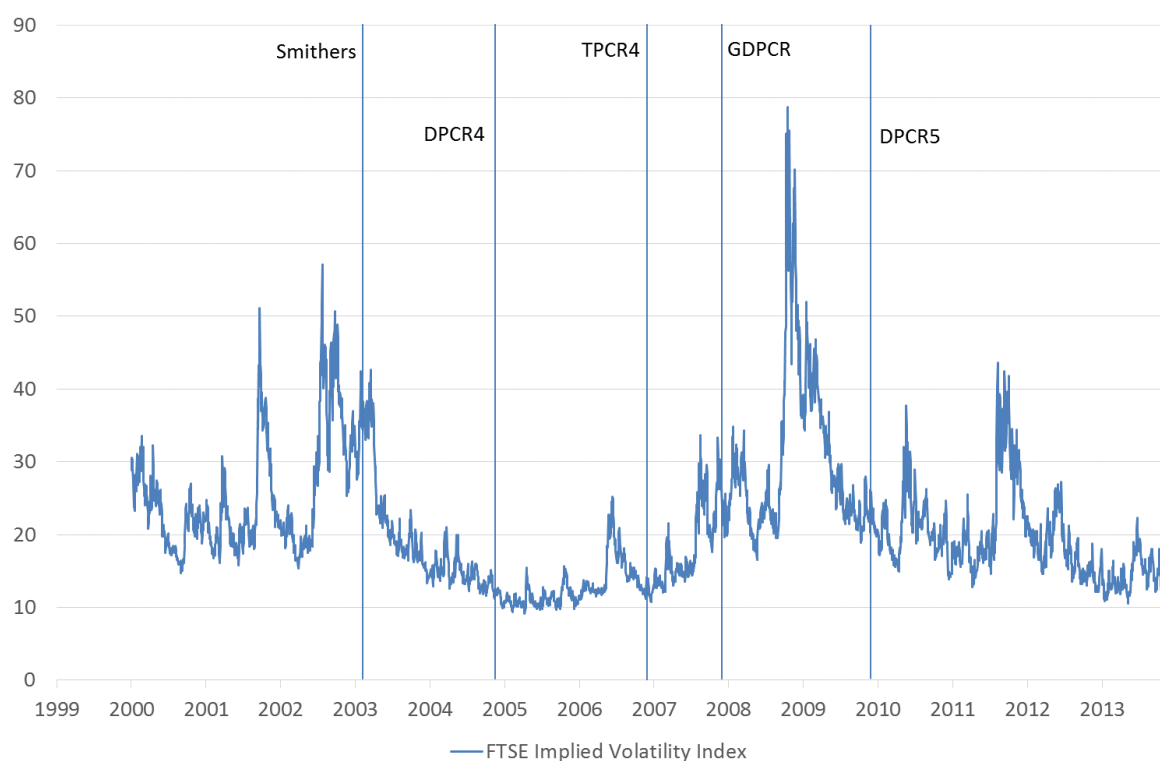
In Section 1, our (predominantly) quantitative assessment found that a TMR of 6.45% would be consistent with Ofgem's methodology to setting equity returns. In this sub-section we use cross checks to determine whether this figure appears appropriate. We consider the following items:

- Volatility;
- Financeability;
- Market Asset Ratios (MAR);
- evidence on DMS;
- lower expected returns; and
- change to market dynamics

Volatility

In the previous section we observed that Ofgem included headroom on market evidence for the cost of equity. The magnitude of this may have depended on perceptions of volatility at the time. We look at a measure of this to give context to previous Ofgem decisions.

Figure 2.1 – FTSE Implied Volatility Index, 2000-present



Source: Bloomberg

At the time of the TPCR4 and GDPCR Final Proposals, the volatility was relatively elevated, although not near the levels observed in late 2008. The Smithers & Co (2003) report also came at a time with significant volatility.

