SP Energy Networks response to consultation
10th January 2014

Ofgem Consultation on methodology for assessing the equity market return for the purpose of setting RIIO price controls
Issued 6th December 2014

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SP Energy Networks response to Ofgem Consultation on methodology for assessing the equity market return for the purpose of setting RIIO price controls

Introduction

In the light of the Competition Commission's (CC's) provisional determination for Northern Ireland Electricity (NIE), Ofgem is consulting the methodology for assessing the equity market return for the purpose of setting RIIO price controls. However, for the reasons explained further in our responses to Ofgem's consultation questions, we do not consider that it is appropriate for Ofgem to change its methodology at this late stage of RIIO-ED1. Furthermore, we do not accept that the CC's provisional estimate of the equity market return is appropriate for the RIIO-ED1 price control period, which runs from April 2015 to March 2023.

Moreover, it remains essential that DNOs are able to attract and retain funding from investors in a global capital market. DNOs are predominantly financed by international companies, global infrastructure funds and sovereign wealth funds. All of these allocate capital across countries and sectors on the basis of relative returns.

There are unprecedented demands for the funding of infrastructure investment. The OECD report on Infrastructure to 2030, published in 2006/07, estimated global infrastructure requirements to 2030 to be in the order of US$50 tn. The International Energy Agency also estimated that adapting to and mitigating the effects of climate change over the next 40 years to 2050 will require around US$45 tn or around US$1 tn a year.

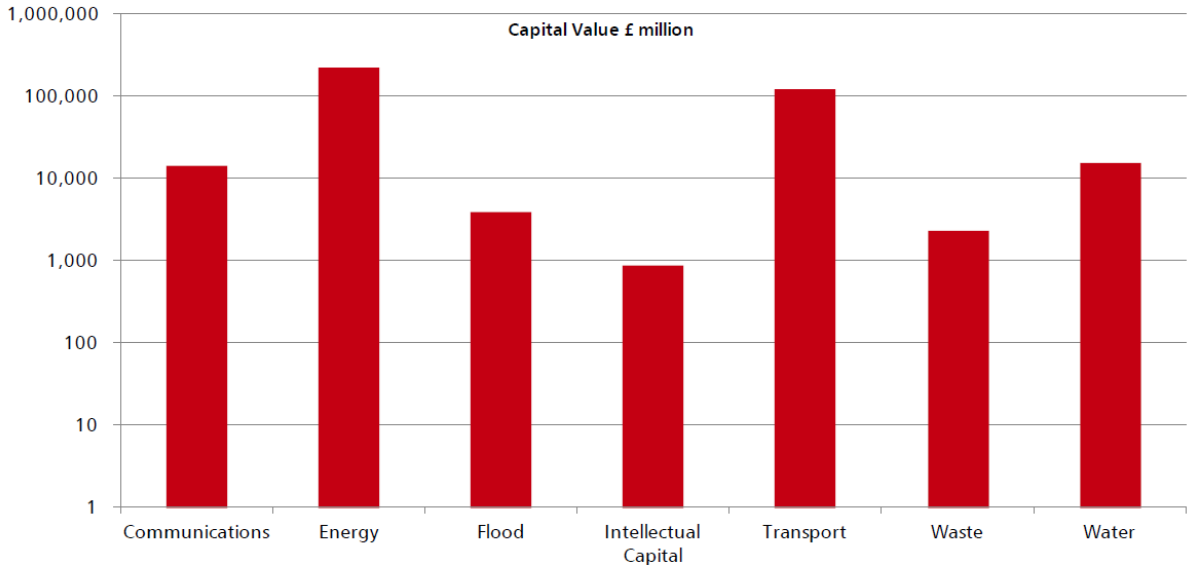
In the UK, DECC has acknowledged the need for £200 bn of investment in our energy infrastructure by 2020. The UK's National Infrastructure Plan 2013 states[1]:

"The overall value of the pipeline has increased from over £309 billion to over £375 billion of investment, made up of large individual projects and capital programmes of investment worth £50 million and over."

and

" Most of the investment is in energy (over £215 billion) and transport (over £120 billion)."

[1] HM Treasury, "National Infrastructure Plan 2013", p26, December 2013



Source: HM Treasury Major Infrastructure Tracking Unit

RWE npower has published[2] the Future Report that projects that up to £330 bn of investment in the power sector will be needed by 2030.

Analysts and rating agencies have already warned that too low a return would fail to attract sufficient funding, given the increased risks and the unprecedented increase in investment requirements.

Changing the methodology at this late stage of the RIIO-ED1 price control review would be inappropriate, as:

1) Current contemporary market does not support a reduction in the total market return;
2) The CC's determination for NIE is provisional and we expect the point estimate cost of capital to be revised upwards, in response to submissions from stakeholders;
3) RIIO-ED1 will run until March 2023, well beyond the end of NIE's price control period, when forward rates project rising interest rates;
4) It is inappropriate to read across the CC decision only on some of the WACC parameters but not others, such as gearing and the beta factor, as this could lead to greater inconsistency between Ofgem and the CC.

[2] "ENERGY AND THE ECONOMY THE 2030 OUTLOOK FOR UK BUSINESSES", A report commissioned by RWE npower

In conclusion, contemporary evidence justifies at least maintaining RIIO-T1 and GD1 assumptions about the equity market return. Although the risk free rate and equity risk premium have been affected by the financial crisis in recent years, the UK economy at last seems to have begun to recover. For RIIO-ED1, which is in place through to March 2023, it seems more appropriate to rely on long term historical data and long term equilibrium values, as OFGEM has done in the past. Assuming an equity beta in the range of 0.9 to 0.95 would imply a cost of equity in the range 6.7 to 7.0%.

The points above are expanded upon, together with more detailed answers to Ofgem's specific consultation questions, in the following sections.

A direct translation of the Competition Commission's estimates to DNO cost of equity allowances

Do you agree with our direct translation of the CC's equity market return estimate to DNO cost of equity allowances?

In our view, it is not appropriate to seek to apply a "direct translation" from the CC's provisional determination for NIE, which operates under a different regulatory regime, with fewer incentive mechanisms, lower equity exposure, and shorter timescales compared to RIIO-ED1.

Our view is based on the following considerations:

1) The CC's determination is provisional and the CC may adjust its final determination in response to submissions from stakeholders, including NIE and investors;
2) The CC is only forecasting to September 2017, whereas RIIO-ED1 runs to March 2023
3) Ofgem's "direct translation" of the CC's estimate would result in an inconsistent balance of risks and returns across the sectors that Ofgem regulates.
4) It is inappropriate to read across the CC decision only on some of the WACC parameters but not others, such as gearing and the beta factor, as this could lead to greater inconsistency between Ofgem and the CC.

1 CC provisional determination

In its provisional determination the CC has proposed the 50th percentile in its plausible range for NIE's WACC, which is much lower than the average percentile the CC has chosen in its four most recent decisions on the cost of capital.

- In the Bristol Water determination, the WACC range was 3.8-5.0% and the point estimate was 5%, which is the 100th percentile in the range;
- In the Heathrow report, the WACC range was 4.0-5.2% and the point estimate was 5.1%, which is the 92nd percentile in the range;
- In the Gatwick report, the WACC range was 4.1-5.5% and the point estimate was 5.3%, which is the 86th percentile in the range; and
- In the Stansted report, the WACC range was 4.2-6.0% and the point estimate was 5.6%, which is the 78th percentile in the range.

In the past, the CC has recognised that the consequences of over- or under-estimating the WACC are not symmetric. It has therefore typically chosen a value towards the top end of its range when deciding where within its identified range to set the allowed rate of return. Given the importance of incentives and innovation to RIIO-ED1, it is essential not to discourage essential investment, in the face of considerable uncertainty, by setting a point estimate as low as proposed for NIE.

The CC's argument for the proposed change rests, at least in part, on research conducted by Dimson, Marsh and Staunton (DMS) which the CC interprets[3] as:

"suggesting a clear relationship between real interest rates and real returns on equities and bonds in the subsequent five year period."

However, the most negative periods of real interest rates have occurred in periods of high inflation, when inflation has exceeded nominal interest rates. It seems more likely that the apparent relationship is due to the past response of restrictive monetary and fiscal policies to reduce high inflation, which is not relevant to the aftermath of the longest recession on record, when non-conventional monetary policies, such as quantitative easing have been adopted by Central Banks.

Furthermore, there are well known econometric difficulties with estimation of and inference from predictive regressions for equity returns, including those arising from:

- the use of overlapping observations,
- the persistence of variables,
- over-fitting within sample, and
- the results of data-mining.

Even if such a "clear relationship" exists, which is disputed, it would not be sufficient to enable Ofgem to forecast real returns on equities until the end of RIIO-ED1 in March 2023. Unlike the NIE case, for RIIO-ED1, a forecast for the five year period to March 2023 would require knowledge of financial market conditions to March 2018, which is still over four years in the future.

Moreover, Dimson, Marsh and Staunton themselves have concluded[4]:

"Given our current state of knowledge - based on evidence from 16 countries spanning 104 years – the historical record should be the starting point for forecasts of long-run stock market returns".

