RIIO-T1 & RIIO-GD1: FINANCIAL ISSUES

A REPORT FOR CENTRICA

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CONTENTS

EXECUTIVE SUMMARY

This report provides comments on financial issues set out in Ofgem's December strategy document, and a potential framework for Ofgem to consider financeability issues.

Cost of debt indexation

Providing a point estimate for the cost of debt for an eight year control is not a viable option. Thus CEPA continues to support the implementation of a form of indexation on the cost of debt in order both to remove the inevitable headroom arising from a point estimate and to protect companies from uncertainty over the future cost of debt. Ofgem's proposed approach appears transparent and practical and will continue to allow efficient companies to finance themselves. Furthermore, it will provide companies with every incentive to beat the index as they will benefit from such gains.

Ofgem has already provided good evidence that the allowed cost of debt through the index will allow companies to recover the cost of new debt issuance. New issuance costs spiked during the financial crisis but have now returned to normal levels, of around the equivalent to 10 bps.

Cost of equity parameters

We support Ofgem's general approach to setting the cost of equity. Looking at the components of the cost of equity, our initial comments are:

- Market evidence to date supports a risk-free rate of 1-2%, the range indicated by Ofgem.
- We have concern over the range indicated for the Equity Risk Premium, as we see no evidence to support the higher end of the range indicated by Ofgem of 5.5%. Longer-term market data supports a range of 4-5%.
- There continues to be strong evidence that the equity beta is less than 1.

By way of a cross-check, data from market transactions and share price show continued premiums to regulatory asset base (RAB) and a strong appetite for infrastructure. The recent sales of the EDF and NIE networks are particular cases in point.

Notional gearing and returns

Notional gearing has two uses – as a parameter in the estimate of the vanilla WACC and in the modelling of returns under Ofgem's RORE analysis.

Our analysis illustrates that plausible changes in notional gearing are likely to have a modest impact on WACC, assuming no change to the asset beta. Changes in the asset beta would of course have a more dramatic impact on the WACC, but there is no good reason to think that the asset beta on the NWOs will change under RIIO.

RORE can be useful as an illustrative tool, showing how companies have delivered returns to their shareholders. However, there are dangers in using it for calibrating packages of incentives for different companies using different gearing assumptions. We would expect that the relative size of incentives would depend on the size of the assets in the business and the operational

risks, and be unrelated to the way that companies choose to finance, or indeed how Ofgem assesses that a business might choose to finance it. This is also consistent with Ofgem's approach within RIIO, which is to take a step back from those decisions which are most appropriately left with companies, of which one is financial structure.

Consequently we can see no clear reason arising to depart from Ofgem's established approach of setting the notional gearing across sectors.

Asset lives and financeability

As part of RIIO, Ofgem decided to align asset lives used for regulatory depreciation with economic lives. Ofgem has confirmed that all such changes will be done in a way that preserves the Net Present Value (NPV) of the regulated business - however, it also makes some comments about transition arrangements. In particular it says that it will adopt "appropriate" arrangements to ensure financeability, with the onus on companies to demonstrate why transitional arrangements may be necessary. With returns on the RAB set at a level which should deliver the network companies a reasonable return on capital, it is difficult to justify why a change in the profile of cash flows will need transitional arrangements.

We have gone on to illustrate the impact of changing assets lives on notional companies, including an assessment of the impact on net cashflow and key credit metrics. We have undertaken this analysis for gas distribution as a whole and for both a 'large' and a 'small' electricity transmission company.

For gas distribution, our stylised analysis shows that "key" credit rating metrics deteriorate slightly upon the proposed policy change, but that this would not be sufficient to breach the "key" indicative targets. This remains the case even if the eventual capex programme is substantially higher than currently planned.

For electricity transmission, not surprisingly, the proposed policy change has a more severe impact than for gas distribution. With no adjustments to financing structure, certain credit rating metrics for the network as a whole could deteriorate such that they do not meet their target values. However, the implied changes in financing structure to counter the increase in gearing and reductions in cash flow are in our view achievable.

We believe that this analysis should provide a useful framework for Ofgem to consider the need for transitional arrangements. It will of course be useful for Ofgem to cross-check any notional analysis against companies actual capital structures and flows as indicated by the companies.

We then show that there is strong investor appetite for regulated networks, and that the likely range of new equity required is financeable. Clearly it will be important to manage any new equity issues so as to avoid unnecessary discounting, but RIIO has been well flagged by Ofgem and companies will have plenty of time to plan any new issues.

Finally, arguments are made that investors 'can get better returns elsewhere' so may not support the necessary investment in the distribution and transmission sectors. We have seen no evidence of this - indeed our view is that Ofgem's proposals for the cost of equity are consistent with attracting capital to the sectors. We would, however, encourage Ofgem to review any evidence of alternative returns, whether in the UK or internationally, on a comparable basis.

Conclusion

We are supportive of Ofgem's approach to setting the allowed cost of debt and cost of equity, although we note that the upper end of the proposals on the range for the cost of equity is not supported by market evidence. We note that Ofgem's proposed approach to setting the allowed cost of debt could reduce revenues by £50 - 100 million per annum – a significant potential saving for consumers. We are, however, concerned that Ofgem may be inclined to provide unjustified transitional arrangements, to the potential detriment of consumers. We have suggested a framework through which transitional arrangements could be considered, and hope that this will be of assistance to stakeholders.

1. INTRODUCTION

Ofgem has launched price control reviews for electricity and gas transmission, and gas distribution, and is currently consulting on initial views of several aspects of the price control framework. In the summer of 2010, Ofgem published its decision to implement a new regulatory framework, known as the RIIO model (Revenue = Incentives + Innovation + Outputs). These price control reviews will be the first conducted under this new model.

The RIIO framework establishes some new principles for the cost of capital – including a trailing average approach to the cost of debt. In addition, Ofgem is proposing changes to its approach to regulatory depreciation, with respect to the capitalisation of repex and the asset lives used. These changes take place within the context of Ofgem's decision that financeability should be considered over the longer-term, with the onus on companies to manage short-term cash-flow issues, using equity injections if necessary.

The purpose of this paper is to contribute to regulatory thinking on the related issues in advance of the publication of Ofgem's March 2011 strategy paper. Rather than give a full review of all issues at this stage, this paper sets out initial thoughts on a few key areas of concern. It also provides a framework for considering the scale and availability of equity injections that may be required.

The paper is structured as follows:

- Section 2 addresses the mechanism to be used for indexation of the cost of debt, and briefly considers the cost of issuing debt;
- Section 3 focuses on the cost of equity, discussing each of the component parameters in turn before presenting evidence on investor appetite for regulated networks;
- Section 4 looks at the relationship between notional gearing and returns; and
- Section 5 presents initial analysis of the financeability implications of changes in depreciation policy, from the perspective of both potential movements in indicators of financeability and the ability of companies to raise equity to mitigate any such movements.

In addition, Annex 1 provides detailed results tables for the analysis presented in Section 5.

2. COST OF DEBT INDEXATION

2.1. Support for cost of debt indexation

CEPA has long argued for a form of indexation on the cost of debt[1]. We therefore fully support Ofgem's proposal to introduce cost of debt indexation, which will both protect companies from unexpected increases in the cost of debt and benefit consumers through the removal of headroom.

The impact of the removal of headroom is illustrated in a January 2011 note from RBS which comments upon the potential impact of cost of debt indexation:

'Under these recent proposals, the base allowed return looks set to be markedly lower than recent price controls. This is caused by the cost of debt being set on a ten-year backward looking basis, rather than a prospective basis… This level of return would be close to the actual cost of capital and would make us question whether any premium to RAB was justified in valuing the National Grid's UK businesses. We currently use a 5% RAB premium for valuation purposes [down from 14% RBS used to use]'.[2][3]

We are aware that companies have raised concerns that cost of debt indexation will 'force' companies to track the index and as such will deliver less efficient financing outcomes. We disagree with this for two reasons: firstly, companies will have a powerful incentive to beat the index as they will keep all the benefits; and secondly, prudent treasurers will, we expect, wish to see a portfolio of debt on their balance sheets to broadly match asset lives and to minimise refinancing risk.

2.2. Comments on specific approach

Ofgem's proposed cost of debt indexation mechanism seems a practical way of meeting its RIIO objectives, and in particular we support a mechanism which:

- Is applied to all debt, as the allowed cost of debt will be re-set annually and thus in part take account of the cost of 'new' debt. The alternative of setting a rate for 'embedded' debt and new debt separately is appealing, but Ofgem's approach is transparent and relatively predictable.
- Is based on a 10 year trailing simple average of Bloomberg 10-year BBB and 10-year A GBP corporate bonds, as an appropriate proxy for an investment grade NWO's debt. This index has the advantage of being outside of the influence of the NWOs and provided by a credible source. It broadly represents the range of credit ratings for the NWO's. Whilst some NWO debt will have been raised before the 10 year period, and of

[1] See for example CEPA's report for ORR/Ofwat on indexing the allowed rate of return: http://www.ofwat.gov.uk/pricereview/rpt_com_indexratereturn.pdf

[2] RBS, 10 January 2011, National Grid, Sell on UK regulatory worries.

[3] Note that part of the reduction in assumed RAB premium is driven by an assumed reduction in the allowed cost of equity, an assumed reduction in System Operator profitability, and no positive impact from incentives or financeability. Note that BoA take a slightly different view of prospective returns: '… even if allowed rates of return do fall in line with risk free rates, the new incentive mechanisms that are the essence of the new RIIO methodology should provide substantial new opportunities - Grid's track record in maximising incentive income is very good'.[3]

course some will be of substantially longer tenor, our analysis indicates that the 10 year trailing simple average of 10-year bonds will be a reasonable proxy over time for the actual cost of debt for an efficiently financed company.