At a time of low volatility less headroom should be observed in regulated sectors. The Chief Regulation Officer at Ofwat has stated that *'the market uncertainty that justified a conservative return on equity at the height of the financial crisis has passed.'*³⁴ We agree that volatility is not a reason to prevent the cost of equity allowances from better reflecting market conditions.

Ofgem may have been more conservative in their estimates if confronted with such volatility. However, current volatility is at 2004-2007 levels and has been at a relatively low level for over a year. A lower degree of headroom for RIIO ED1 would be consistent with this, and thus a 6.45% TMR appears a conservative estimate.

Financeability

Ofgem sets out concerns over financeability and the impact of the 'formula effect' on inflation in the consultation document. However, both of these issues were discussed in the RIIO Financeability study by Imrecon/ECA in December 2012. Issues discussed include:

- lower levels of equity returns being appropriate;
- the allowed equity beta is significantly too high; and
- the impact of the difference between the RPI and CPI on financeability ratios.

From a financeability perspective, the study found that it is the fundamental sustainability of a business which counts and that³⁵:

'the confluence of mounting evidence of low betas and a higher formula effect in the RPI would have a bearing on the balance of cash flows of a regulated business, but our assessment is that the PMICR measure, as specified, somewhat accentuates the impact. Importantly, it should have only a limited bearing on the underlying economic sustainability of a regulated business.'

Ofgem has now adjusted the cost of equity to account for the formula effect and evidence strongly points to a significantly lower equity beta. The Ofgem RIIO ED1 business plan assessment notes 'comfortable' credit metrics for WPD without a transition for asset lives. The same description is given to the credit metrics for UK Power Networks and SSE Power Distribution, so given that the equity return is one aspect of the regulatory settlement, we do not think that this represents a reason not to apply a more justified cost of equity.

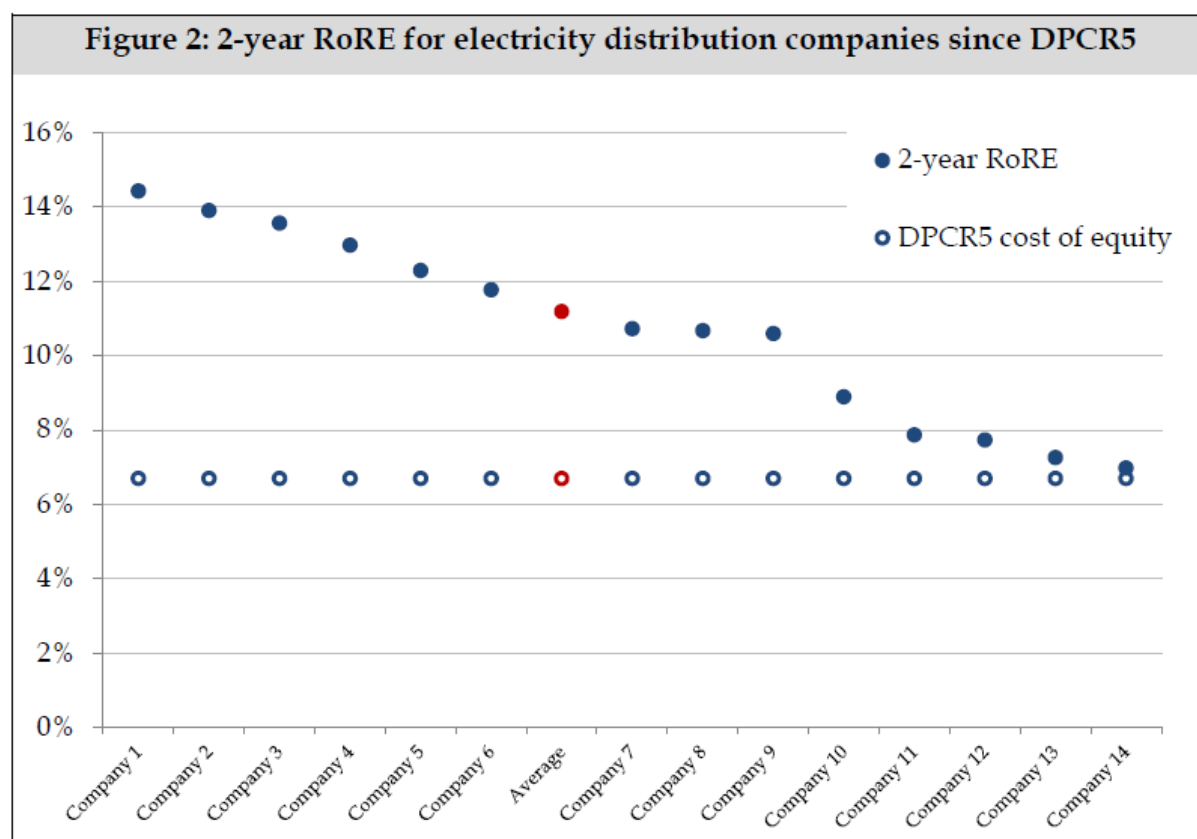
³⁴ Utility Week (2013) A message for water companies from Ofwat's Sonia Brown, 30 October 2013.

