Paper 3: Ofgem's Cost of Debt Index and the Cost of Equity

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1. Introduction

We are currently producing a report for the DNOs which looks at the risks that companies will bear under Ofgem's new RIIO framework. One of the issues that we have identified relates to the design of the new cost of debt index. Given the wider applicability of our findings, we thought it would be helpful to briefly summarise our analysis for the benefit of Ofgem and its cost of capital consultants prior to the publication of Ofgem's July 2012 initial proposals documents.

2. Analysis

2.1 Assumptions

The analysis we have conducted compares the value of Ofgem's index and the DNOs' actual cost of debt under a range of illustrative scenarios about future interest rates. Our intention has been to assess whether the allowed and actual costs of debt will react in a similar or dissimilar manner to any changes in market rates that occur prior to 31 March 2023.

In conducting this analysis we have assumed that:

- the DNOs' existing borrowings as at 31 December 2011 remain in place until maturity;
- existing debt is financed pound-for-pound by new borrowing at prevailing market rates on the date of maturity;
- the DNOs collectively need to raise an additional £500m per annum at prevailing market rates to finance new investment over the next ten years.

The third of these assumptions is obviously an indicative figure at this stage of the RIIO-ED1 process. We have also run other figures through our model and have confirmed that the overall story that we are about to tell does not change if we make other plausible assumptions about future financing requirements.

2.2 Scenarios

To illustrate our findings, we show below the results of three main scenarios:

- the actual cost of new debt and the spot value[1] of Ofgem's cost of debt benchmark is 3% from now until 31 March 2023;
- the actual cost of new debt and the spot value of Ofgem's cost of debt benchmark increases to 4% from now until 31 March 2023; and
- the actual cost of new debt and the spot value of Ofgem's cost of debt benchmark falls to 2% from now until 31 March 2023.

2.3 Results

Figures 1 to 3 plot the values of the DNOs' actual cost of debt and Ofgem's ten-year trailing average index in each of these scenarios.

[1] The references here to 'spot value' means the on-the-day value of the iBoxx indices less the on-the-day value of gilt market break-even inflation.

Figure 1: Prevailing cost of debt = 3%

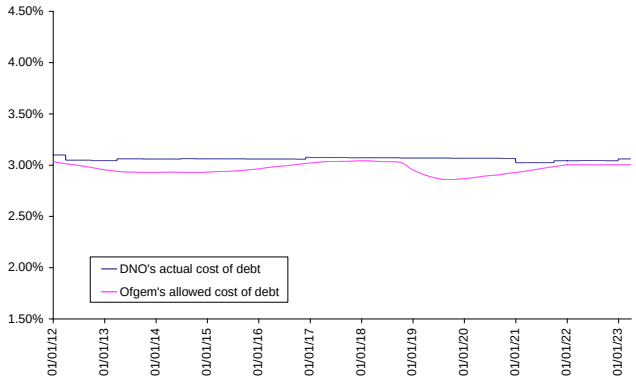


Figure 2: Prevailing cost of debt = 4%

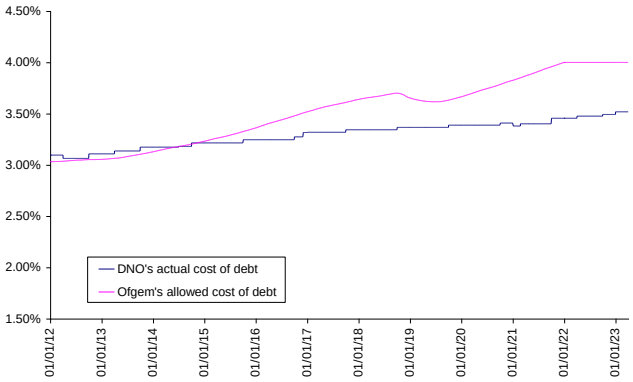
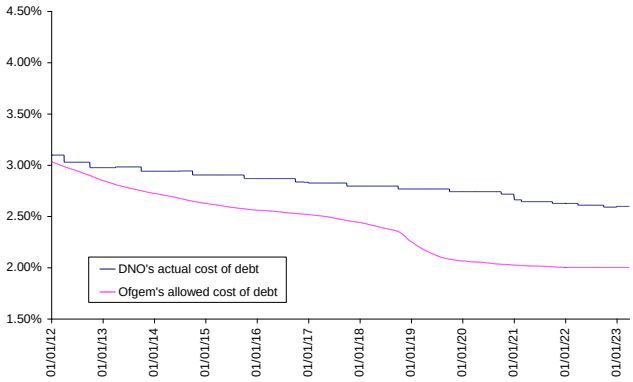