We note that, given the spreads between ratings, Ofgem's proposal to use an average of BBB and A rated bonds will provide a strong incentive for companies to maintain a higher investment grade rating which will allow them to beat the index on average and of course retain the benefit.

We agree that there is no need for a separate allowance for debt transaction costs, as efficient NWOs are typically able to issue debt at a lower cost than the average of the above index – as Ofgem has illustrated.[4] It was the case that during the financial crisis the cost of new issuance was high, but it is also the case that conditions have now normalised, with debt issuance costs of around 1% being typical. This represent around 10bps in relation to the allowed cost of debt, and for investment grade companies their 'all-in' cost of debt will almost certainly beat the index on average.

We note that Ofgem has commented on the likely impact of debt indexation on allowed revenues. Whilst we agree that the likely impact will be small in percentage terms, given that a 10 year trailing average has been selected, we comment elsewhere[5] on how this might contribute to overall volatility and how this is best managed.

2.3. Conclusion

We support the introduction of cost of debt indexation as a mechanism to remove the inevitable 'headroom' that would need to be allowed in setting a point estimate for the cost of debt for an eight year control period. This mechanism will of course also provide protection to companies from unpredictable and to an extent uncontrollable financing costs at a time when significant new debt is likely to be required. We encourage Ofgem to proceed with the detailed design and implementation for the benefit of all stakeholders.

[4] Ofgem, Consultation on strategy for the next transmission and gas distribution price controls - RIIO-T1 and GD1, Financial issues, Figure 3.7

[5] CEPA, Uncertainty Mechanisms and the Predictability of Energy Network Charges, February 2011

3. PARAMETERS DETERMINING THE COST OF EQUITY

3.1. Overview

In this section we comment on Ofgem's proposed overall approach to setting the allowed cost of equity and on how the more detailed approach appears to have been applied to specific parameters.

We support Ofgem's overall approach of using CAPM, sense-checked against other approaches. In particular, we value the use of market data, especially from transactions, and consider this a more robust approach than the overly assumption driven Dividend Growth Model (DGM).

In the sections below we comment on the specific parameters and approach as set out in the December documents.

3.2. The risk-free rate

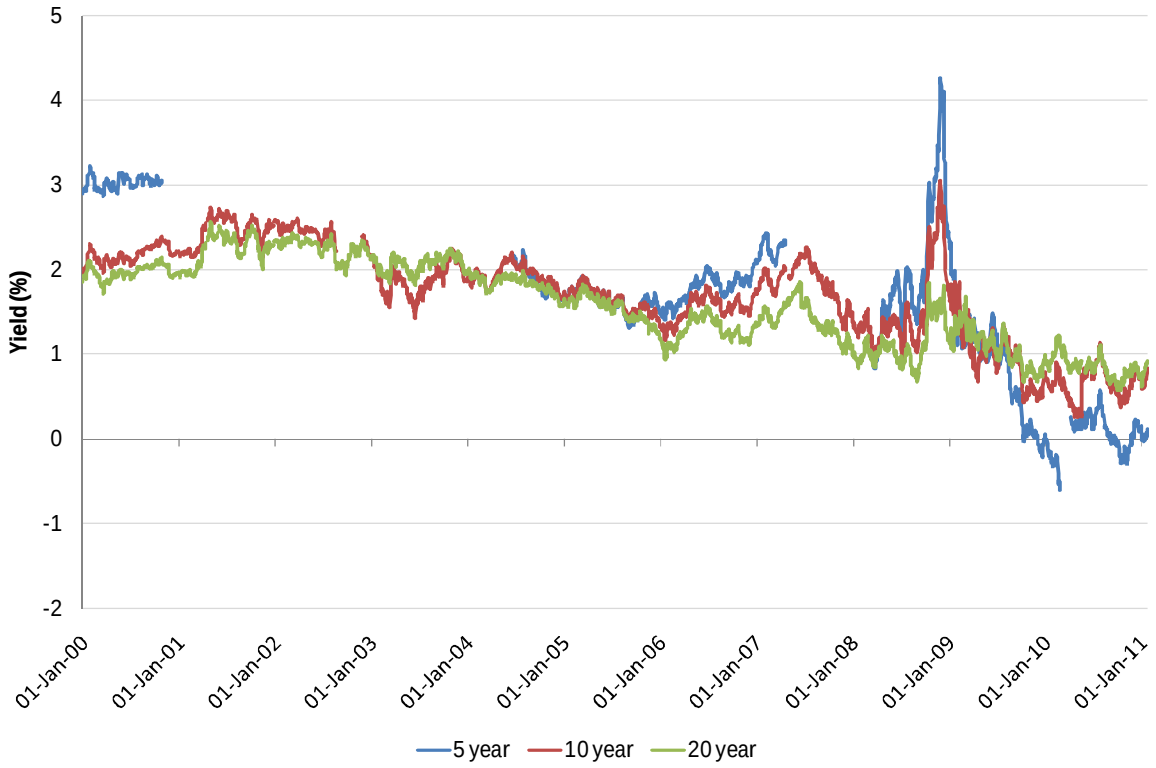
Our preferred approach is to consider the risk-free rates implied by Index Linked Gilts (ILGs), cross-checking this to deflated nominal gilts. ILGs continue to provide the best theoretical estimate of the risk-free rate, although we note the potential impact of distortions in the ILG market owing to the Minimum Financing Requirement (MFR), which has created an amount of inelastic demand for ILGs (particularly of long maturities) by institutional investors such as pension funds. We also suspect that the Bank of England's quantitative easing policy is responsible for the sharp decline in the yields on short-dated ILGs, and any regulatory decision that relies on ILGs needs to consider the possibility that this trend will be reversed during the control period.

We note that the Competition Commission ('CC') in its Bristol Water determination[6] noted that ILGs remain the most suitable source for estimating risk-free rates, and that long maturities appear most relevant since 'equities also have long (indefinite) maturity' and shorter-dated maturities may be affected by actions to address the recession. It went on to consider that long-dated ILG yields have remained constant at about 1% for five years, giving grounds to assume a lower risk-free rate. It also noted that there is **no evidence for risk-free rates of over 2%, and thus set a range of 1 - 2%.**

Figures 3.1 and 3.2 below provide further evidence that actual risk-free rates are well below 2%.

[6] http://www.competition-commission.org.uk/rep_pub/reports/2010/558Bristol.htm

Figure 3.1: Yields on UK index-linked gilts



Source: Bank of England

Table 3.1: UK ILG yield – Spot rates and trailing averages (as of 21 January 2011)

	5 year	10 year	20 year
Spot rate (21 January 2011)	0.1%	0.8%	0.9%
1 year trailing average	0.1%	0.7%	0.8%
5 year trailing average	1.2%	1.3%	1.1%
10 year trailing average	1.4%	1.7%	1.6%

Given the potential distortion in the index-linked market, our preferred approach is to sense-check risk-free rate estimates derived from ILGs against estimates from nominal gilts. To do so requires us to deflate the nominal yields on gilts by a measure of expected inflation. Absent direct estimates of long-term Retail Price Index (RPI) inflation expectations, we deflate the nominal yield by an RPI inflation rate that is consistent with the Bank of England's inflation target of 2.0% on the Consumer Price Index (CPI) – namely 2.7%. It should be noted that this deflator is lower than the current 'break-even' deflator implied by longer-term ILGs and as such avoids the potential bias in using current break-even inflation rates.

Figure 3.2 shows the movements in the deflated yield on nominal gilts over the past 10 years. Here the historical downward trend is not quite as clear as it is for ILGs, but it is still present.

Figure 3.2: Deflated yield on UK nominal gilts

Source: Bank of England, CEPA analysis

Table 3.2: UK deflated nominal gilt yield – Spot rates and trailing averages (as of 21 January 2011)

	5 year	10 year	20 year
Spot rate (21 January 2011)	-0.2%	1.0%	1.7%
1 year trailing average	-0.5%	0.8%	1.5%
5 year trailing average	1.0%	1.5%	1.7%
10 year trailing average	1.5%	1.7%	1.8%

We therefore consider Ofgem's proposal on the risk-free rate to be reasonable, and in particular the following statement: 'We propose to use an initial range for the risk-free rate of 1.4 - 2.0 per cent, where the lower bound represents a five-year average on 10-year ILGs and the upper bound corresponds to recent regulatory decisions including our position in DPCR5'.

3.2.1. Conclusion

Our view is that whilst the upper bound is not supported by current market evidence, it forms a reasonable forward-looking upper bound for the proposed control period.

3.3. Equity Risk Premium

CEPA's preferred approach to assessing the Equity Risk Premium ('ERP') is to look at long term market data, and especially evidence from Dimson, Marsh and Staunton's research as provided

in the Credit Suisse Global Investment Sourcebook. The 2010 Sourcebook shows risk premiums of 3.9% (geometric) to 5.2% (arithmetic).