³⁵ Imrecon/ECA (2012) RIIO Financeability Study

Financeability concerns may be alleviated given the equity returns received by the DNOs recently, giving them an equity buffer than could be used if necessary for the next price control.

In the Imrecon/ ECA financeability study, the authors present a graph of two-year RoRE returns for electricity distribution companies in DPCR5.

Figure 2.2 – Two year RoRE returns in DPCR5



Source: Imrecon/ECA

This shows that the average company significantly outperformed the allowed cost of equity in the first two years of DPCR5.

This outperformance can be through incentives or the cost of equity (or both). The level of RoRE and MAR premiums suggests that both may be a concern. As such it is key that incentives are calibrated correctly. Financeability analysis includes a qualitative assessment that carries more weighting than any quantitative assessment³⁶ and so expectations of outperformance (and the improved finances from actual performance) will be taken into account.

This RoRE could be through a deferral of capex, so our MAR analysis provides strong corroborating evidence that there is outperformance (or expected outperformance) of the allowed equity return.

³⁶ Based on Moody's ratings methodology.

MAR analysis

In terms of cross checks, Ofgem can use the MAR analysis noted in their consultation document. We calculated MAR premia for the electricity distribution sector and for other regulated sectors. While it is complex to decompose the ratio in component parts, a significant premia would likely imply more than simply investor optimism. The Chairman of Ofwat, Jonson Cox, arrived at a similar conclusion in a March 2013 lecture³⁷:

“The continuing trend for water companies to be sold for prices around 130% of RAV only suggests that the regulator’s adopted cost of capital is too high and the premia reflect excess demand for these assets.”

The results of the CEPA analysis are replicated below.

Table 2.1: MAR analysis by sector

Sector	Premium (%)
Airports	9.0%
Gas Distribution	12.6%
Electricity Distribution	34.7%
Water	20.8%

Source: CEPA, Response to RIIO ED1 business plans, Table 4.12 – Cost of capital annex

Ofgem state that they can infer from these premiums that ‘some of the premium reflects a difference between the returns the market requires at present, in a low interest rate environment, and the longer term.’³⁸ This would suggest that Ofgem are aware that equity investors currently require a lower return that may have been the case in previous years.

DMS evidence

Whilst the UK one-year investment horizon arithmetic mean for 1900-2012 (7.1%), DMS also provide further quantitative and qualitative analysis. For example, from 2000-2012 there was a 0.0% annualised real return for the UK and 0.1% for the world.

In the Smithers (2003) report, the authors state that (CEPA addition in square brackets): ‘if cost of capital assumptions are being made over longer horizons, [the arithmetic mean] may be an over-estimate (possibly by as much as a full percentage point).’³⁹ The CC has calculated the DMS figures over longer holding periods and supports the Smithers statement, with the ten year average return being substantially below the oft-quoted one-year average return. The DMS figures themselves are also higher than the Barclays figures.