Figure 3: Prevailing cost of debt = 2%



The charts show that Ofgem's trailing average reacts much more than the actual cost of debt to changes in prevailing interest rates. This is because:

- the DNOs' actual cost of debt is kept relatively stable by the £8.7 billion of debt on existing balance sheets that will remain in place until the end of the RIIO-ED1 period (in comparison to a £2 billion refinancing requirement and other modelled new borrowing of £5 billion over ten years); while, by comparison
- Ofgem's cost of debt index completely refreshes itself over a ten-year period.

The scale of the gap between the two lines in figures 2 and 3 is quite surprising. A change in the value of Ofgem's index of +/-1 percentage point is accompanied by a change in the DNOs' actual cost of debt of less than 0.5 of a percentage point.

3. Implications

Our analysis implies that Ofgem's new approach to setting the cost of debt increases risk. This is for two reasons:

- first, the switch to an indexed cost of debt does not bring about a better match between the actual and allowed costs of debt. Because Ofgem's index over-reacts to changes in market interest rates, the gap that emerges between the actual and allowed cost of debt is actually slightly greater than it would be if Ofgem were to allow for a fixed cost of capital for the full

duration of the price control (e.g. if it were to allow a fixed cost of debt of 3% in the above scenarios); and

- second, and more importantly, the direction of the relationship between interest rates and DNO profits reverses as a result of the switch to an indexed cost of debt. Whereas currently the DNOs make money when interest rates fall within a price control period (i.e. because their revenues are fixed but the cost of new borrowing reduces) and lose money when interest rates rise, under Ofgem's new proposals the DNOs will lose money when interest rates fall (i.e. because the index and allowed revenues fall much more quickly than actual interest costs) and make money when interest rates rise.

To understand the relevance of this second factor, one has to refer to the CAPM framework that Ofgem and other regulators use to assess risk and return. CAPM says that it is not risk per se that determines the level of the cost of capital but systematic risk that cannot be diversified away within a large portfolio of assets. Specifically, the more correlated that an asset is with the market as a whole, the higher the rate of return that investors will seek; the less correlated an asset is, the lower the rate of return.

Up until now, the inverse relationship that exists currently between market interest rates and DNO returns has created an inverse correlation with the market as a whole. Monetary policy and interest rates tend to be tightened by policymakers when the economy is doing well and loosened when the economy is doing badly. This means that regulated networks have acted as a sort of hedge against macroeconomic risk. That is to say that the return on offer to equity investors in regulated businesses remains stable or increases as the returns on other investments fall – something that has been seen very apparent since 2008 – and vice versa.

Ofgem has effectively elected to eliminate this quality in its new RIIO framework and is instead making returns much more pro-cyclical. All other things being equal, this will push up the cost of equity and requires Ofgem to provide for higher equity returns to compensate for the higher systematic risk that shareholders will now face.

4. Conclusions

The extent to which the above issue applies to the individual companies that Ofgem regulates will depend on the scale of their future investment as a percentage of the starting RAV, combined with the refinancing activity that can be predicted based on their existing debt portfolios. Although we have not undertaken any modelling of the GDNs' and TOs' actual cost of debt, we think that the arguments set out above are potentially of material significance to the RIIO-GD1 review as well as to the RIIO-ED1 review. It is important therefore that Ofgem considers the model that we are providing alongside this paper when preparing its July 2012 proposals documents.

There are two actions that we think Ofgem might consider taking:

- first, once expenditure profiles are known, Ofgem should, as a minimum, take account of the increased exposure to systematic risk when selecting its estimate of the GDNs' and the DNOs' cost of equity; and
- second, Ofgem might think about altering the design of the cost of debt index for the GDNs and, subsequently, the DNOs so as to scale back at least some of the over-reaction that we identified in section 2. This might mean that Ofgem calculates a longer trailing average or that the weights in the calculation more accurately reflect the profile of financing and investment for the companies in question. (This is essentially the approach that Ofgem

endorsed in the case of SHETL when it was apparent that the index would under-react to changes in market rates.)

As a final observation, we note that these two things are not alternatives. Even if Ofgem alters its formula, indexation will still make equity returns less counter-cyclical/more pro-cyclical than they have been in the past. It is therefore necessary to provide for a higher cost of equity even if the over-reaction that we have identified is completely eliminated.