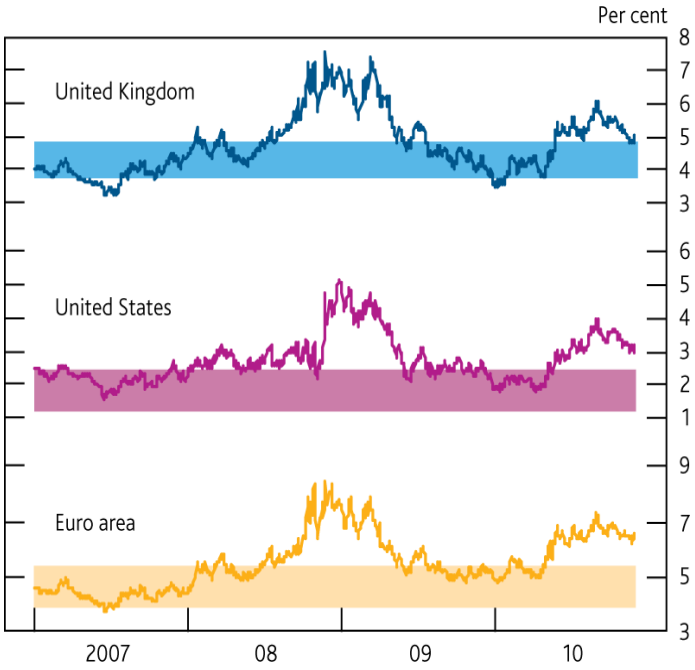
This is in line with the CC Bristol Water which looked at both historical and forward-looking approaches. The CC is relatively dismissive of forward looking approaches based on somewhat arbitrary assumptions about dividend growth, and **concludes that a range of 4 - 5% for the ERP is appropriate.**

Ofgem quote Europe Economics in its paper: 'Europe Economics also notes that there has been no consensus in the debate about whether the arithmetic mean or geometric mean presented by DMS is more appropriate. With this in mind, Europe Economics advocates a range of 4.0 - 5.5 per cent for the ERP, with the bounds corresponding to the DMS estimates rounded to the nearest 0.5 per cent'. It seems to us at best an unusual approach to round up to 5.5% from 5.2%.

Ofgem goes on to cite a June 2010 Bank of England report: 'The Bank of England calculates the ERP based on a multi-stage dividend discount model (also known as a dividend growth model or DGM). Figure 3.12 shows that, since 1998, the ERP has tended to lie in the range 3.75 – 4.75 per cent. The Bank's latest estimate (from June 2010) of the ERP is around 5.5 per cent, although these figures can be expected to have returned to trend since, as financial markets have begun to settle.'

Subsequently, the Bank of England has published its updated estimate as of December 2010 (see Figure 3.3 below). This shows a decline in the ERP from its mid-2010 peak of around 6% to around 5% – just in line with the historic (since 1998) interquartile range for the UK. The Bank of England's calculations suggest that while in the short term values of the ERP of 5.5% or higher are not uncommon, a range of 4-5% is more representative of the medium and long term.

Figure 3.3: International equity risk premia[7]



Source: Bank of England

It is concerning that Ofgem concludes that: 'In light of the analysis above, we propose to use an initial range for the equity risk premium of 4.0 - 5.5 per cent. While we note that the upper end of the range is high relative to regulatory precedent for the ERP, we consider it is still an appropriate upper bound given the level of economic uncertainty'. It appears to us that the upper end of the range is unsupported by any evidence. Estimates of the ERP have only exceeded 5.5% for limited periods, and at times of extreme stress in financial markets, and do not form the basis of a long term estimate.

3.3.1. Conclusion

We can so no evidence to move away from the range for the ERP of 4 – 5% as recommended by the CC. In particular, we see no justification for the upper end selected by Ofgem, and it is, in our view, inadequate for Ofgem to say that an upper bound of 5.5% is justified by 'economic uncertainty'. Furthermore, the risk premium is more likely to be driven by perceptions of relative risk between asset classes, rather than by economic uncertainty per se.

3.4. Beta

3.4.1. Comment on approach

Ofgem notes that 'Prior to DPCR5, we used an equity beta assumption of 1, whereas many other UK and European regulators have tended to apply a lower equity beta'. In our view there is clear evidence that the equity beta for regulated utilities is indeed less than one, although we note that

[7] Shaded areas indicate interquartile ranges for the implied ERP since 1998 for UK, 1991 for United States and 2000 for Euro area.

in practice Ofgem has moved away from specific estimates of the beta, preferring to consider the aggregate allowed cost of equity.[8]

In presenting estimated equity beta statistics, it is common for regulators to make the "Blume adjustment". This is based on the paper by Blume[9], which identified ways of improving beta estimation by assuming that estimated beta statistics tend towards 1 over time. Essentially, the null hypothesis for the beta, absent any other information, is that the beta is 1, and an appropriate estimate of the beta statistic should reflect this. The Blume adjustment, therefore, increases the equity beta estimate.

This may be an appropriate assumption for a lot of companies. For energy network companies, though, it seems very difficult to understand:

- The regulatory framework does provide a substantial underpinning for the revenues that companies can earn that is not available to companies in the market more broadly.
- Changes in GDP have only a limited impact on the changes in the revenues and profits of the energy network companies. Changes in GDP (and/ or expected GDP) are in contrast a major factor driving the future expectations of the performance of other companies, and thus the performance of the market index.

A priori, one would expect the beta statistic to be lower than 1, not 1.

Focused investors in utility and infrastructure companies make a case for investment in their funds that infrastructure is a different asset class precisely because it exhibits relatively low correlation with other (equity) assets. The investors in these assets do so precisely because they believe that they have, and will continue to have, a lower beta statistic than the rest of the market. This is supported by the CC Bristol Water commentary that increased economic uncertainty may make investing in regulated utilities more attractive compared with investing in other companies, which would lower the relevant cost of equity.[10]

We suggest that even if the Blume adjustment may have some attractions from a purely academic perspective, in the real world, using it to inform a judgement of the relative risks to an investor in energy networks it makes no sense.

Evidence provided below in Figures 3.4 and 3.5 confirms that the unadjusted equity beta is less than 1. Our estimates of companies' equity betas are sourced from Bloomberg, and are estimated based on rolling two year windows of daily returns for the relevant stock and the FTSE 100 Index. The values presented are for the unadjusted "raw" betas, i.e. they do not incorporate the Blume adjustment.

[8] See: Ofgem, Consultation on strategy for the next transmission and gas distribution price controls - RIIO-T1 and GD1 Financial issues, December 2010. Ofgem notes that "while our analysis [in this paper] is focused on the components of the CAPM ... we note that ultimately it is the overall cost of equity that matters. For this purpose, we will consider additional evidence as it becomes available over time".

[9] Blume, M.E. (1971). On the assessment of risk. Journal of finance, March 1971, p1-10.

[10] Competition Commission Bristol Water determination, Appendix N, Page 45 (http://www.competition-commission.org.uk/rep_pub/reports/2010/558Bristol.htm).

Figure 3.4: Equity beta for National Grid and Scottish & Southern Energy

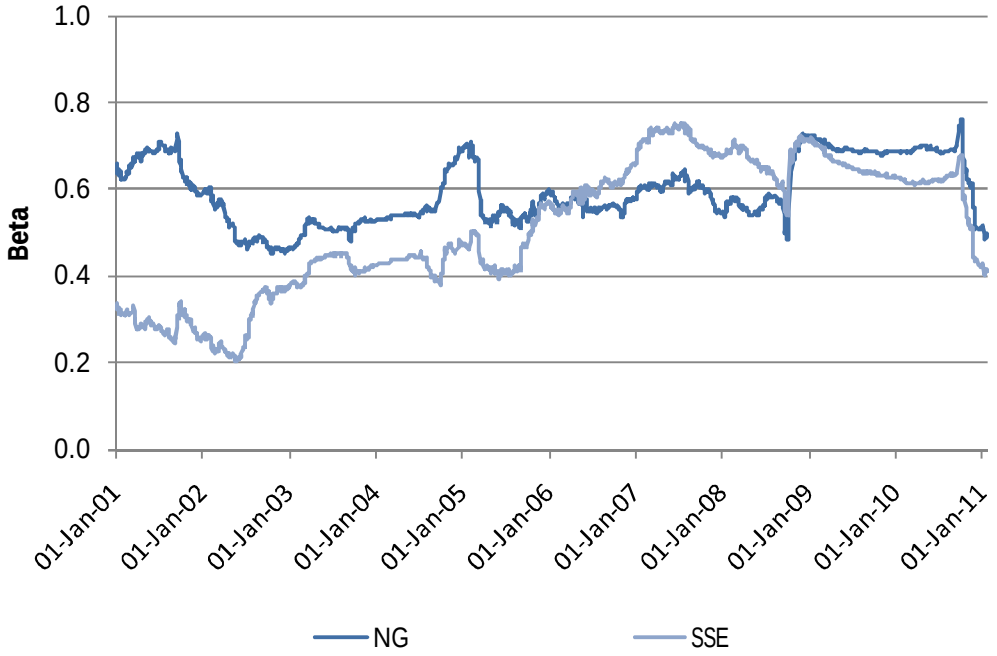
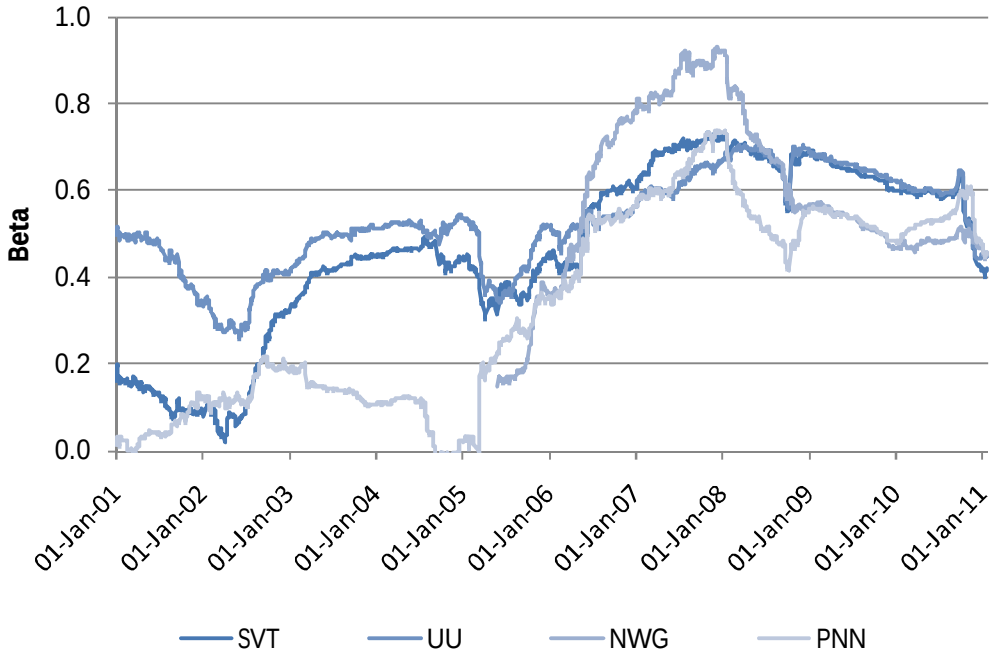