Indeed the CC itself acknowledges:

"The interpretation of the evidence on market returns remains subject to considerable uncertainty."

Stephen Wright, a joint author of the Smithers' reports, in recent evidence[5] to the Australian Energy Regulator (AER), summarised his position as:

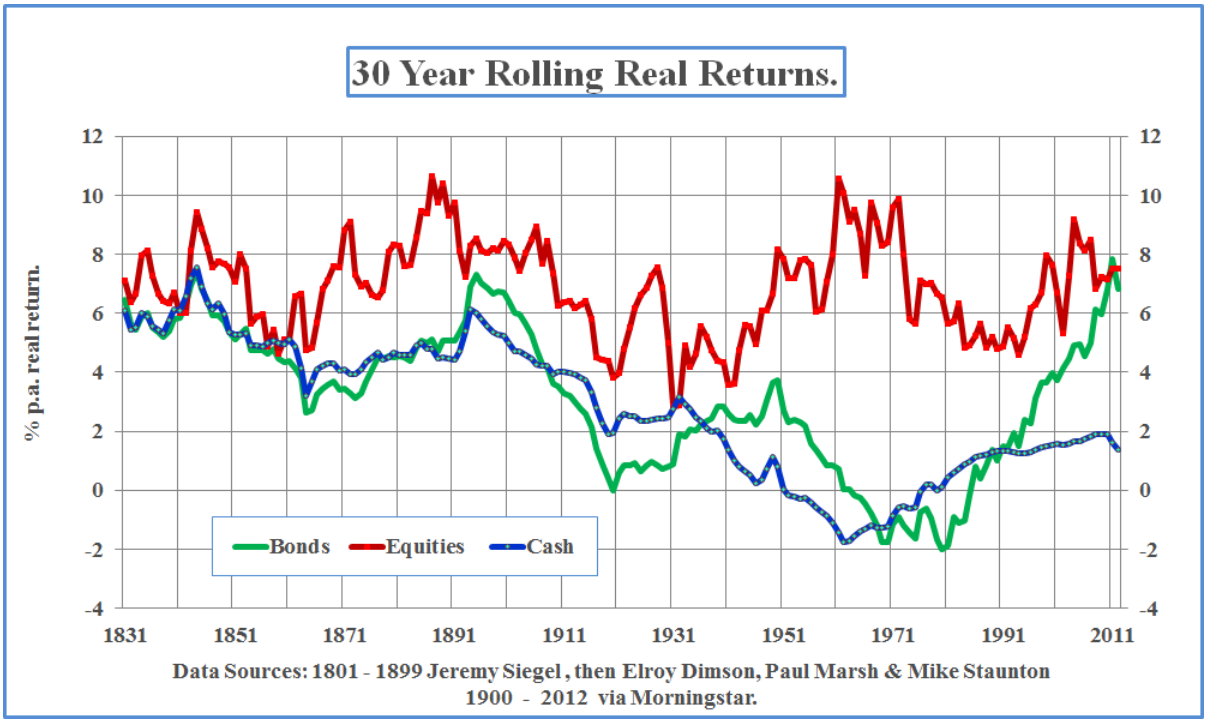
[3] The CC refers in the accompanying footnote to Credit Suisse Global Investment Returns Yearbook 2013, Figure 5.
[4] Dimson E, Marsh P and Staunton M, "Forecasting the market", Global Investment Returns Yearbook 2004, February 2004, p 60

My views can be summarised as follows:

> *i. Both the real market cost of equity and the MRP are inherently unobservable. But of necessity regulators have to commit themselves to a particular set of assumptions about these unobservable magnitudes. My view, in line with the UK regulators, is that regulators should work on the assumption that the real market cost of equity is constant. This approach is supported by quite strong evidence. For any firm with β reasonably close to one, the assumed real market cost of equity is by far the most important figure affecting the cost of capital for regulated companies. Thus this methodology has the added advantage of providing a stable regulatory regime. I believe this has proved its worth in the UK.*
>
> *ii. Any other assumptions should be consistent with this core assumption. As a direct implication, whatever assumption is made on the risk-free rate, the implied equity premium must move point by point in the opposite direction.*
>
> *...*
>
> *v. Whilst point ii) necessarily applies that in my approach (and that of UK regulators), the (estimated) MRP and the risk-free rate must move in opposite directions, this phenomenon cannot be directly observed, since the true MRP is inherently unobservable. However there is a considerable body of academic research that would suggest indirect evidence of this negative relationship, both by looking at economic determinants of the MRP, and at the properties of implied risk premia on other assets, such as corporate and government bonds.*

[5] Wright, S (2012), "Review of Risk Free Rate and Cost of Equity Estimates: A Comparison of UK Approaches with the AER", 25 October

Stephen Wright has produced an updated chart from the Smither's report[6] (commissioned by the UK economic regulators and the OFT), which demonstrates the relative stability of total equity market returns over two centuries.

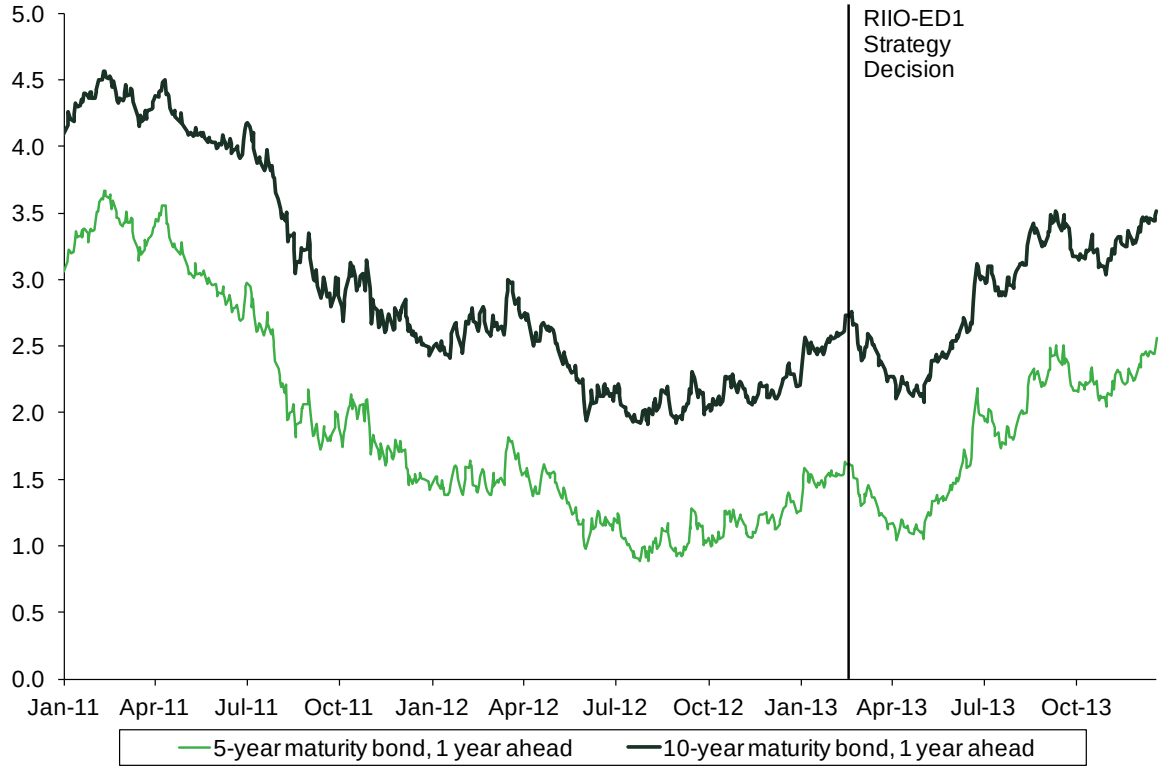


Nevertheless, if Ofgem were to decide to use short run data and rely more on forecasts of the future, this would introduce even more judgement into the estimation process. To ensure that such judgement is undertaken on a fully informed basis, Ofgem would need to draw on a far wider and more up to date evidence base than the CC appears to have done. Consequently, the CC's provisional estimates are not appropriate for the purpose of setting the RIIO-ED1 price control.

Furthermore, interest rates and forward rates have risen by about 100bps since Ofgem published the RIIO-ED1 strategy decision in March 2013. As shown in the next section, forward markets indicate that interest rates are expected to continue to rise.

[6] Wright, S, Mason, Miles, D (2003) A Study into Certain Aspects of the Cost of Capital for Regulated Utilities in the U.K., On Behalf Of:Smithers & Co Ltd, 13 February

Recent movements in forward rates (%)



Source: Bank of England, and Oxera analysis

During the financial crisis, measures of economic uncertainty, including those derived from financial markets and from surveys, increased significantly. Capital markets continue to be subject to considerable policy uncertainty, which decreases the degree to which contemporary market data can be relied upon.

The Bank of England has developed a measure of economic uncertainty which is calculated as the first principal component[7] of a number of individual published indicators. The authors conclude[8]:

"uncertainty about the macroeconomic outlook is likely to have a negative effect on asset prices because investors require compensation that captures the risk of holding the asset — a risk premium. During periods of heightened uncertainty, investors require greater compensation as insurance against future risks. This reduces asset prices and the financial wealth of investors holding those assets. Asset prices also tend to be more volatile during

[7] Principal components analysis is a statistical technique combining individual measures into a single summary uncertainty index. The method involves extracting from a set of related variables a smaller number of new variables, called principal components, which explain most of the variation in the original set. The first principal component accounts for the greatest amount of variation in the original set of variables.

