An international perspective on cost of equity trends for regulated utilities

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UK Regulatory Precedent shows falling Cost of Equity allowances, in light of falling government bond yields and utility asset betas

A Look Forwards shows regulatory price reviews (PR19 / H7 / RIIO2) will be made in an environment of negative real interest rates but more “normal” (pre GFC) asset beta levels

The Financial Literature points to a negative relationship between the RfR and the ERP

Evidence from the US and Scandinavia shows regulators have chosen NOT to reduce CoE allowances in the face of falling government yields

Evidence from Continental Europe shows regulators have tended to reduce CoE allowances but many regulatory decisions are currently under appeal (e.g. Germany, France)

Asset betas of utilities are bouncing back from lows seen during the GFC and driven by their “defensive” stocks status

Concluding Remarks
UK Regulators have been reducing the CoE allowance post GFC

Source: NERA Analysis of Regulatory Decisions
UK Regulatory Precedent

Government bond yields have been falling in the aftermath of the GFC, although UK Regulators have generally not strictly relied on the latest evidence when setting RfRs

Source: Bank of England, Bloomberg and analysis of regulatory decisions
UK Regulators have chosen to interpret the low yield environment as leading to lower Total Market Returns on risky assets.

Source: NERA Analysis of Regulatory Precedent
UK Regulators have also generally reduced beta allowances, supported by empirical evidence of falling betas for “defensive stocks” during the GFC (“flight to quality”).

Source: NERA Analysis of regulatory decisions. Note: For some regulators, we have adjusted the asset betas using zero debt beta.

Source: NERA Analysis of Bloomberg data. Asset betas calculated under 0 debt beta assumption.
A Look Forwards to the next price reviews

The next regulatory price reviews will likely be made at a time when real interest rates are negative… but betas are returning to more “normal” (pre GFC) levels.

Source: NERA Analysis of Bloomberg data
Are negative real risk free rates relevant for Utilities’ Costs of Equity? What does the Finance Literature say?

Is the reduction in government yields relevant? Substantial financial literature points to negative relationship between RfR and ERP

- **Finance theory** finds in times of uncertainty, investors overweigh “risk-free” assets while reducing equity exposure (“flight to quality”)

- **Empirical studies** (Smithers & Co., 2003) find that as a result, the TMR tends to be stable:
  
  “… there is considerably more uncertainty about the true historic risk-free rate, and hence the equity premium, than there is about the market return itself…. we summarize a range of evidence that the equity return has, over reasonably long samples, been fairly stable both over time…”

- **Leading economic institutions** recognize uncertainty leads to increased ERPs:

  - **Bank of England, Inflation Report, August, 2016**
    
    “There remains, however, substantial uncertainty about the nature of the UK’s future trading arrangement and the implications for competitiveness. This may have increased the risk premium required by investors to hold sterling-denominated assets.”

  - **Deutsche Bundesbank, Monthly Report, November, 2007**
    
    “In this context, the correlation between returns from stocks and long-term government bonds is a suitable measure of risk aversion... In times of heightened risk aversion, it is therefore often possible to observe that investors demand higher equity risk premiums or undertake shifts from stocks into secure government bonds (safe haven flows). The resulting contrasting price developments of stocks and government securities are accompanied by a negative correlation.”
Empirical evidence also supports a negative relationship between RfR and ERP.

Source: Bloomberg; decline in sovereign yields during the global financial crisis has been accompanied by an increase in the forward-looking ERP (derived based on dividend growth models).
US Regulators have chosen NOT to reduce CoE allowances for electric utilities in the face of falling government yields, implicitly recognizing inverse RfR – ERP relationship.

Source: Allowed returns obtained from Regulatory Research Associate, annual average of settled cases.
Some Scandinavian regulators have chosen to take a “long-term” approach and not reduced TMRs in the face of falling government bond yields.

**NOR:** Determination of long term “fundamental parameters” for Cost of Equity since 2012

- MRP and RfR for Cost of Equity determination based on “fundamental estimates” made by the national bank have been set at 2.5% real (RfR) and 5% (ERP), for the long term
- Other parameters updated annually;

**FIN:** Acknowledges relationship between RfR and MRP

- Uses a “best of 2” approach and takes the highest of short-run and long-run averages for RfR

**SWE:** Judicial decision requires long run approach (2013)

- Court rejects original approach taken by regulator and requires taking into account long run evidence (RfR as sum of long run inflation expectation and GDP growth, 4% nominal)
- New regulatory decision (2015) reduces the RfR but increases MRP to a similar extent.

Source: NERA Analysis of regulatory decisions
European Regulatory Precedent from Scandinavia

Finnish ED and ET determinations have generally not fallen through time

CoE, Real

Source: NERA Analysis of regulatory decisions
Central European Regulatory Precedent

Many central European regulators have reduced the cost of equity – sometimes resulting in appeals (e.g. Germany)

Source: NERA Analysis of latest regulatory decisions in Energy transmission / distribution.
Asset betas have increased post Global Financial Crisis as utilities seen as “defensive” stocks

The example of National Grid: Beta back to “normal” (pre-GFC) levels as correlation with the market and relative (absolute) risk are trending back to normal levels

\[ \text{equity } \beta = \rho_{\text{stock, market}} \times \frac{\sigma_{\text{stock}}}{\sigma_{\text{market}}} \]
Asset betas in Europe are already bouncing back in latest (2016) decisions.

Source: NERA Analysis of regulatory decisions.
The next price reviews (PR19, H7, RIIO2) will likely be made in an environment of negative / unprecedentedly low government bond yields;

Does this mean regulatory allowed cost of equity should be markedly lower? Not necessarily, because:

- Substantive academic literature and empirical evidence shows that TMR does not fall with RfR, as there is an inverse relationship between the RfR and ERP parameters;
- International regulatory precedent shows mixed data on relationship between Total Market Returns and Risk Free Rate;
- In the UK and Europe, we see betas returning to “normal” levels as the effect of the GFC unwinds.
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