Figure 3.5: Equity beta for Severn Trent, United Utilities, Northumbrian and Pennon



The data presented shows that the beta statistic has been relatively stable over 2010, until the last few weeks when it has been falling. The fall is likely to be due to utility shares recovering less slowly than the market as a whole, which might be expected with an equity beta of less than 1.

3.4.2. Conclusion

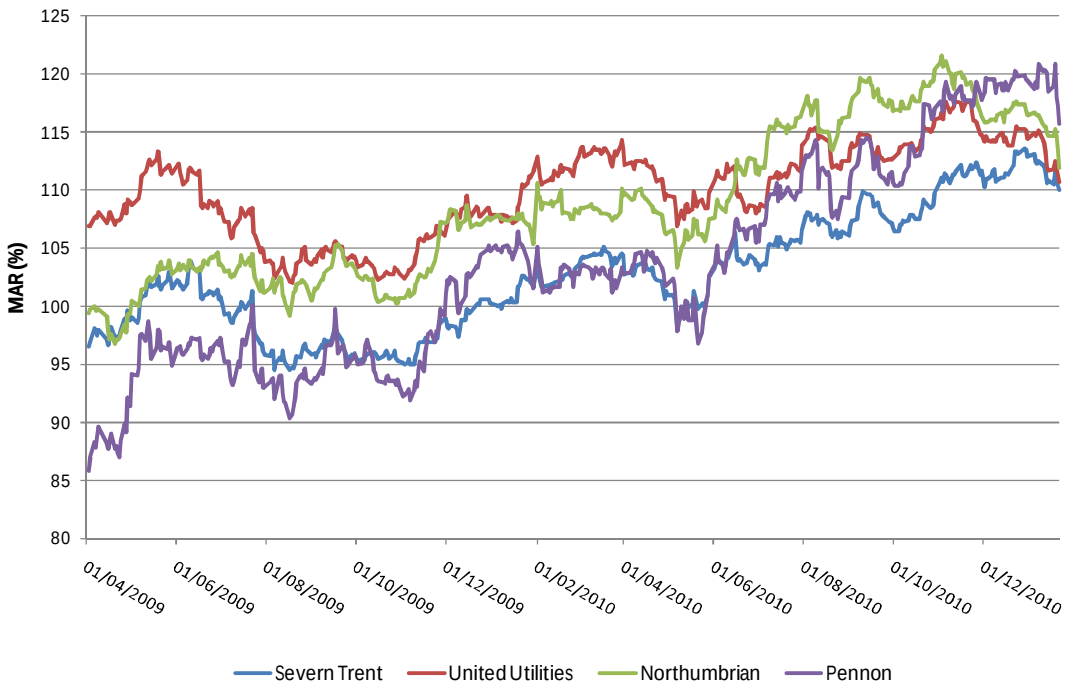
It is clear that the equity beta for UK energy networks is certainly less than one. This should be factored into Ofgem's approach to setting the allowed return on equity.

3.5. Trends in MAR ratios – listed infrastructure companies

One important measure of investor sentiment is the MAR. This is the premium at which the market values assets, compared to the value assumed by the regulator in setting prices. If a company trades at a premium to the regulatory asset value, then investors believe that its cost of capital is lower than the regulator's assumption, or that it will be able to achieve cost savings or outperformance under incentives in excess of those assumed by the regulator. So a MAR of over 100% indicates investor confidence in their ability to earn a return in excess of the allowed return in the sector.

Sentiment in the water sector has been steadily improving since October 2009 (see Figure 3.6). At that time, MAR ratios were in the range 90-110%. They have risen steadily over the last year, and now the premium is 10-20%. This suggests a steady increase in investor confidence of outperformance.

Figure 3.6: MAR ratios for listed water companies



Source: CEPA analysis of Bloomberg data

The attractiveness of UK infrastructure stocks has been supported by commentary from investment analysts. Credit Suisse, in its commentary on the EDF energy networks sale, highlights the attractiveness of "long-duration, RPI index-linked assets remunerated in real terms"[11]. More recently, it has confirmed its views on the attractiveness of UK water, and in

[11] UK regulated utilities: £5.8bn bid for EDF's UK Networks, 30 July 2010.

particular notes a reduction in its cost of capital estimate, "lower[ing] the vanilla real cost of capital to 3.3% versus the regulatory allowed 5.1%".[12] Other brokers have also commented on a low cost of capital in the sector compared to regulatory assumptions.

3.6. Trends in MAR ratios – transactions

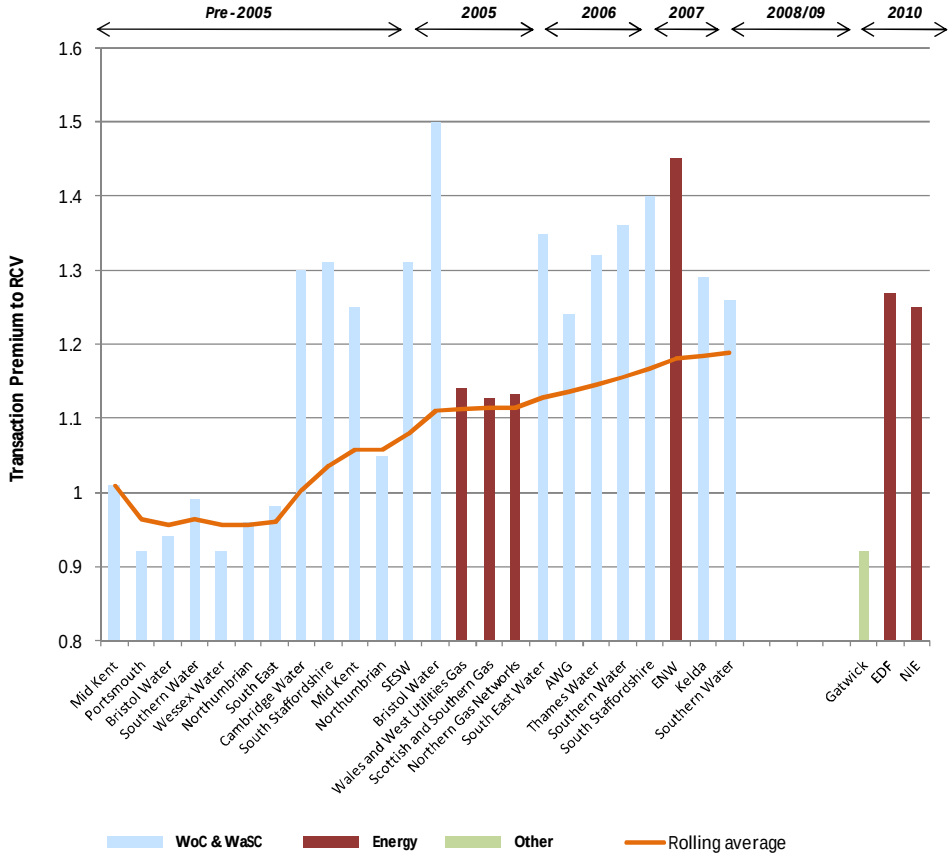
Figure 3.7 below shows the trend in MAR ratios for UK infrastructure transactions. Three relevant observations may be made:

- Following an absence of deals in 2008/9 as a result of the economic and financial crisis, deals are now happening again, with increased investor appetite for infrastructure assets.
- The recent EDF transaction carried a 27% premium to RCV. While not at the high level observed in 2005-07, it is still a very substantial premium. It is impossible to believe that this reflects cost savings alone, and therefore suggests that the acquirer expects to achieve significant outperformance against the cost of capital embedded in price controls.
- The Gatwick transaction was at a discount to RAB (as reported by the FT). This does not provide relevant evidence for energy networks: it was a forced sale needed to meet regulatory requirements; and airports are more highly geared to economic growth than energy network assets.[13]

[12] UK Water, focus on value and growth, buy UU and PNN. 21 October 2010.