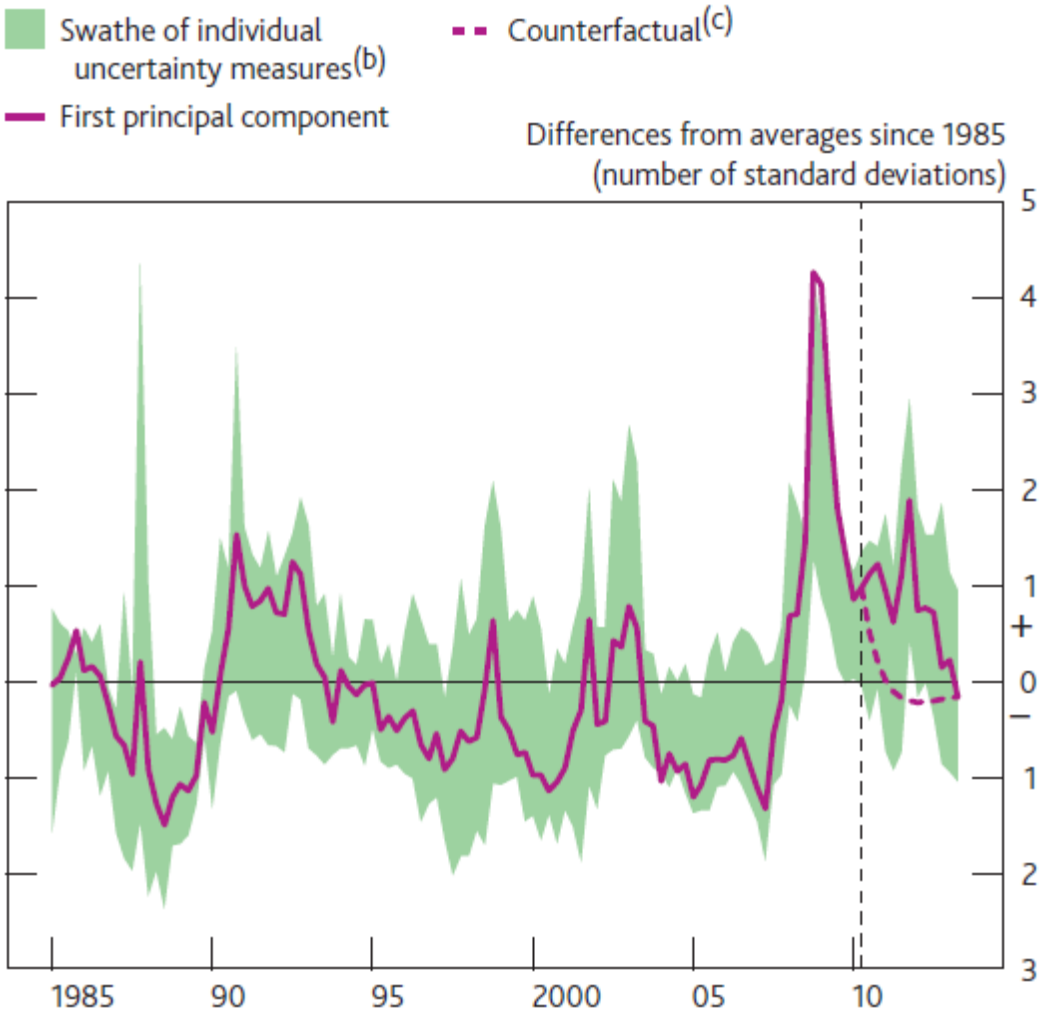
[8] Haddow, A, Hare, C, Hooley, J and Shakir, T (2013), 'Macroeconomic uncertainty: what is it, how can we measure it and why does it matter?', Bank of England Quarterly Bulletin, Vol. 53, No. 2, pp 100–09, June

periods of heightened uncertainty. Lower and more volatile asset prices are likely to discourage investment by making borrowing more expensive, since the cost of credit tends to be negatively related to the financial wealth of borrowers."

The Bank of England's subsequent analysis[9] indicates that there have been further unexpected developments since mid-2010, whereas the MPC's judgement in the August 2010 Inflation Report was that uncertainty would continue to fall back towards more normal levels.

[9] Christopher Hackworth, Amar Radia and Nyssa Roberts, "Understanding the MPC's forecast performance since mid-2010", Bank of England Quarterly Bulletin 2013 Q4, Volume 53 No. 4, 20 December

Measures of economic uncertainty[(a)]



Sources: British Bankers' Association, CBI, CBI/PwC, Consensus Economics, GfK, Institutional Brokers' Estimate System, London Stock Exchange, New York Stock Exchange/London International Financial Futures and Options Exchange (NYSE Liffe), Nexis, ONS, Times Newspapers and Bank of England calculations.

Notes:

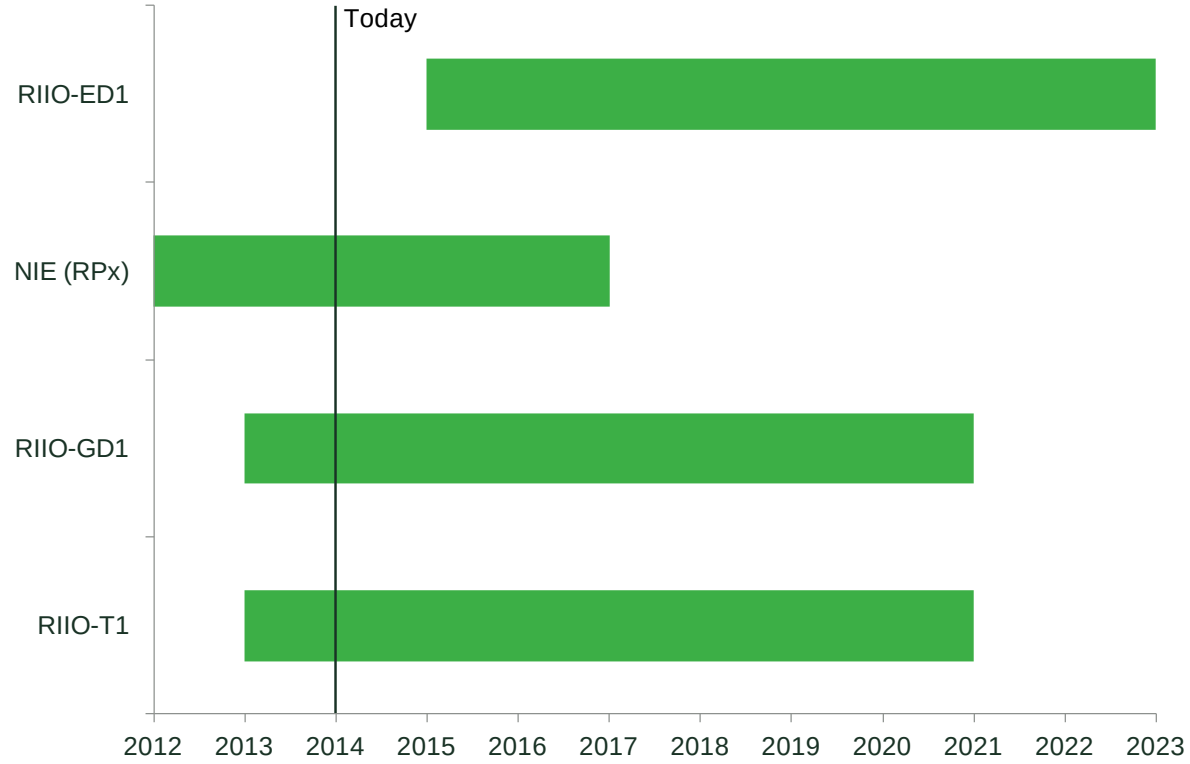
(a) Vertical dashed line is at 2010 Q2, the last full quarter of data available at the time of the August 2010 Inflation Report.

(b) For a full description of the series used in this swathe see Table B on page 103 of Haddow et al (2013).

(c) The dashed counterfactual line is constructed using the VAR model in Haddow et al (2013), assuming that there were no unexpected developments after 2010 Q2. For more details on this model see footnote 10 below.

2 RIIO-ED1 runs to March 2023

The RIIO-ED1 price control period runs through to March 2023, which is well beyond the period for which the CC is forecasting returns.