³⁷ Observations on the regulation of the water sector: A lecture by Jonson Cox, Chairman of the Water Services Regulation Authority (Ofwat), 5 March 2013.

³⁸ Ofgem (2013) See paragraph 1.6.

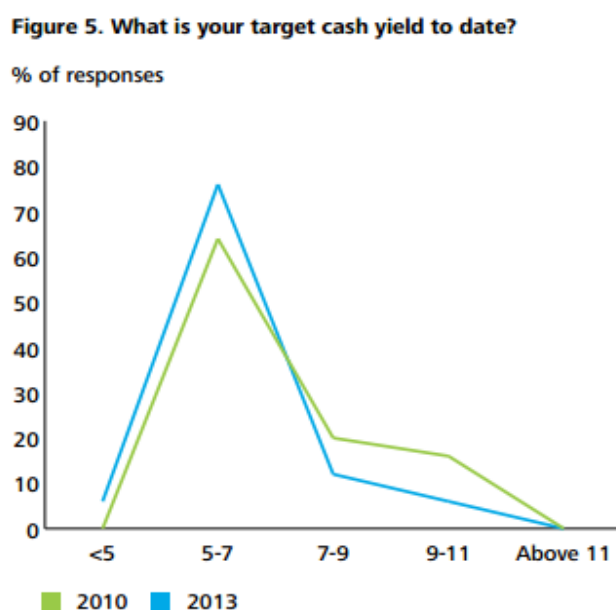
³⁹ Smithers (2003) p49.

Expected returns

The issue of lower expected returns is a topic that the CC mention in the NIE case.⁴⁰ This is not a new phenomenon though and the CC had also noted this in their Bristol Water case determination back in 2010, since when observable rates have fallen further.

The below chart from the Deloitte Infrastructure Investors Survey 2013 may show that equity returns have fallen (or are expected to fall) in 2013 relative to 2010. This is infrastructure specific, so this fall is either through a smaller market cost of equity or from a de-risking of infrastructure, of which regulated utilities are the greatest focus of the investors surveyed.

Figure 2.3 – Expected returns from infrastructure investors



Source: Deloitte

The CC do appear to use the same data sources and averaging periods as Ofgem, but draw on wider evidence as cross checks on their use of this data. This may represent such a cross-check.

The opening page of the Barclays Equity Gilt Study 2013 says *'equity returns over the next five years are also expected to be lower – in the 3-4% range – than we had been anticipating previously and well below historic norms.'*⁴¹ The range quoted is for the US, with Europe expected to be 100-150bps higher. This is still in the range 4.0-5.5% as a total equity market return. This assessment is supported by a recent paper from the Board of Governors at the Federal Reserve, in which it states that their analysis suggests that expected returns have fallen by three percentage points in the last forty years⁴².

⁴⁰ CC (2013) See paragraph 13.119.

⁴¹ Barclays EGS (2013) p1.

⁴² Warusawitharana, M. (2013) 'The expected real return to equity.'

The CEPA report in August 2013 referenced DMS quotes and DMS state that their '*analysis indicates that part of their reward arose from past good fortune and factors that are unlikely to recur.*⁴³'

The 2013 InfraNews investor forum had investors who '*said they were already expecting less sizeable returns than even a year ago...Allianz Capital Partners described the high prices some investors are willing to pay for assets as "astonishing".*⁴⁴'

Changes to market dynamics

Whilst still maintaining a focus on historical longer term information, it is important to understand any current or expected changes to the market environment which might affect required rates of return. The Deloitte Infrastructure Investors Survey 2013 found that '*regulated utility and transport assets continue to be highly attractive investments*' and noted a lack of supply which compares to a new range of buyers coming to the market.⁴⁵ The influx of non-Japanese Asian investors are also said to be particularly interested in equity rather than debt⁴⁶, which would imply that demand for DNO equity would still be present even with a more appropriate, lower cost of equity. Commentary from InfraNews states that funding continues to increase and there is liquidity back in UK markets.⁴⁷

The idea of changing market dynamics is touched upon by Regina Finn, the former Chief Executive of Ofwat, in a recent paper written together with Simon Less⁴⁸:

"What may have worked in a previous period is not necessarily best approach today. The world is constantly changing: more demanding customers; environmental and economic challenges; technological developments; rising commodity scarcity; increased sector maturity; opportunities for new markets; new entrants. A regulator captured by its historic approaches will tend to overlook, or even resist, a need for change in regulatory approach in response."