[13] GIP which bought Gatwick from BAA last year for just over £1.5bn has recently sold equity stakes in the airport to Calpers and South Korea's National Pension Service (12.7 and 12 per cent equity stakes respectively). Based on quoted sales prices in the financial press, we calculate each stake to have been sold at a small profit by GIP although the transactions were still at a discount to RAB.

Figure 3.7: Quoted MAR ratios for UK infrastructure transactions.



Source: CEPA analysis, Company Reports, Citi Investment Research and Analysis and FT

This evidence from achieved transactions is supported by other possible deals which press reports suggest are being considered. The largest of these is E.ON's possible sale of its network business. Press reports state that E.ON has been approached by a consortium of private equity infrastructure investors to buy its two electricity network businesses for £2.95bn. This would represent a 19% premium to RAV.

3.6.1. National Grid rights issue

National Grid announced a £3.2bn 2 for 5 rights issue on 20 May 2010. This took the market by surprise and shocked financial markets: because management had previously suggested a rights issue was not necessary; because the size of the rights issue was surprisingly large; and bearing in mind the high cost of raising equity in difficult financial market conditions. The shares fell in value by 7% on the day of the announcement (closing at 557.5p on 19 May and at 518.4p on 20 May).

The impact of the announcement has been used to suggest that the cost of raising equity is relatively high (e.g. by Oxera in its report for ENA[14]).

[14] 'What is the impact of financeability on the cost of capital and gearing capacity?', Oxera, July 2010 (http://www.oxera.com/main.aspx?id=8964).

However, it is worth noting that in the aftermath of the announcement, a range of equity analysts calculated that the company was trading at a premium to its regulatory asset value (and the equivalent, the rate base, in the US), with appropriate treatment of the shares going ex-dividend and ex-rights. This is most clearly expressed in the RBS report published shortly after the announcement, which points to the shares trading at a 5% premium to RCV shortly after the announcement. This is echoed by other brokers. For example, Goldman Sachs[15] analysis pointed to a premium to RAV of around 5%, and that of JP Morgan[16] a premium of 11%.

What is clear from this is that even after the shock of the announcement of the rights issue, investors still had sufficient confidence in National Grid to award it value at a premium to the RCV, suggesting that investors expect returns to be at least at the cost of capital embedded in price controls. It should also be remembered that this equity raising took place after the initial RIIO financial proposals were published and so investors knew there was a real possibility of changes in the way Ofgem approached the financial aspects of regulation.

3.7. Conclusion

Market evidence from MAR analysis and transactions indicates strong premiums to RAV for regulated utilities, in excess of what might be expected from cost efficiencies and outperformance on incentives. This points to outperformance against the allowed WACC and the need for Ofgem to carefully balance the needs of investors and end consumers. This will in part be addressed through the implementation of cost of debt indexation, but Ofgem will need to be careful not to over-reward equity holders.

[15] National Grid: ex rights, shares remain expensive. 27 May 2010.

[16] National Grid: focus on the right issues. 26 May 2010.

4. NOTIONAL GEARING AND RETURNS

4.1. Notional gearing

Ofgem has asked for views on the approach to setting the notional gearing. It is also interested in the factors that might determine any differences in notional gearing between sectors and between companies in the same sector.

Notional gearing has two uses:

- It is used as a parameter in the estimate of the vanilla WACC which is used to set the allowed return.
- It is used in the modelling of returns on equity for individual companies (RORE analysis) which as we understand it Ofgem uses both to model the expected consequences of the price control and to understand the range of historic returns by company.

Importantly, notional gearing has no direct impact on the financial structure adopted by companies. Indeed Ofgem stresses in its RIIO documents that financing is a matter for companies themselves and not for Ofgem.

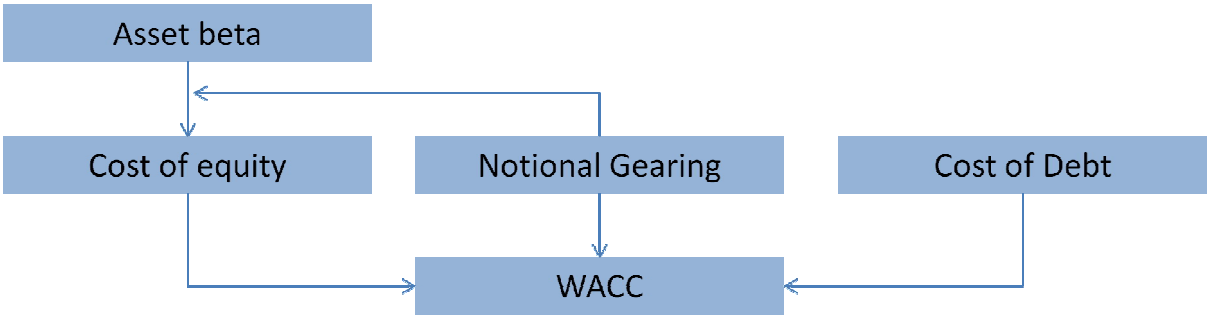
4.2. Estimation of the WACC

4.2.1. Relationship between components

Ofgem has highlighted in its strategy paper that it is important that there is congruence between the cost of equity, the notional gearing, and risk. Indeed, as highlighted in Figure 3.2. of the Finance Annex to the strategy paper, these concepts are inherently inter-related.

In DPCR5, Ofgem's judgement about the cost of equity was based on assumptions about the asset beta of companies. The equity beta fed into the cost of equity calculation was based on an asset beta – which measures underlying business risk – which was re-geared using the notional gearing assumption. This approach has also been used by a range of regulators. With this approach, there is congruence between the cost of equity and the notional gearing (see Figure 4.1 below).

Figure 4.1: Relationship between cost of capital, gearing and underlying risk



Source: CEPA

One of the important consequences of this approach is that changes in the notional gearing assumption should have a relatively limited impact on the overall vanilla WACC that is judged

appropriate. An increase in the notional gearing reduces the weighting of the cost of equity in the vanilla WACC formula, but it also leads to a corresponding increase in the cost of equity.

The relationship between the asset beta, gearing and the equity and debt beta can be shown as:

$$\beta_a = \beta_d(g) + \beta_e(1-g),$$

where: β is the beta coefficient, for which the subscripts a, d and e refer to the asset beta, debt beta and equity beta, respectively; and g is the gearing ratio.

The common assumption has been of a zero debt beta, in which case the above equation can be rearranged as:

$$\beta_e = \frac{\beta_a}{(1-g)}$$

Where data is available, the historic equity beta (left hand side of the above equation) and gearing ratio (the denominator on the right hand side of the equation) can be estimated, unlike the asset beta, which is a theoretical concept. As noted above, regulators have relied on the above relationship in setting their cost of capital allowances.

However, there has been some evidence that the standard relationship between the equity beta and the asset beta has not behaved according to the second equation, at least in the short term. This is discussed further below.

4.2.2. Illustrations of impact of changes in gearing and betas

In this sub-section we illustrate the impact of changing gearing on the equity beta and thus on the allowed WACC:

- Firstly, assuming no change in asset beta.
- Secondly, assuming asset beta changes.

Table 4.1 below illustrates how, applying the relationship set out in the formula above, changes in gearing impact the equity beta.

Table 4.1: Illustration of changing gearing on the cost of equity

Asset beta	*0.4*	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Notional gearing	*60%*	10%	20%	30%	40%	50%	60%	70%	80%
Equity beta	*1.0*	0.4	0.5	0.6	0.7	0.8	1.0	1.3	2.0
Risk free rate	*2.0%*	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Risk premium	*5.0%*	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Cost of equity	*7.0%*	4.2%	4.5%	4.9%	5.3%	6.0%	7.0%	8.7%	12.0%
Cost of debt	*3.5%*	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Vanilla WACC	*4.9%*	4.2%	4.3%	4.5%	4.6%	4.8%	4.9%	5.1%	5.2%

In the above example, if the asset beta remains unchanged, the cost of equity of course increases with gearing, but the Vanilla WACC increases only marginally, which is in line with the classical interpretation of CAPM. For example, a 10% change in gearing from 60% to 70% produces only a 0.2% increase in the WACC. For simplicity we have assumed no changes to the cost of debt, although at the extremes of gearing the cost of debt could vary e.g. if the credit rating was impacted. Similarly, we have ignored any actual tax effects on the business.

In the next example, set out in Table 4.2 below, we illustrate the impact of changes in gearing which, within a certain range, have no impact on the equity beta. Our range is deliberately broad and goes against the standard theory. There is, however, some market evidence, e.g. from the water companies, that gearing might change by c.20% without significantly impacting the equity beta.

Table 4.2: Illustration of impact of changing gearing on WACC if the equity beta is unchanged

Asset beta	*0.4*	0.4	0.4	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	0.4
Notional gearing	*60%*	10%	20%	**30%**	**40%**	**50%**	**60%**	**70%**	80%
Equity beta	*1.0*	0.4	0.5	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	2.0
Risk free rate	*2.0%*	2.0%	2.0%	**2.0%**	**2.0%**	**2.0%**	**2.0%**	**2.0%**	2.0%
Risk premium	*5.0%*	5.0%	5.0%	**5.0%**	**5.0%**	**5.0%**	**5.0%**	**5.0%**	5.0%
Cost of equity	*7.0%*	4.2%	4.5%	**7.0%**	**7.0%**	**7.0%**	**7.0%**	**7.0%**	12.0%
Cost of debt	*3.5%*	3.5%	3.5%	**3.5%**	**3.5%**	**3.5%**	**3.5%**	**3.5%**	3.5%
Vanilla WACC	*4.9%*	4.2%	4.3%	**5.6%**	**5.3%**	**4.9%**	**4.9%**	**4.6%**	5.2%
Delta	*0.0%*	0.0%	0.0%	**1.2%**	**0.6%**	**0.1%**	**0.0%**	**-0.5%**	0.0%

Table 4.2 shows that if the asset beta and equity beta remain unchanged (in this illustration between gearings of 30 – 70%), the cost of equity stays flat but the Vanilla WACC is impacted to a greater degree: the Vanilla WACC is higher at lower gearing, but lower at higher gearing.