Source: Oxera illustration of Ofgem and NIAUR price control periods

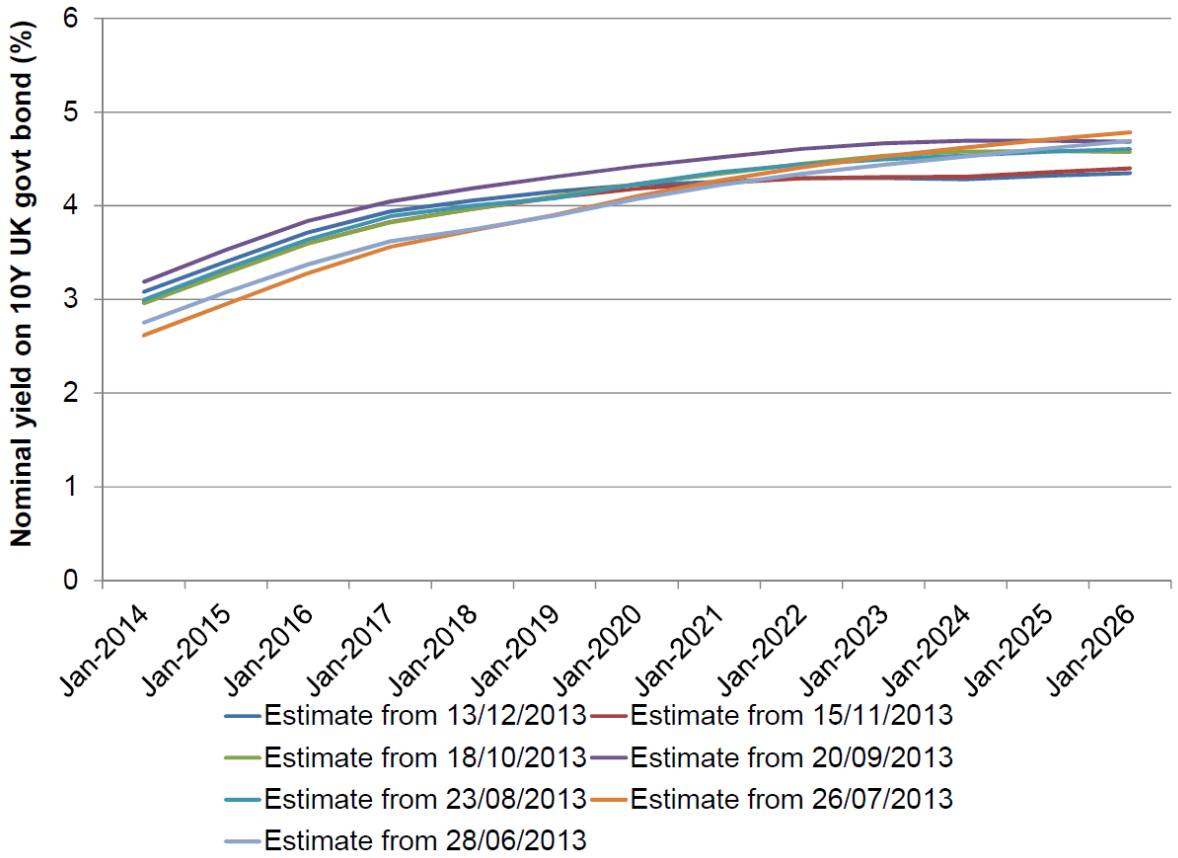
Nevertheless, if Ofgem were to give greater emphasis to forward looking data for RIIO-ED1, it would have to take a view on the macroeconomic and financial conditions that are forecast for the RIIO-ED1 period, which may be very different from current conditions. It is very unlikely that the current market conditions of low interest rates and expansive monetary policy will remain in place for the majority of RIIO-ED1. We note that the available indicators actually predict a significant change in macroeconomic and financial conditions over the next 10 years, casting doubt on the assumption that expected market returns over the RIIO-ED1 will reflect current exceptionally low returns. However, the vast majority of published macroeconomic forecasts do not typically extend to the greater part of the RIIO-ED1 period. Furthermore, we note that a General Election will be held no later

[10] As well as an uncertainty indicator, the model includes GDP, employment (measured in hours worked), CPI, Bank Rate and a measure of credit conditions to control to some extent for the interdependencies between credit and uncertainty. The model does not control for world demand. See Haddow et al (2013) for more details.

than May 2015, at the beginning of the RIIO-ED1 period, and the newly elected government may implement different policies than those currently being followed. At least one further General Election will subsequently be held before the end of RIIO-ED1.

The forward curve for UK nominal gilts is strongly upward-sloping indicating that the current very low government bond yields are expected to increase significantly during RIIO-ED1, especially following the unwinding of quantitative easing.

Forward Curve on UK 10 year government bonds



Source: NERA analysis of Bloomberg data

The range from the forward curve in the NIE Price control time period (2013-2018) is 2.5 to 4.2%, whereas the range in the RIIO-ED1 Price control time period (2015-2023) is 2.75 to 4.75%. Adjusting for these differing time frames, the assumption for RIIO-ED1 should be c50bps higher. Adjusting the CC's calculation for this, the range for the cost of equity would be 6.1 to 7.0%, assuming 65% gearing, which lies within Ofgem's original proposed range of 6.0 to 7.2% for RIIO-ED1.

The projected increase in long term interest rates is widely forecast, as quantitative easing is exited. For example, PWC concludes[11]:

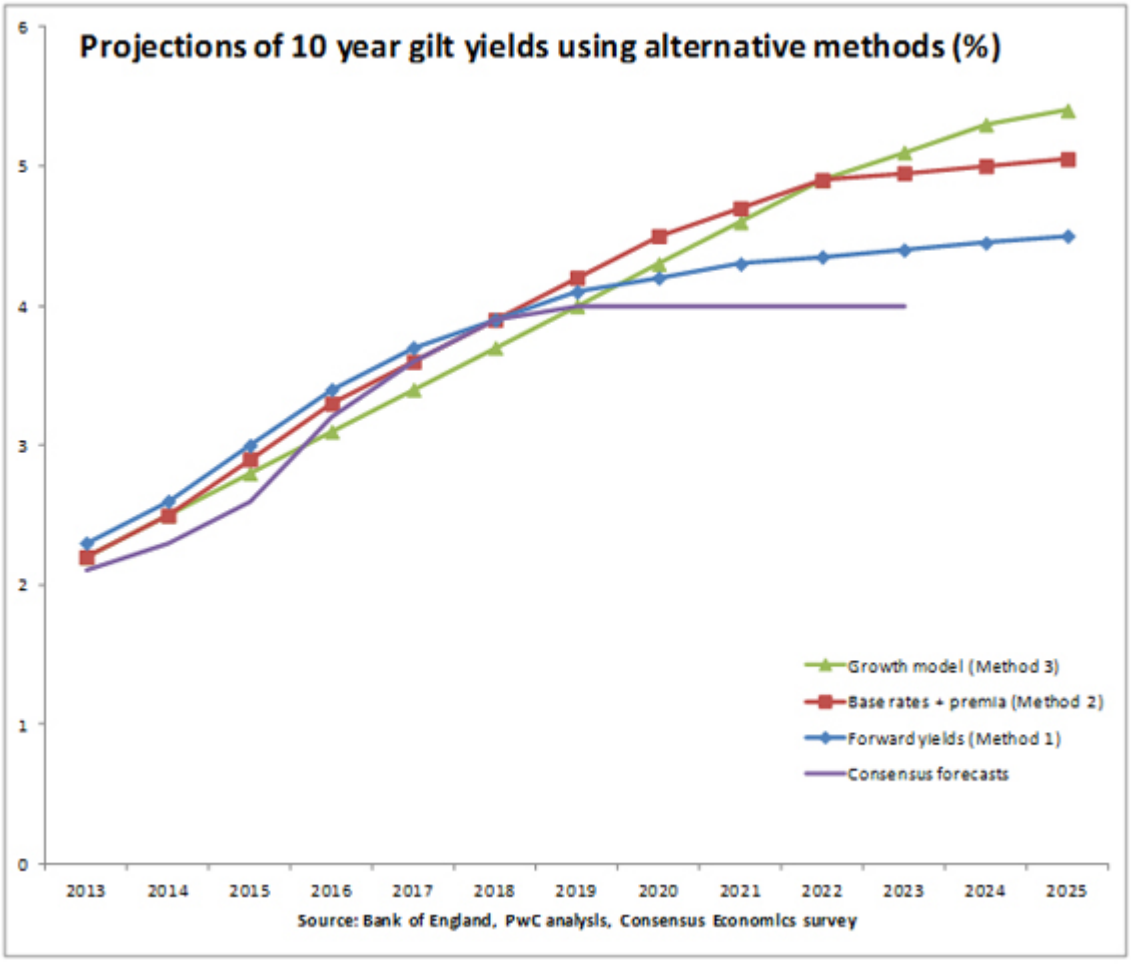
[11] PwC, "The trillion pound question – are gilts the next bubble to burst?", Chapter 4,UK Economic Outlook – July 2013

"I n summary, whichever method we use there are good reasons to expect 10 year gilt yields to rise significantly over the next decade, perhaps to around 4-5.5% by 2025."

John Hawksworth, chief economist at PwC, said:

"There may not be a speculative bubble in gilts, because there are good reasons for current low rates in terms of risk aversion, the effects of QE, pension fund behaviour and bank regulatory regime changes in recent years.

At the same time, recent yields look unsustainably low in the longer term as risk aversion returns to more normal levels, base rates rise and QE unwinds gradually over the next decade or so. Using various methods, we project a rise in 10 year gilt yields to around 4-5.5% by 2025 as this happens."