2.2. The allowed equity beta

The previous section of this report focussed upon the TMR, which does not include the equity beta element of the cost of equity. It is key that any uncertainty over the longer price control is not accounted for in duplicate (or triplicate if you include incentives) for both the market cost of equity and the equity beta.

In the RIIO Financeability study, Imrecon/ECA note that there has been a 'marked drop in betas from about October 2010.' Following a 'winsorization' technique where outliers were

⁴³ DMS (2013) p33.

⁴⁴ InfraNews (2013) InfraNews investor forum: attendees chart brighter future, 18 Feb 2013.

⁴⁵ For example, an InfraNews article on 'The evolution of Asian finance' (17 Sep 2013) found that Chinese investors have been increasingly active in the UK and investors from Korea are expected to follow.

⁴⁶ Article as above.

⁴⁷ As per InfraNews 2013 European Infrastructure Finance Summit (Oct 2013) and 2013 InfraNews investors forum (Feb 2013).

⁴⁸ Regulatory Policy Institute (2013) Letters & Notes on Regulation: Capture of independent sector regulators, Regina Finn & Simon Less

controlled for, the report authors arrived at a 95% confidence interval for regulated utility equity betas of 0.28-0.46. At the upper end of this range was National Grid, whose higher equity betas were posited to correspond with relatively high exposure to pension scheme assets. The beta for National Grid has fallen since Ofgem's review of its treatment of the assets and so this is not expected to be present going forward.

Following this analysis, Imrecon/ECA concluded that⁴⁹:

'Evidence would be consistent with an underlying (after adjusting for pension scheme concerns) equity beta estimate of between 0.35 and 0.50 for the listed network companies.'

Given the quote on lower betas and the formula effect earlier in this report only having a limited bearing on economic sustainability, it would have been useful to understand the basis of the comparison. Using the equity beta from the mid-point of this range would lead to a 2.4 percentage point fall in the cost of equity, so this would represent a significant change. However, making such a change would represent an evidence based assessment and as such it would be justifiable and this must be expected from the behalf of an investor.

A lower equity beta is also supported by the Smithers & Co (2006) study, which found equity betas as assumed by Ofgem to be distinctly generous. Such a view is supported by quantitative and qualitative evidence. Ofgem themselves note from a cost of debt perspective that regulated networks are affected by a 'halo effect' which reduces their cost of debt given reduced risk relative to the average company. Factors which contribute to this are:

- guaranteed revenue streams;
- asset values underpinned by the RAV;
- no/low competitive pressure;
- no volume risk on revenues; and
- a well-established, transparent and stable regulatory regime.

There are no listed electricity only distribution networks to directly observe betas. However there are comparators which we can use for an estimate. Our calculation approach uses a market capitalisation measure of gearing rather than a total equity basis, with a two-yearly daily betas against the UK index. The raw equity betas and corresponding asset betas based on traditional corporate finance theory are shown below.

⁴⁹ Imrecon/ECA (2012) RIIO Financeability study.