Table 4.3 then illustrates the impact of changes in the asset beta, once again in the case where the equity beta moves in line with notional gearing.

Table 4.3: Illustration of impact of changing gearing on CoE and WACC if equity beta and asset beta change

Asset beta	*0.4*	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Notional gearing	*60%*	10%	20%	30%	40%	50%	60%	70%	80%
Equity beta	*1.0*	0.5	0.6	0.6	0.8	0.9	1.1	1.5	2.3
Risk free rate	*2.0%*	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Risk premium	*5.0%*	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Cost of equity	*7.0%*	4.5%	4.8%	5.2%	5.8%	6.5%	7.6%	9.5%	13.3%
Delta	*0.00%*	0.28%	0.31%	0.36%	0.42%	0.50%	0.62%	0.83%	1.25%
Cost of debt	*3.5%*	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Vanilla WACC	*4.9%*	4.4%	4.6%	4.7%	4.9%	5.0%	5.2%	5.3%	5.5%
Delta	*0.00%*	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%

Table 4.3 shows that, if the equity beta changes (as for Table 4.1) with gearing, but the asset beta also changes, the impact on the WACC is significant: a 5bps change in the asset beta has a 25bps impact on WACC.

This sub-section has shown that plausible changes in notional gearing are likely to have a modest impact on WACC, assuming no change to the asset beta. There is thus no good reason to depart from the established approach of setting notional gearing across sectors, taking account of 'optimal gearing'.

Changes in the asset beta would of course have a more dramatic impact on the WACC, but the asset beta is typically not impacted by changes in capital structure and there is no good reason to think that the asset beta on the NWOs will change under RIIO. The asset beta is not impacted by larger capex programmes or lengthening of cash flows. It could possibly be impacted by changes in risk allocation, but there is no clear evidence of this from the market reaction to RIIO. Indeed, achievement of or failure to achieve performance incentives is unlikely to be correlated with performance of stock market indices, so should not in theory affect the cost of capital (but could affect the allowed returns if incentives are asymmetric).

As an implementation issue, Ofgem would need to check any impacts of changes in gearing on tax and that these are captured in the allowances.

What the above means is that in the estimation of the WACC (and thus the return that may be allowed) it is the estimate of the asset beta that is more important than the choice of the notional gearing.

4.3. Use of gearing in RORE analysis

The RORE analysis has been used in DPCR5 to illustrate what potential returns are available to equity holders, and to calibrate the package for risks.

Ofgem highlights that different companies are likely to have very different profiles of capital expenditure, both in terms of the schedule of cash needs, and in terms of investment as a

proportion of the existing regulatory asset base. As a result, the financial structures chosen by those companies to meet their anticipated financing needs are likely to be very different, and may be difficult to predict in advance. The gearing chosen by a company is unlikely to be constant over the course of a price control period.

RORE can be useful as an illustrative tool, and it can ensure that the risks facing different companies are balanced. There would be a danger, though, in calibrating packages for different companies in the same sector using different notional gearing assumptions. It could lead to a weakening of incentives on those companies where the notional gearing was deemed to be higher.

RORE can be useful as an illustrative tool, showing how companies have delivered returns to their shareholders. However, there are dangers in using it for calibrating packages of incentives for different companies using different gearing assumptions.

It is easiest to consider the danger through the use of a hypothetical example. Suppose that there are two companies with the same regulatory asset base (say £1bn). Suppose further that the investment needs of the two companies are widely different: one needs to reinvest a fraction of its current regulatory asset base. The other needs to invest a multiple of its asset base. The appropriate gearing for the first company might be high, potentially in excess of 80%. The appropriate gearing for the second company might be much lower, say 30-40%.

The first company, with a relatively brittle financing structure, might only be able to accommodate a limited amount of risk. The second company, with lower gearing in anticipation of future investment could accommodate much greater risk. It is possible that a regulator might deduce from the RORE analysis that the incentives on the low geared company should be much sharper, because it has an equity buffer to absorb risks.

This is the wrong way round. Ofgem should decide on the relative strength of the incentives that are appropriate to encourage the desired behaviour by companies and their staff. The financial structure that is appropriate given those risks should then be decided on the basis of that risk combined with other factors such as financing needs. We would expect that the relative size of incentives would depend on the size of the assets in the business and the operational risks, and be unrelated to the way that companies choose to finance. This is also consistent with Ofgem's approach within RIIO, which is to take a step back from those decisions which are most appropriately left with companies, of which one is financial structure.

4.4. Implications for choice of notional gearing

There seems to be no good reason for departing from the existing practice of choosing a notional gearing that is consistent with a comfortable investment grade credit rating, with a choice showing consistency across price reviews.

There will be some judgement exercised in the choice of the notional gearing, but the WACC methodology should ensure that the impact on the WACC will be relatively limited, with the changes in risk reflected in the WACC through the asset beta assumption.

Companies will have different capital requirements. Ofgem may wish to model the financial consequences of the price control package on all companies, and make different assumptions

about the capital structure. However, we are not clear how such modelling could impact anything, other than allowing Ofgem to signal to the company when it believes the company needs more equity. There is a danger that this modelling exercise will be rather complex, and take up valuable regulatory and company resource, with no tangible impact on decisions, removing focus from other more substantive issues.

It is important in this discussion to recognise the limits of the importance of notional gearing in practice (as discussed above), and for the focus of the discussion on relative riskiness of companies to be on the asset beta.

5. FINANCEABILITY / ASSET LIVES

5.1. Principles

The main principle behind Ofgem's approach to financeability is that underlying parameters for the allowed return and other financing issues should be set appropriately and consistently, and in these circumstances a "notional" company should be financeable.

In a change from the past, Ofgem has said that in future it intends not to adjust cash flows to meet financeability issues, but rather that companies will themselves be responsible for managing cash flows. For example, Ofgem explicitly says that it will not advance cash flows to companies simply because credit metrics are temporarily weaker.

As part of RIIO, Ofgem decided to align asset lives used for regulatory depreciation with economic lives. As noted in the consultation paper annex, electricity networks are currently depreciated over 20 years, and the proposed policy would increase this to 45-55 years. The implication of this is that the profile of cash flows would lengthen.

Ofgem has confirmed that all such changes will be done in a way that preserves the Net Present Value (NPV) of the regulated business. However, it also makes some comments about transition arrangements. In particular it says that it will adopt "appropriate" arrangements to ensure financeability, with the onus on companies to demonstrate why transitional arrangements may be necessary.

With returns on the regulatory asset base set at a level which should deliver the network companies a reasonable return on capital, it is difficult to justify why a change in the profile of cash flows will need transitional arrangements. In particular:

- The announcement of the consideration of a change of the policy was included in the initial announcement of the RIIO package. Share price reaction and analyst comment on the package was broadly supportive.
- The appetite for investment in infrastructure is strong, and appears to have improved in recent months. If there is a need for equity injections, it appears that there is capital ready to be deployed in the sector.
- Europe Economics has provided some analysis in its contribution to the strategy work for Ofgem that is supportive of this stance.

It is useful to refer back to the Financing Networks[17] paper and to consider the options set out therein for handling any transition. The paper set out a range of market based approaches that included:

- A more flexible view of financial indicators.
- Companies to issue further ILGs.
- For equity, either holding back dividends or making equity injections.

[17] Ofwat/ Ofgem, Financing Networks, A discussion paper, February 2006.

The paper also noted that regulators could chose to enhance revenue or to accelerate depreciation.

Where feasible, market based solutions appear optimal, as they are likely to be lowest cost and not raise issues of intergenerational equity. We examine this further below.

5.2. CEPA analysis of asset lives

CEPA in conjunction with two engineering companies advised Ofgem on the asset life extension and depreciation policy. As part of this advice it modelled the impact of adopting longer asset lives on the financial structure of the sector. For the network operators as a whole, the modelling showed that there was a negative impact on credit metrics. Average PMICR over the period 2011-50 fell to 1.8-2.0x, with a range of 1.7-2.3x. Clearly the impact on individual companies would differ from this, but the analysis showed that the industry as a whole would remain in investment grade territory.

5.3. Illustrative modelling of financeability

In order to test this further, we have constructed a simple model to test the implications of the proposed changes to asset lives and depreciation policy. For gas distribution, we assume the proportion of repex that is capitalised falls from 50% to 0%[18]; for electricity transmission, we assume that an asset life of 50 years is adopted across the entire asset base, compared to 20 years currently.[19]

In each case we focus on the financeability ratios referenced by Ofgem:

- Two equity ratios:
    - RAV/EBITDA
    - Regulated equity/Regulated earnings
- Two "key" credit rating ratios:
    - Post-Maintenance Interest Cover Ratio (PMICR)
    - Net debt/RAV
- Two "additional" credit rating ratios that can be taken into consideration:
    - FFO interest cover
    - Retained Cash Flow (RCF)/Debt

Target values for these ratios have not formally been set, and so we present indicative targets based on Ofgem's initial consultation paper. The model covers an 8-year period for a notional company based on the financing assumptions used in the latest price control review.[20]

[18] Ofgem Consultation on strategy for the next gas distribution price control – RIIO-GD1 Overview Paper, para 8.5.