Similarly, in their 2014 long term assumptions, J P Morgan forecasts[12]:

[12] J P Morgan, "Long-term capital market return assumptions - 2014 estimates and the thinking behind the numbers", December 2013

"For UK government bonds, we lower our forecast for the 10-year equilibrium Gilt yield of 4.75%"

Barnett Waddingham, one of the UK's largest independent firms of actuaries and consultants, predicts[13]:

"From an economic theory perspective gilt rates "should" equate to the long run growth rate of the economy. The chart below [omitted] *shows this is broadly correct, focusing on nominal GDP growth compared to nominal yields.*

Looking forward, we therefore start with the, perhaps optimistic, view that the long run real growth rate of the economy remains at 2%p.a., in line with the historical average and will not be impacted by adverse demographics expected over the next 20/30 years. If we then assume that the Bank of England meets its inflation target of 2% CPI and allow for some differences between consumer prices, retail prices and the wider GDP deflator, we get our estimate of around 4.5%p.a. for gilt yields."

Such assumptions are used widely by institutional investors, including pension plans, insurance companies, endowments and foundations.

Assuming long run RPI inflation of 2.5 to 3% (i.e. 50 to 100bps above the CPI inflation target of 2%), indicates that the 2% real risk free rate, which has been used by Ofgem and other regulators, remains a reasonable assumption for the long term.

Furthermore, the cost of debt indexation mechanism is not a perfect pass-through mechanism of debt costs. In the current situation, where debt costs are expected to increase, the cost of debt index provides only partial protection against the impact of rising yields on debt costs. This risk is far more significant for RIIO-ED1 than NIE, as NIE's allowed cost of debt will be reset in 2017, six years earlier than for the DNOs. Any under-recovery on the cost of new debt is borne by the shareholder through the equity return, thus making it even more important that Ofgem's allows an appropriate return on equity for RIIO-ED1.

In summary, for the RIIO-ED1 period which is very different from the NIE price control period, we do not see any justification to move away from previous Ofgem and CC practice of relying on long run market returns and selecting a point estimate of around 7% for total market returns.

[13] Barnett Waddingham, "The price is right? Gilt-y questions for UK pension funds", October 2013

The CC may have to adjust its final estimate to address some of the methodological issues that stakeholders have raised, suggesting that Ofgem should not adjust its own methodology based on a provisional decision that we expect to be adjusted. The main methodological issues that we (and various investors) see are:

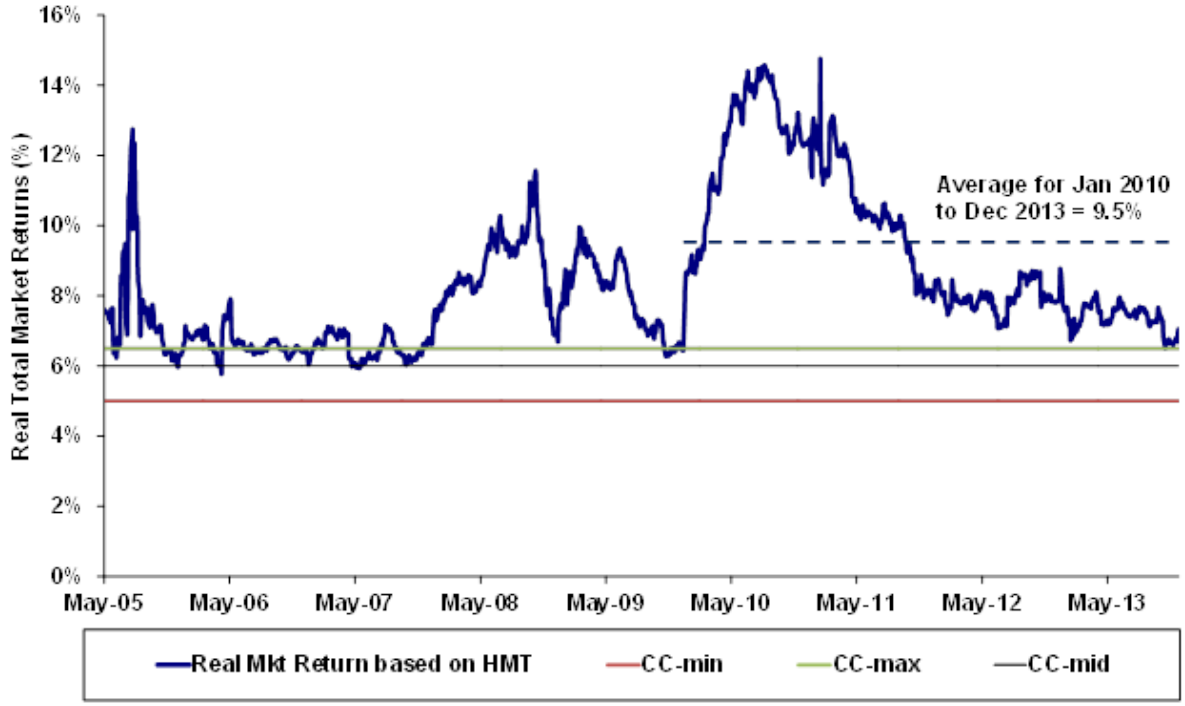
- Inconsistency with previous regulatory methodologies introducing additional instability;
- The CC's combination of forward-looking methods (DGM) with historic dividend growth rates is internally inconsistent and overlooks other market evidence such as Bloomberg and Bank of England data, which are based on forecast dividend growth rates; and
- The CC's argument that *"the long-term decline in RFRs (…) should correspond with an increased demand for equities and thus increased prices and lower returns"* is far from proven and is contrary to the advice from Smithers & Co on whom the CC and sectoral regulators have relied.

These issues are each discussed more fully in section 2.2 of the report[14] by NERA.

It appears that the CC's provisional determination was on implied market return calculated by Bank of England using data up to 3 February 2010 (i.e. four years ago). However, since then, implied market return has increased significantly. Based on the subsequent four years of data, Bloomberg evidence on TMR shows an average level of 9.5%, way above the CC's estimate of 6%.

[14] NERA, "Response to Ofgem's consultation on its methodology for assessing the equity market return for the purpose of setting RIIO price controls", 9 January 2013

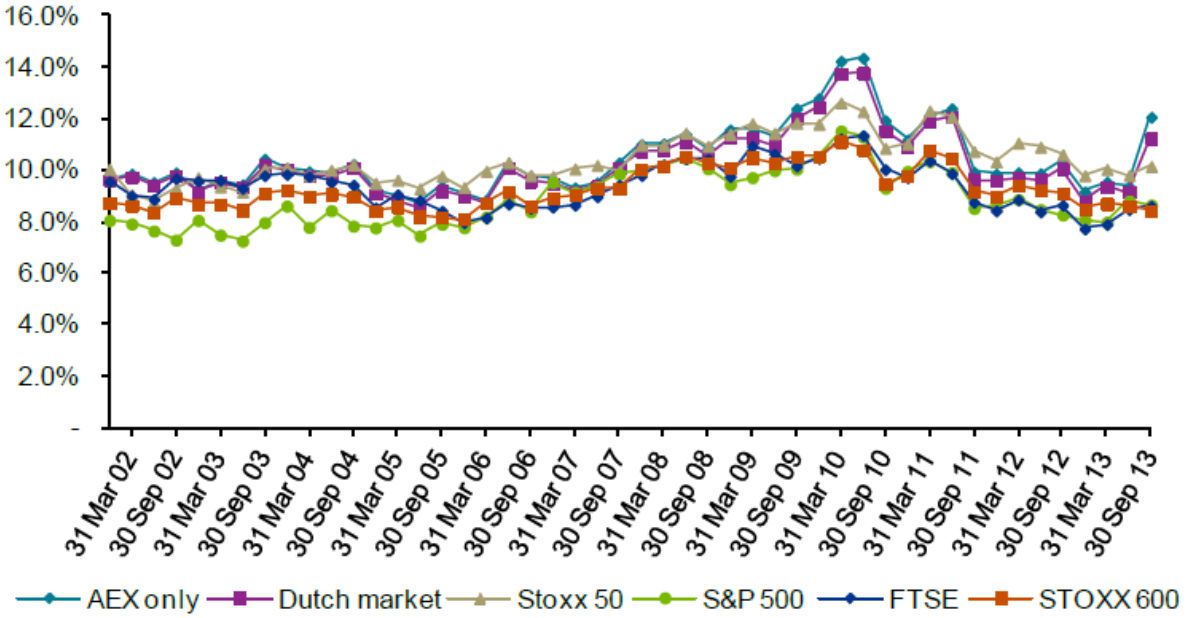
Bloomberg estimates of real market returns



Source: NERA analysis of Bloomberg and HMT data and CC decision

Likewise, KPMG's estimates of the implied equity return peaked during 2010 but have increased again during 2013.