Table 2.2: Beta estimates for comparators

Company	1yr average	3yr average	5yr average
Raw equity betas			
National Grid	0.42	0.43	0.54
SSE	0.53	0.51	0.55
United Utilities	0.44	0.45	0.52
Severn Trent	0.47	0.47	0.51
Penon	0.49	0.50	0.51
AVERAGE	0.47	0.47	0.53
Asset betas			
National Grid	0.24	0.24	0.26
SSE	0.38	0.35	0.38
United Utilities	0.20	0.20	0.22
Severn Trent	0.23	0.22	0.23
Penon	0.30	0.29	0.28
AVERAGE	0.27	0.26	0.27

Source: Bloomberg

A 0.27 asset beta (with no debt beta) using a traditional corporate finance approach would give an equity beta of 0.77 using re-levering using 65% notional gearing. This is below observed raw equity betas. The translation into an asset beta is based on gearing. Using a different gearing assumption which utilises the Bloomberg total equity figure, the one to five year asset beta averages fall to just 0.15-0.16 across the three averaging periods. This suggests that an estimate of 0.77 would be a distinctly conservative figures. Such a view is supported by qualitative discussion around ‘flight to quality’ and the ‘halo effect.’ An equity beta of 0.90 would be appear to be distinctly generous to the DNOs.

The CC have used a debt beta of 0.1 in the NIE provisional determination, which we understand is the same debt beta that Ofgem is to use for RIIO ED1. Based on the CC’s asset beta range of 0.30-0.45 for regulated utilities, we think that the low end of this range should be used. At the lower bound, a 0.30 asset beta with 0.10 debt beta would give a 0.67 equity beta. Based on the RIIO GD1/T1 ERP of 5.25%, an equity beta of 0.67 would give an overall cost of equity 1.2 percentage points below the cost of equity using a 0.90 equity beta.

Ofgem in their RIIO ED1 strategy consultation noted observed equity betas of 0.4-0.6 over the previous year and 0.5-0.75 over the previous three years⁵⁰. A lower equity beta adjusted is

⁵⁰ Ofgem (2013) ‘Strategy decision for the RIIO ED1 electricity distribution price control: Financial Issues’, March 2013, p22.

supported by our quantitative analysis, Ofgem’s own advisers – Smithers & Co and Imrecon/ECA, and perhaps most crucially Ofgem itself.