[19] Ofgem Consultation on strategy for the next transmission price control – RIIO-T1 Overview Paper, para 8.9.

[20] We further assume a real dividend yield of 3.5% on equity and inflation of 2.7%.

Gas distribution

In this section we focus on results for the network as a whole, which are summarised in Table 5.1 below. This captures three scenarios: a "Base case", in which depreciation policy remains unchanged, and capex and repex are £300m and £700m respectively; a "Policy change" scenario, in which repex is 100% capitalised; and a "High capex" scenario, in which alongside the policy change planned capex is £800m. In each case we show the resulting metrics at the end of the 8 year modelling period; detailed tables of the profiling over the 8 years are provided in Annex 1.

Table 5.1: Year 8 financeability metrics – Gas distribution

Metric	"Base case"	"Policy change"	"High capex"	Indicative target[21]
RAV/EBITDA	13.0	13.3	13.6	-
Equity/Earnings	14.3	13.6	13.1	-
PMICR	2.2	2.0	2.0	1.5
Gearing	63.0%	67.1%	69.8%	70.0%
FFO interest cover	3.5	3.2	3.1	3.0
RCF/Net debt	6.7%	6.1%	5.6%	9.0%

Key points to note are:

- In the base case the "key" credit rating metrics of PMICR and gearing comfortably meet their target values.
- Although these metrics would be expected to deteriorate slightly upon the proposed policy change, this would not be sufficient to breach the "key" indicative targets. This remains the case even if the eventual capex programme is substantially higher than currently planned (£800m instead of £300m).
- There may be pressure on the "additional" metrics that Ofgem takes into consideration, particularly RCF/Net debt. However, our view is that in taking a balanced view Ofgem would place more weight on the relatively healthy PMICR and gearing metrics.

It is possible that the latter point would merit a change in financing structure. One option would be an equity injection: a one-off injection of £1bn (13% of existing equity) in Year 8 would be sufficient to bring gearing post-policy change into line with the base case, although other metrics would remain largely unchanged. Bearing in mind the key issue relates to the cash-based metric, a more suitable approach might be to adjust dividend policy. Providing a 0% real-terms annual yield (rather than 3.5%) would allow the notional network to move towards FFO interest cover of 3.7 and RCF/Net debt of 9.5% by Year 8, alongside a substantial decrease in gearing.

Our overall view is that the implied financial restructuring – which would be prudent rather than necessary – should be well within scope.

[21] Based on Ofgem 'Consultation on strategy for the next transmission and gas distribution price controls - RIIO-T1 and GD1 Financial issues', Section 4.

Electricity transmission

As noted above, the policy change modelled for electricity transmission is a shift from asset lives of 20 years to 50 years across the entire asset base. We also assume a relatively large annual capex programme of £1,000m across the entire network, around 12.5% of the initial RAV.

We include a "Base case" and a "Policy change" scenario, as for gas distribution, which are summarised in columns 2 and 3 in Table 5.2 below. To reflect differences within the network in the size of companies' asset base and the relative scale of their capex programmes, we also consider three company-specific scenarios (based on illustrative company archetypes). These are: a "Large co.", which has a large asset base and a slightly smaller capex programme than the network as a whole; a "Small co. + high capex", which has a small asset base and a significantly larger capex programme (18.8% of initial RAV); and a "Small co. + low capex", which has a small asset base and no net capex (i.e. gross capex equals depreciation). Again in each case we show the resulting metrics at the end of the 8 year modelling period; detailed tables of the profiling over the 8 years are provided in Annex 1.

Table 5.2: Year 8 financeability metrics – Electricity transmission

Metric	"Base case"	"Policy change"	"Large co."	"Small co. + high capex"	"Small co. + low capex"	Indicative target[22]
RAV/EBITDA	7.9	13.9	13.6	13.7	12.6	-
Equity/Earnings	13.3	12.1	12.3	11.0	13.4	-
PMICR	2.0	1.9	1.9	1.8	2.0	1.5
Gearing	66.5%	73.3%	72.3%	77.6%	66.4%	70.0%
FFO interest cover	5.2	2.8	2.9	2.7	3.3	3.0
RCF/Net debt	13.7%	5.0%	5.3%	4.9%	6.5%	9.0%

Key points to note are:

- In the base case, both the "key" and "additional" metrics comfortably meet their target values.
- The proposed policy change is more severe than for gas distribution. With no adjustments to financing structure, three of the credit rating metrics for the network as a whole deteriorate such that they do not meet their target values.
- In particular, there is pressure on gearing, and the results suggest that following the policy change a small company with a large capex programme in particular may end up with gearing no longer consistent with a comfortable investment grade credit rating.

However, there are two reasons to believe the above trends are controllable by the companies themselves. First, the implied changes in financing structure to counter the increase in gearing

[22] Based on Ofgem December 2010 paper, Figure 4.1, which sets out the values consistent with a "comfortable investment grade" credit rating.

and reductions in cash flow are achievable. For the illustrative small company, a reduction in the real dividend yield from 3.5% to 0% would stabilise gearing at around 72% by Year 8, and would improve FFO interest cover and RCF/Net debt (though both would be below their indicative target values by Year 8). Alternatively new equity could be issued.

Second, evidence of companies' actual gearing rates suggests there is significant headroom. Europe Economics calculates gearing levels in excess of 70% for some transmission owners (and indeed gas distribution operators)[23], suggesting that breaches of the indicative targets are not necessarily perceived as indicators of poor financial health. Indeed, Ofgem itself notes that its financeability analysis "will focus on the medium to long term". Furthermore, according to Europe Economics the smaller transmission owners (Scottish Power Transmission Ltd. and Scottish Hydro Electric Transmission Ltd.) have relatively low levels of gearing (43% and 41% respectively).

Overall, our view is that: (i) the larger company should be able to maintain financial health with relatively modest adjustments to capital structure; and (ii) the smaller companies should be able to absorb increases in gearing as a result of the policy change, issuing new equity if required.

Furthermore, as we saw above, modest changes in gearing are likely to have a relatively insignificant impact on the cost of equity and allowed WACC.

5.4. Investor reaction to RIIO

Analyst reaction to Ofgem's package of measures has been broadly supportive of the package. A variety of published analyst reports have noted benefits such as the increased duration which brings extra clarity, increased incentivisation, and it is believed that there is reduced possibility of involvement by the Competition Commission at price reviews. There is concern about the change in the depreciation policy, but the overall package of measures has been received positively.

Share price movements can provide a tangible measure of investor reaction to Ofgem's proposals. The announcement of the new package of measures was made on 4 October 2010. Figures 5.1 and 5.2 respectively show share price movements for the two companies most exposed to UK energy networks, National Grid and Scottish & Southern Energy, and their performance compared to the FT-All Share index.

Since the announcement of the decision in early October, the absolute performance of the shares has been positive. Figure 5.2 shows that the performance compared to the FT-All Share index has shown a slight decline, which might be expected given the sharp increase in the market as a whole and an equity beta of less than one.

Of course, some of the key principles of RIIO had been flagged in advance through the stakeholder meetings and interim publications. The final announcements on 4 October 2010 were not therefore a major surprise, and investor sentiment would have been informed by stakeholder engagement process and the initial reforms announced in the summer. Taken together, this evidence does not suggest a significant increase in perceived risk from the reforms.

[23] Their calculations are based on regulatory accounts.

Figure 5.1: Share prices of National Grid and Scottish & Southern Energy

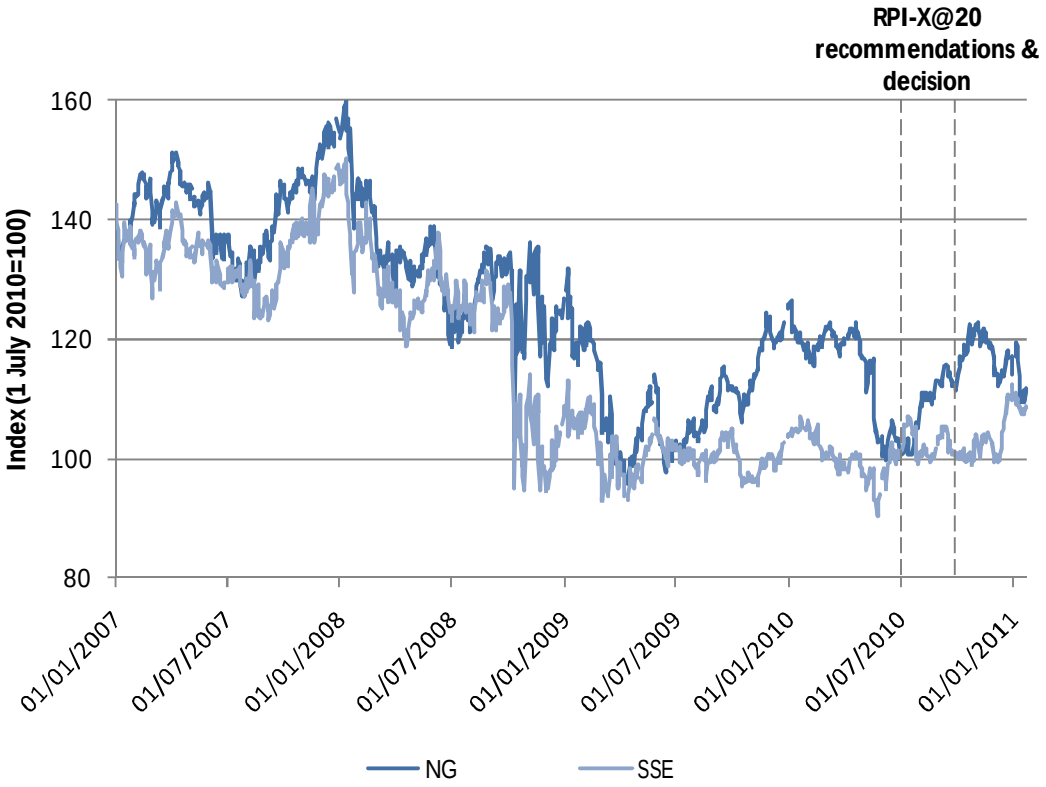


Figure 5.2: Share prices of National Grid and Scottish & Southern Energy relative to FTSE All-share Index

Source: Bloomberg and CEPA analysis

5.5. Appetite for infrastructure investment

The financial crisis had a significant effect on infrastructure investment. Reports by Preqin show that global fund raising by unlisted infrastructure funds peaked in 2007 at $44.5bn, falling to $34.5bn in 2008 as the funding crisis took hold. 2009 fund raising collapsed to $7.7bn in 2009, with Q2 and Q3 2009 particularly weak.