KPMG estimates of implied equity return



Source: KPMG, Equity Market Risk Premium – Research Summary, p4, 16 October 2013

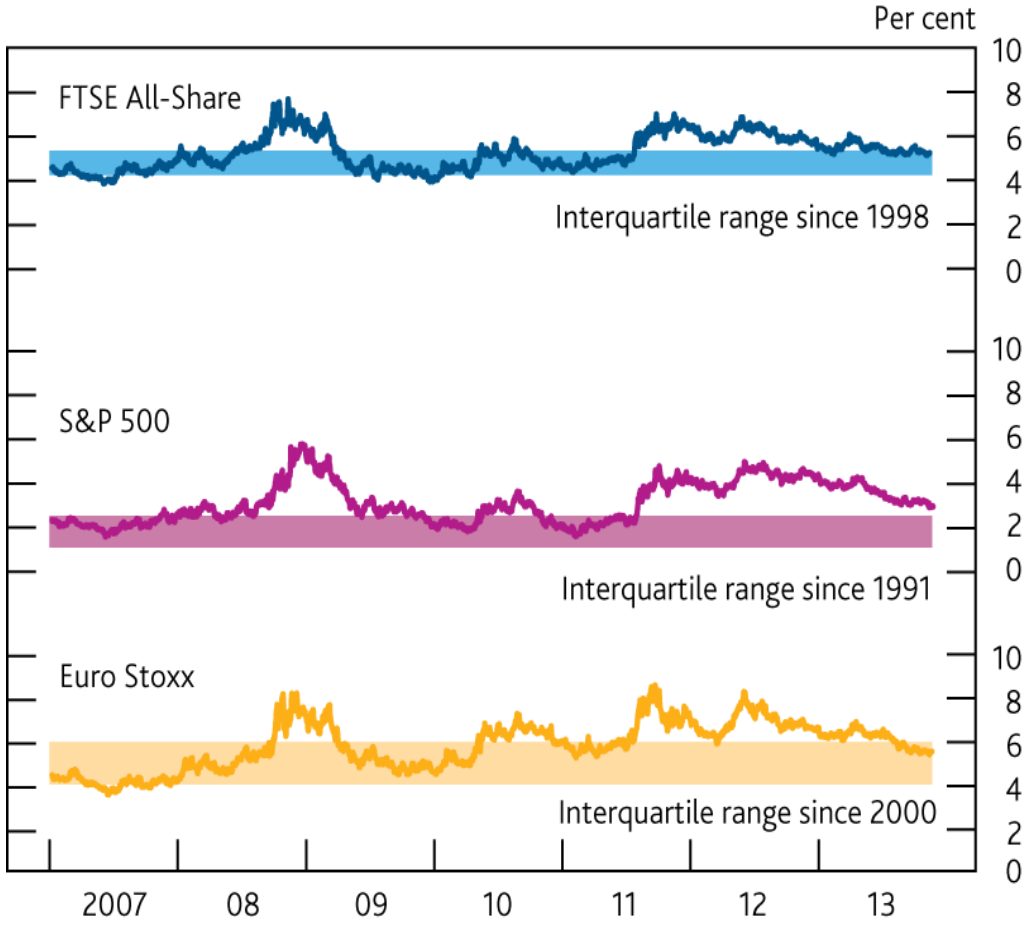
Similarly, the Bank of England's estimate of the equity risk premium (ERP) is significantly above the CC's implied estimate of the ERP. The CC refers to analysis[15] in the Bank of England Quarterly Bulletin that was published on 15 March 2010 and used data to 3 February 2010. The CC has not taken account of more recent estimates from the Bank of England[16], which show that the ERP subsequently rose and remains above its long term average, which offsets the lower risk free rates.

In summary, we do not agree with the CC's proposal that there is sufficient contemporary evidence to support changing the established UK regulatory methodology of using long term historical data to estimate equity returns. The historical data, taken from the Global Investment Returns Yearbook and Sourcebook 2013, indicates a real total market return estimate above 7%, consistent with Ofgem's strategy decision for RIIO-ED1. If we consider up to date forward-looking evidence, the implied total market return would be even higher. It appears that the CC have unduly focused on evidence which supports a reduction in the risk free rate but have not consistently considered contemporary evidence on other components of equity returns, including the equity risk premium, which is now higher.

[15] Mika Inkinen, Marco Stringa and Kyriaki Voutsinou: 'Interpreting equity price movements since the start of the financial crisis', Bank of England Quarterly Bulletin, 2010 Q1, 15 March

[16] Bank of England, Financial Stability Report, June 2013 and November 2013

Bank of England estimates of equity risk premia



Sources: Bloomberg, Thomson Reuters Datastream and Bank of England calculations.
Note: As implied by a multi-stage dividend discount model.

3 Inconsistency across the sectors that Ofgem regulates

One-to-one translation of the CC's provisional decision would lead to an outcome where the allowed rates of return for the energy networks regulated under RIIO-T1 and GD1 would be between 11% and 19% higher than those regulated under RIIO-ED1. This potential inconsistency would seem to arise from a reinterpretation of essentially the same evidence and is particularly hard to justify at this late stage of the RIIO-ED1 process. At RIIO-T1 and GD1 Ofgem confirmed "it is appropriate to rely on long-term estimates of the CAPM components to set the cost of equity assumption."

Comparison of WACC allowances across sectors Ofgem regulates

	ED1* 2015-23	T1 (NGET) 2013-21	T1 (NGG) 2013-21	GD1 2013-21
Gearing	65%	60%	62.5%	65%
RFR	1.25%	2%	2%	2%
Asset Beta (implied**)	0.38	0.44	0.40	0.38
Equity Beta	0.9	0.95	0.91	0.9
ERP	4.75%	5.25%	5.25%	5.25%
Cost of Equity (real, post-tax)	5.50%	7%	6.80%	6.70%
Cost of Debt (real, pre-tax)**	2.92%	2.92%	2.92%	2.92%
WACC (real, vanilla)	3.82%	4.55%	4.38%	4.24%
Percentage Difference in WACC		**19%**	**14%**	**11%**

*Source: NERA analysis of Ofgem documents. * Using Ofgem's CC translation. ** Calculated using debt beta of 0.1 for all (implies changes in asset betas compared to previous Ofgem decisions where Ofgem implicitly assumed a debt beta of zero). *** First year of T1 price controls. We understand that any changes in the cost of debt index will affect all companies in the same way although the relative difference will increase in the case of a drop in the cost of debt index because of the higher gearing assumption used for RIIO-ED1. E.g. if the index drops to 2.5% in the future, the difference becomes 12% to 21% compared to the other networks.*

Based on the above, if the CC's provisional decision for NIE were to be used for RIIO-ED1, there would be a significant difference between the allowed rate of return for RIIO-ED1 and GD1, whereas Ofgem have previously assumed have the same asset beta (when calculated using a comparable debt beta assumption).

Comparison with US return on equity

Moreover, in the US, electricity utilities have an average return on equity of 9.6%, which support a cost of equity of 8.0%, at 50% gearing. This is shown in the table below:

US Electric Utility Return on Equity

Utility	S&P LT Credit Rating	Authorised Return on Equity (%)	Debt/Total Cap (%)
Maui Electric Company, Limited	BBB-	9.0	42
United Illuminating Company	BBB	9.15	49
Niagara Mohawk Power Corporation	N/A	9.3	40
Potomac Electric Power Company	BBB+	9.36	51
Cross Texas	N/A	9.6	N/A
Wind Energy Transmission Texas	N/A	9.6	N/A
Baltimore Gas and Electric Company	BBB	9.75	51
Atlantic City Electric Company	BBB+	9.75	57
Avista Corporation	BBB	9.8	51
Puget Sound Energy, Inc.	N/A	9.8	53
Tucson Electric Power Company	N/A	10.0	59
Consumers Energy Company	BBB	10.3	48
Average		**9.6%**	**50%**
Real Cost of Equity		**8.0%**	

Source: NERA analysis of Bloomberg and US utility company data, Consensus Economics (October 2013);
Note: To calculate the real cost of equity, we assume an inflation assumption of 1.5%, from the Consensus Economics estimate for the US for 2013. We apply the Fisher formula to calculate the real cost of equity from the nominal return on equity. In our analysis, we exclude all companies with generation assets accounting for more than 50% of total assets, in order to compare with the CC NIE and Ofgem RIIO-ED1 determinations.

The table above shows that the average real cost of equity for US electric utilities is 8.0% at 50% gearing. This is substantially above the cost of equity allowed by the CC and Ofgem when compared at the same gearing.

The NERA report, section 2.4, also shows that IPART, the regulator for New South Wales, in Australia, following its own review, has adopted a different methodology from that proposed by the CC.

4 Inappropriate to read across the CC decision only on some of the WACC parameters but not others

It would be inappropriate to translate only the CC's equity market return estimate across to DNOs without considering other differences between the regulatory frameworks and other components of the WACC, including gearing and the beta factor.

For example, unlike the CC, Ofgem has decided to index the cost of debt. The index will continue to decline, which will further reduce the allowed WACC for DNOs. Unlike NIE, RIIO-ED1 exposes shareholders to the risk of a mis-match between the cost of debt and the index. If Ofgem adopt the CC's proposed methodology and the CC's estimates are translated into RIIO-ED1 in the way that Ofgem propose, we estimate that the vanilla WACC would be slightly below 3.7% in the first year of RIIO-ED1, i.e. 2015/16, and will then decline further. This would result in an unprecedented downward shift in the allowed WACC between successive regulatory decisions.

Beta factor

We do not believe that the underlying systematic risks of regulated networks have changed fundamentally since their underlying activities have remained largely unchanged.