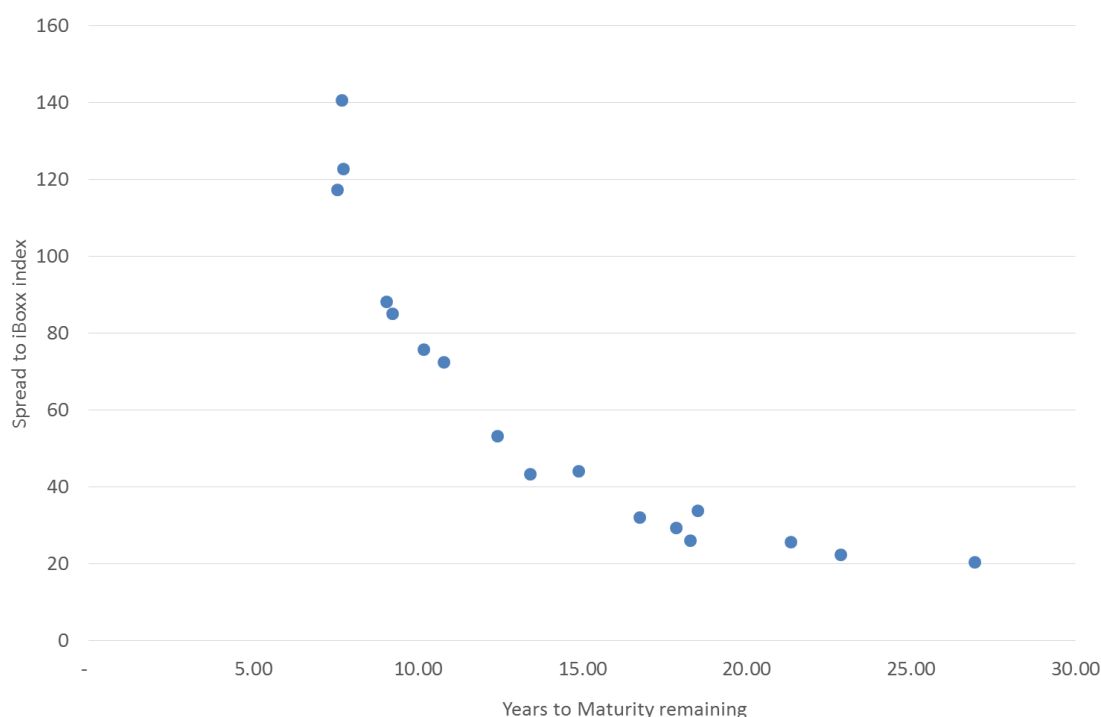
Interaction with the cost of debt

For RIIO ED1, we continue to support the use of debt indexation and the DNO business plans also supported this position. Both the cost of debt and cost of equity should be set at levels which Ofgem deem appropriate. We do not feel as though there is any justification to the position that a too low cost of debt indexation mechanism was accepted only on the understanding that the cost of equity was too generous. The CC do not indicate that indexation is not appropriate in general, only in the absence of pre-notification, so this would not be justification to revisit the cost of debt indexation mechanism.

There is evidence that the indices used in the cost of debt are overly generous, although with less headroom than we see in the cost of equity estimate. To give an indication of the level of returns of the cost of debt indexation mechanism, we have looked at debt issued in GBP by networks which mature after 2021⁵¹. This analysis involves 17 bonds, of which the majority are rated BBB+, four are rated A- and four are rated BBB.

We then compare the yields observed today on this corporate debt (given this should reflect current risks and perception of risks) to the allowed cost of debt spot rate (taken as an average of the previous ten days).

Figure 2.4 – Spreads of current DNO corporate bond yields to iBoxx allowed rate



Source: Bloomberg, Markit, CEPA analysis

⁵¹ With an average time to maturity remaining of 14.5 years.

The average difference in spot rate is 60bps. We have not adjusted the individual estimates to take into account differences from the shape of the yield curve, but utilise the average of these individual estimates rather than the points themselves.

Ofgem in the RIIO ED1 Strategy Consultation noted the ‘halo effect’ observed at the time of issue for regulated network bonds relative to the iBoxx cost of debt index. This was said to be 52bps and enough to allow the companies to recover additional costs and fees relating to issuance.

Our analysis indicates that this differential has not disappeared and if anything may be more prominent for electricity distribution networks, dealing with a BBB+ rated company (rather than the broad A and BBB implied by the model), so the 60bps spread could be a conservative estimate. In terms of the implications for the cost of equity, the current indexation approach (at least) sufficiently compensates debt holders and does not require upwards adjustments or changes to methodologies, especially given the extensive consultation and analysis done on such an approach. This approach would also be consistent with RIIO GD1 and T1, and given the earlier start date of the price controls, is likely to be well understood by investors when the RIIO ED1 price control commences.

2.3. Conclusion

Our cross checks indicate that a TMR of 6.45% is conservative, given the low volatility and expected returns set against excessive historic returns, MAR premia and increasing liquidity in the equity market. The data used to arrive at the above TMR may be overstating the true expected returns and in light of this data, a consistent Ofgem approach, cross checked against market evidence should lead to a TMR estimate which approaches that of the CC.

Looking at broader implications for the DNOs, the TMR is just one issue. We believe that there is a breadth of evidence (from Ofgem’s advisers, Ofgem itself and CEPA) that points to a significant reduction in the equity beta as there are many positives from partaking in a regulated revenue model. Our cost of debt analysis finds outperformance of the cost of debt index by even BBB bonds issued by the DNOs, due to this ‘halo effect’. Despite this cost to consumers, we support cost of debt indexation for the overall benefits it can bring and do not think that there is any evidence that supports a re-examination of the cost of debt indexation mechanism at the present time.

The evidence points to both a lower TMR and a lower equity beta, whilst there is no reason to change the approach to setting the cost of debt, especially given that the purpose of the consultation was to discuss consistency of approach and reducing regulatory risk. We reject that in setting a lower cost of equity that Ofgem would need to change its approach and reject criticisms of the CC approach relying on contemporary rather than historic information.