The trend in 2010 has been positive though, with $27.3bn having been raised in calendar 2010. Some major funds have closed in 2010, including Alinda Infrastructure Fund II ($4.1bn) GS Infrastructure Partners II ($3.1bn) and Macquarie European Infrastructure Fund III ($1.2bn). This quantitative evidence is supported by qualitative evidence in surveys, suggesting an increased appetite for infrastructure investment, and an increasing number of investors creating a separate asset pool specifically for infrastructure.

Further evidence of the appetite for infrastructure is that assets are being acquired. Recent transactions include the sale of EDF's UK energy networks and ESB's acquisition of Northern Ireland Electricity (NIE), the Northern Ireland transmission and distribution business of the Viridian Group, both at apparently substantial premia to the RAB. In addition, the Canadian infrastructure funds Borealis Infrastructure and the Ontario Teachers' Pension Plan have agreed to acquire the HS1 rail concession for £2.1bn, far higher than the expected £1.5bn, with debt financing from a range of lending banks.

5.6. Arguments about the cost of raising equity

It is possible to argue that transitional arrangements need to be made to allow some particularly financially stretched companies to fund themselves. In particular, a small company with a very large capital investment programme will probably need to raise equity in order to be able to maintain an investment grade credit rating. It could be argued that such additional equity may be incurred at a high cost, if for example it needed to be done at a time when market conditions were not favourable.

The investment needs are not a surprise. Companies should be able to anticipate financing needs well in advance, and to structure a programme of debt and equity issuance that is appropriate.

Globally, private equity infrastructure funds have received large inflows, as has been commented on above. However, not all these institutions have yet invested their committed funds into assets. This suggests that even were a company to have difficulty in raising equity in the public markets, there is private capital available. It also suggests that if the shareholders of the existing company do not see sufficient returns to invest new equity, there are alternative owners available that may find the returns attractive, given the risk characteristics.

This evidence is qualitative, rather than quantitative. However, it suggests to us that very clear evidence that equity is not available from a range of sources is needed before adapting policy for a perceived high cost of raising equity.

5.7. International comparisons

Much of the debate on cost of capital focuses on the CAPM methodology and regulatory precedent in the UK market. This, however, misses the reality of asset allocation by most fund

managers. The asset alternatives for an investor in UK energy networks are not just UK water and sewerage, UK airports, or UK telecoms. The alternatives include continental European energy networks, US utilities, and other utility opportunities in developed and developing countries.

Making comparisons with returns available in other countries is not straightforward – for example, adjustments would be needed for tax and accounting differences. Regulators use different methods of calculating assets, and appropriate allowed returns on capital. Nevertheless, an appropriate assessment of competing returns internationally should help Ofgem make an appropriate decision on risk and return in the UK energy networks. Without such analysis, it is possible that hearsay about returns available elsewhere informs judgements, and it is possible that such hearsay may not stand up to detailed scrutiny.

5.8. Conclusion on financeability

Our analysis to date shows that transition arrangements may well not be necessary and that Ofgem should continue to encourage companies to set their own optimal financing structures, including raising new equity if required. Clearly this will need to be tested in light of the companies well-justified business plans, and we hope the framework we set out will be of assistance in this.

ANNEX 1: DETAILED FINANCEABILITY TABLES

Table A1: Gas distribution

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
"Base case"								
RAV/EBITDA	13.7	13.6	13.5	13.4	13.3	13.2	13.1	13.0
Equity/Earnings	14.4	14.4	14.3	14.3	14.3	14.3	14.3	14.3
PMICR	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Gearing	62.7%	62.8%	63.0%	63.0%	63.1%	63.1%	63.0%	63.0%
FFO interest cover	3.3	3.3	3.4	3.4	3.4	3.4	3.4	3.5
RCF/Net debt	6.1%	6.2%	6.2%	6.3%	6.4%	6.5%	6.6%	6.7%
"Policy change"								
RAV/EBITDA	14.0	13.9	13.8	13.7	13.6	13.5	13.4	13.3
Equity/Earnings	14.4	14.2	14.1	14.0	13.8	13.8	13.7	13.6
PMICR	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0
Gearing	63.5%	64.3%	65.0%	65.6%	66.1%	66.5%	66.8%	67.1%
FFO interest cover	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2
RCF/ Net debt	5.9%	5.9%	5.9%	5.9%	5.9%	6.0%	6.0%	6.1%
"High capex"								
RAV/EBITDA	14.4	14.3	14.1	14.0	13.9	13.8	13.7	13.6
Equity/Earnings	14.4	14.0	13.7	14.4	13.7	13.4	13.3	13.1
PMICR	2.2	2.1	2.1	2.0	2.1	2.0	2.0	2.0
Gearing	64.5%	66.2%	67.5%	66.6%	67.6%	68.5%	69.2%	69.8%
FFO interest cover	3.3	3.2	3.2	3.1	3.2	3.1	3.1	3.1
RCF/ Net debt	5.6%	5.6%	5.5%	5.7%	5.6%	5.6%	5.6%	5.6%

Table A2: Electricity transmission

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
"Base case"								
RAV/EBITDA	9.5	9.3	9.0	8.8	8.6	8.3	8.1	7.9
Equity/Earnings	14.4	14.1	13.8	13.6	13.5	13.4	13.3	13.3
PMICR	2.2	2.2	2.1	2.1	2.1	2.0	2.0	2.0
Gearing	62.0%	63.5%	64.6%	65.4%	66.0%	66.3%	66.5%	66.5%
FFO interest cover	4.9	4.9	4.9	4.9	4.9	5.0	5.1	5.2
RCF/ Net debt	11.4%	11.5%	11.7%	12.0%	12.3%	12.7%	13.2%	13.7%
"Policy change"								
RAV/EBITDA	14.7	14.5	14.4	14.3	14.2	14.1	14.0	13.9
Equity/Earnings	14.4	13.9	13.4	13.1	12.7	12.5	12.2	12.1
PMICR	2.2	2.1	2.0	2.0	1.9	1.9	1.9	1.9
Gearing	63.2%	65.8%	67.8%	69.4%	70.7%	71.8%	72.6%	73.3%
FFO interest cover	3.3	3.2	3.0	2.9	2.9	2.8	2.8	2.8
RCF/ Net debt	5.5%	5.4%	5.2%	5.2%	5.1%	5.1%	5.0%	5.0%
"Large co."								
RAV/EBITDA	14.2	14.1	14.0	13.9	13.8	13.8	13.7	13.6
Equity/Earnings	14.4	13.9	13.5	13.2	12.9	12.7	12.4	12.3
PMICR	2.2	2.1	2.1	2.0	2.0	1.9	1.9	1.9
Gearing	62.9%	65.2%	67.1%	68.6%	69.8%	70.8%	71.6%	72.3%
FFO interest cover	3.4	3.2	3.1	3.0	3.0	2.9	2.9	2.9
RCF/ Net debt	5.8%	5.7%	5.5%	5.4%	5.4%	5.3%	5.3%	5.3%
"Small co. + high capex"								
RAV/EBITDA	14.5	14.3	14.2	14.1	14.0	13.9	13.8	13.7
Equity/Earnings	14.4	13.6	12.9	12.3	11.9	11.5	11.2	11.0
PMICR	2.2	2.1	2.0	1.9	1.8	1.8	1.8	1.8
Gearing	65.0%	68.6%	71.3%	73.3%	74.8%	76.0%	76.9%	77.6%
FFO interest cover	3.5	3.2	3.0	2.9	2.8	2.8	2.7	2.7
RCF/ Net debt	5.8%	5.5%	5.3%	5.1%	5.0%	5.0%	4.9%	4.9%

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
"Small co. + low capex"								
RAV/EBITDA	13.1	13.0	13.0	12.9	12.8	12.8	12.7	12.6
Equity/Earnings	14.4	14.2	14.0	13.8	13.7	13.6	13.5	13.4
PMICR	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.0
Gearing	61.3%	62.5%	63.5%	64.3%	65.0%	65.6%	66.0%	66.4%
FFO interest cover	3.5	3.5	3.4	3.4	3.3	3.3	3.3	3.3
RCF/ Net debt	6.7%	6.7%	6.6%	6.6%	6.5%	6.5%	6.5%	6.5%