The CC appears to accept this point when it states:

"13.167 Historical observations of beta measure companies' historic systematic risk profiles. We considered whether there could be a case for suggesting that NIE's beta will be lower or higher than in the past. We concluded that there was no strong case for thinking beta would be different than in the past and consequently that we could estimate beta from historical data."

Our preferred approach to estimating beta is to take a long term view of betas, and de-emphasise current estimates of beta. The asset beta estimate that the CC has proposed for NIE appears consistent with taking a longer term view of betas.

Regarding beta, the CC concludes:

"We estimate GB utility company asset betas to be in the range 0.35 to 0.45. We accept that these are not like-for-like comparators, hence we estimate NIE's asset beta towards the upper end of the range between 0.4 to 0.45 and hence its equity beta (at 50 per cent gearing and assuming a debt beta of 0.1) to be 0.7 to 0.8."

Assuming a range of 0.35 to 0.45 for the asset beta, as DNOs are GB utility companies, with 65% gearing, would imply an equity beta higher than 1 (range of 1.0 to 1.3), which is above Ofgem's proposed range of 0.9 to 0.95 for RIIO-ED1.

Since the RIIO-GD1 and RIIO-ED1 price reviews overlap for a period of six years, Ofgem will have to consider carefully whether the electricity DNOs will be able to attract financing for this period given returns available elsewhere. Adopting the CC's proposed approach would result in a potentially serious imbalance across sectors regulated by Ofgem, at a time when there is a widely recognised need to attract finance to fund investment in UK electricity infrastructure.

Retail Prices Index (RPI)

We do not accept that the observed movement in index yields, following the ONS decision, on 10 January 2013, to continue to publish the existing measure of retail prices (RPI), indicates that the risk free rate has fallen by 40bps. As Oxera explain[17] in more detail, in section 3.1.1 of their response, the direct translation of the one day movement in gilt yields into the risk free rate is not appropriate for a number of reasons, including:

1) Ofgem do not use the spot rate to estimate the risk free rate;
2) On any given day gilt yield movements will reflect a number of causes;
3) Prior to the announcement, indexed linked gilt yields would have reflected investors expectation of a wider range of outcomes, including the Bank of England's view of potential detriment to holders of index-linked gilts resulting from a change in the construction of the RPI index.

Furthermore, in its NIE decision, the CC suggests that the potential upward bias in the RPI measure of inflation could mean index-linked gilt yields might be biased downwards. The CC uses this as part of its justification for adopting a risk free rate which is higher than spot rates.

Moreover, Ofgem's proposed adjustment of 40 bps overstates the formula effect, which is shown more precisely by comparison of the newly published RPIJ (which calculates inflation from the same dataset of prices as the RPI but using the Jevons[18] formula instead of the Carli[19]) with the traditional RPI. Over the last 10 years, the RPIJ 12-month rate has been, on average, 0.47 percentage points lower than the RPI. From January 2010 to November 2013 the formula effect increased by only 26bps to an average of 63bps from an average of 37bps prior to then.

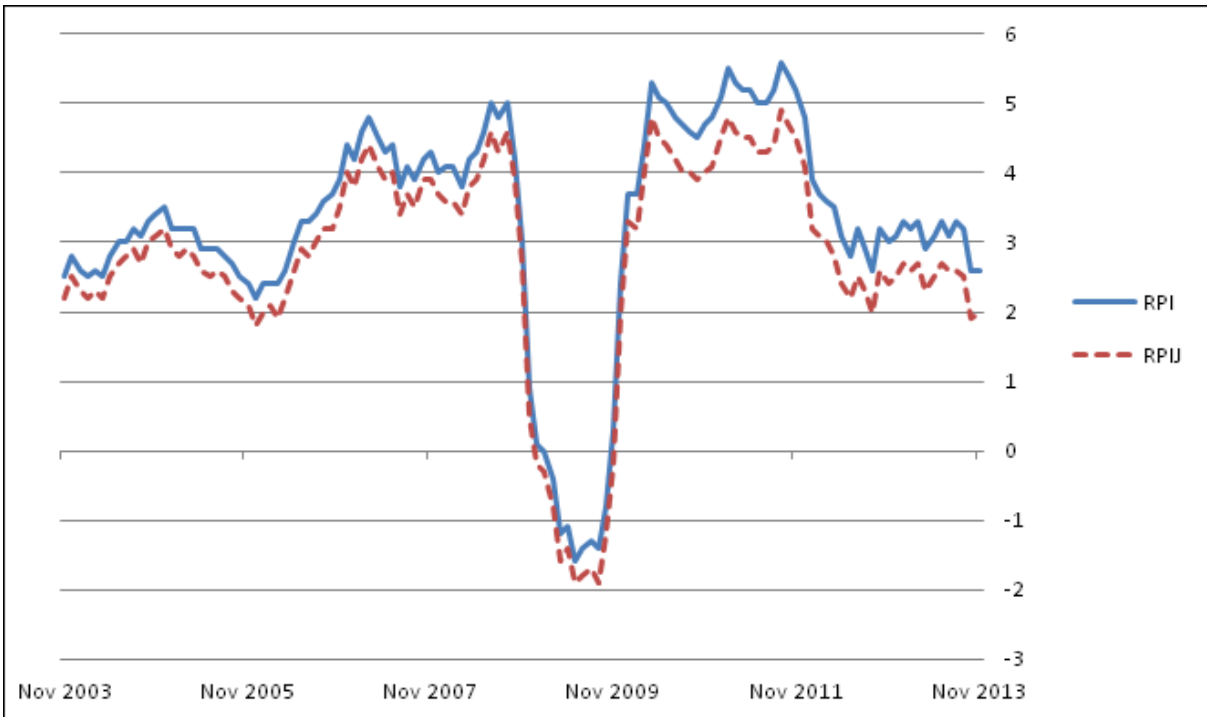
[17] Oxera, "Response to Ofgem's consultation on the methodology for assessing the equity market return in RIIO", Note prepared for Energy Networks Association, 10 January 2014

[18] The Jevons formula takes the geometric mean of the rate of change (also known as the 'geometric mean of price relatives') or the ratio of the geometric mean prices. Both of these calculations produce the same result.

[19] The Carli formula looks at the rate of change in each store and then takes the average of those changes (also known as the 'average of price relatives').

In addition, a structural break occurs due to the recent restrictions imposed on council tax increases, subject to the provisions of the Localism Act[20] 2011. Taking this into account would further reduce the apparent gap.

RPI and RPIJ 12-month rates



Source: ONS

In any case, it would not be appropriate to seek to resolve a perceived issue, arising from the measurement of price changes and the detailed construction of price indices, through an adjustment to the cost of equity.

Implications for risk

Can you provide evidence on the impact of giving greater weight to contemporary market evidence on perceived systematic and regulatory risk?

The credit rating agencies have warned that the lower returns, which are estimated by giving greater weight to recent market data, will result in downgrades.

In response to the CC's provisional determination, Fitch announced:

"Fitch Ratings says that it would likely downgrade Northern Ireland Electricity's (NIE) senior unsecured rating to 'BBB+' from 'A-' if the proposal included in the Provisional Determination

[20] If an authority proposes to raise taxes above the limit set by the Secretary of State they will have to hold a referendum to get approval for this from local voters who will be asked to approve or to veto the rise.

published by the Competition Commission (CC) on 12 November 2013 materialised in the Final Determination (FD)."

and

"We expect the reduction in cash flow generation, mainly driven by the lower regulatory allowed revenues proposed by the CC of GBP69m (6.4% lower than in UReg's FD), to negatively affect NIE's post-maintenance and post-tax interest cover ratio as calculated by Fitch and limiting the company's financial flexibility."[21]

Similarly, in response to Ofwat's announcement[22] of its forthcoming guidance on risk and reward for PR14, Moody's responded:

"A reduction in allowed returns, below the levels proposed by companies for AMP6, will be credit negative and will result in downward rating pressure".[23]

Giving apparently greater weight to shorter term and/or forward looking data would introduce a number of uncertainties into the regulatory process, including:

- a more volatile revenue allowance;
- greater divergence between the allowed return and average market returns over the regulatory price control period or the investment horizon, which tends to be longer for infrastructure investors;
- increased regulatory discretion and greater subjectivity inherent in the use of forward looking estimates.

There has also been a consensus amongst sector regulators in the UK that the long run approach is a sound basis for assessing required returns for capital intensive, critical infrastructure with long asset lifetimes. This consensus is reflected in the Joint Regulators Group (JRG) recent report[24]:

"3.7 In estimating the generic components of the cost of capital, regulators are aware of the need for consistency in relation to: the estimation of components in the WACC (eg the relationship between the risk-free rate, the market risk premium and the market return); and where appropriate, consistency of approach over time, so that 'swings and roundabouts' have the opportunity to even out over time."

[21] Fitch: Competition Commission's Provisional Determination Negative for Northern Ireland Electricity, 23 November 2013
[22]: Ofwat: Change to Ofwat's price review process, Information Bulletin 28/13, 19 December 2013
[23] Moody's: Ofwat announcement on change of price review process credit negative for UK water sector, 20 December 2013
[24] Joint Regulators Group (JRG), "Cost of Capital and Financeability", March 2013, p8

The use of long run data ensures that, over these long time horizons, investors receive a stable, well understood and reasonable level of returns. It reduces the volatility of WACC determinations and the knowledge that such an approach will endure into the future has, up to now, reduced materially regulatory risk, and hence the costs of financing infrastructure. The consensus amongst regulators, in our view, stems from an understanding that this approach will ultimately reduce materially costs to customers and consequently represents the best approach to protect current and future customers' interests.

By giving more weight to short-term data the CC's approach introduces additional volatility into the setting of the allowed rate of return, as historical averages are more stable and designed to "smooth out" short run volatility. Furthermore, allowed returns would become more pro-cyclical. Both of these factors will increase systematic risk in the utility sector, increasing the cost of capital, to the ultimate detriment of future customers.

Long term investors are unlikely to adjust their required hurdle rates significantly in response to short-term events unless they are convinced that a change in the available rates of return is permanent.

Against this context of stable return requirements by long term investors, any approach that transfers fluctuating short run rate risk onto the utility will affect adversely the perceived riskiness of an investment. For example, in its "cost and investment recovery" section, Moody's states[25]:

"Moody's will thus assess a regulator's willingness to keep the volatility and the uncertainty associated with operating and financial costs with the company or to pass these on to consumers"

Moreover, introducing volatility runs counter to the main investment rationale according to the Water UK investor survey[26], which is "stability and reliability".

The use of short-run data increases the risk of choosing a spot estimate that is unrepresentative of *average* conditions over the regulatory period. Using an estimate based on short-run, forward-looking data viewed at a single point in time runs the risk of selecting a point estimate that reflects a transitory position in the tail of the distribution of the required cost of capital. This severity of this risk is increased when the regulatory period is long and still some way into the future as reliable forecast data will only exist for a comparatively small part of the regulatory period and there will be a long period for which allowed returns and required returns will be out of line.

It is important to distinguish between the estimate of the unconditional expected equity return and ex ante estimates which are conditional on a particular information set. In the latter case, estimates should be updated as additional information arrives. However, the

[25] Moody's, "Regulated Electric and Gas Networks", Rating Methodology, August 2009,p 10
[26] Indepen, 2013 Survey of Investors in the water sector, A Report by Indepen for Water UK, June 2013

cost of equity, which is set for the whole of the RIIO-ED1 price control period, could not be updated in this way.

The use of short-term and forward-looking data introduces additional regulatory discretion and subjectivity. While there are established databases for historic returns there is considerably more uncertainty around forward-looking estimates where the choice from a number of competing data providers and assumptions will have a strong effect on the eventual estimate; a fact the CC itself noted as part of the Bristol Water decision. In selecting its preferred method, data provider and assumptions there is considerably more scope for the regulator to choose a point estimate from a wide range which, by its nature, remains subjective.

The use of forward-looking data therefore inevitably introduces an additional element of subjectivity into a sector where, according to the Water UK investor survey *"the top ranked risk for all investment types [is] regulatory risk"* already[27]. As such, any increase in regulatory discretion is likely to lead to an increase in perceived risk by investors. Transparency and limited regulatory and political discretion are central factors driving Moody's "Stability and Predictability" criterion[28]:

"We consider the characteristics of the regulatory environment in which a network operates. These include how developed and transparent the regulatory framework is; the regulator's track record for predictability and stability in terms of decision making; and its independence vis-à-vis politicians."

In conclusion, moving towards a more short-run approach to assessing equity market risk is likely to make allowed returns more volatile, to create a larger margin for error, and will increase regulatory discretion and risk.

Financing issues

Do you think changing our methodology for the equity market return would impact on interest costs for DNOs? If so, how would this need to be accommodated in our approach to the financial package or the regulatory package more widely?

As set out above, the CC's proposed approach would lead to greater volatility and reduced predictability in setting allowed returns for DNOS. The regulator's track record for predictability and stability in terms of its decision making is key to Moody's assessment of "Stability and Predictability of the Regulatory Regime" sub-factor.

"We consider the characteristics of the regulatory environment in which a network operates. These include how developed and transparent the regulatory framework is; the regulator's

[27] Ibid
[28] Moody's, "Regulated Electric and Gas Networks", Rating Methodology, August 2009,p 9

track record for predictability and stability in terms of decision making; and its independence vis-à-vis politicians."[29]

The regulatory framework for DNOs in Great Britain is currently rated "Aaa" for this sub-factor, which comprises 15% of Moody's overall rating.

Similarly, Standard & Poor's assesses "Regulatory Advantage". A "strong" rating for this factor requires that:

"There is a track record of earning a stable, compensatory rate of return in cash through various economic and political cycles and a projected ability to maintain that record."

Following publication of Ofgem's consultation on its methodology for assessing the equity market return, Moody's has issued[30] a Credit Opinion on Scottish Power, which warns that a reduction in the allowed return on equity for distribution would weaken credit metrics.

"Since the introduction of RIIO, Ofgem has committed to linking the allowed return on debt, updated annually, to a trailing average of a SPecific iBoxx indices. We believe returns, which impact the transmission business already and will affect the distribution businesses as well from 1 April 2015, could reach very low levels (relative to historical levels) in the second half of the decade as the fall in real market yields is reflected in the trailing average. This could weaken credit metrics - such as the interest cover ratio - at the level of these businesses, particularly for distribution if the allowed return on equity is reduced."

In addition to the credit rating agencies views' on stability and predictability, preliminary modelling of the DNOs indicates that the change in methodology would lead to a squeeze on cash flows and an adverse impact on credit metrics.

Investment incentives

How do you consider that the choice of methodology for determining the appropriate equity market return impacts on investment incentives? Is there any evidence that you can provide?

There has been a trend towards ownership of DNOs by infrastructure funds and investors which have a long term perspective. The OFT, in its stock take of infrastructure ownership and control found[31]:

"Forms of infrastructure ownership have changed markedly in recent years, with infrastructure funds playing an increasingly prominent role."

[29] Ibid, p9
[30] Moody's, Credit Opinion: Scottish Power Limited, Global Credit Research, 20 December 2013
[31] OFT, "Infrastructure Ownership and Control Stock-take", Final report: Main findings, OFT1290, December 2010, pp 4 and 37

and

"Physical infrastructure investments typically take a long time and require long pay-back periods, so these investments are more suited to investors with matching long-term time horizons. This is indeed one of the main arguments made by infrastructure funds, and a stated reason for their recent growth".

The importance of long term stability and returns for investors in the UK utilities sector is also confirmed by Hasting's submission[32] to the CC, in response to its provisional determination for NIE.

"Hastings takes what we believe is a relatively widely shared view that infrastructure assets are long-term investments. We therefore believe that a long-term view is appropriate when estimating key parameters such as the risk free rate and market risk premium, with these views influenced more by 10, 20 or even 30 year historical trends than current market spot rates."

and

"The compression of short term market returns due to excess market liquidity does in no way mean that investors will be willing to invest in long-term regulated businesses with illiquid capital at the same low short term realised returns. Investors will continue to require regulated assets to deliver long-term returns consistent with their long-term benchmarks for assets with comparable long-term risk profiles. It is for these reasons that long-run data series should be used to estimate the required market return and Beta estimates for regulated businesses."

The responses to Water UK's 2013 investor survey[33] confirmed the long term nature of the investment and the importance of stability and reliability:

"The most frequently mentioned objectives of investment in the water sector were: stability and reliability (68% of holders of unlisted equity and 53% of bond holders); and the long term nature of the investment (52% of listed equity holders)."

The cost of capital is a key factor used by investors to allocate capital across countries and sectors. A reduction in the cost of capital for RIIO-ED1 would reduce the attractiveness of investing in electricity distribution businesses in the UK.

Eight-year RIIO price control period

[32] Hastings Funds Management, Submission in Response to Provisional Determination - Northern Ireland Electricity Price Control Review (RP5) (2012-2017), December 2013

[33] Indepen, 2013 Survey of Investors in the water sector, A Report by Indepen for Water UK, June 2013

To what extent do you think the merits of the alternative approaches to the assessment of the equity market return are affected by the eight-year RIIO control period?

With a significantly longer period until the end of RIIO-ED1 in March 2023, the uncertainty surrounding the forecast equity market return is much higher than in the NIE case. Contemporary market data becomes significantly less relevant to estimating the expected equity market return through to 2023. RII0-ED1 extends significantly beyond the period for which there are robust forecasts of expected market conditions. Using contemporary market would increase the potential error in the estimate of the equity market return over the whole of the RIIO-ED1 price control period.

Nevertheless, the expected risk-free rate is expected to increase, on average, by more than 50bps beyond the end of the NIE price control period until the end of RIIO-ED1. Similarly, available indicators project a significant change in macroeconomic and financial conditions over the next ten years.

Any potential short run benefits, which themselves are uncertain, from using contemporary market data to estimate the equity market return would be outweighed by the costs of greater inaccuracy in the remainder of the RIIO-ED1 price control period.

Such errors would increase the likelihood of the need to re-open the RIIO-ED1 price control, part way through the period, which would further increase regulatory uncertainty.