



FINANCIAL ISSUES IN DPCR5

OFGEM

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1. EXECUTIVE SUMMARY

This paper sets out CEPA's views on the key issues to be addressed by Ofgem when setting the weighted average cost of capital (WACC) in DPCR5. In doing so, we take account of recent market developments which have introduced additional uncertainty about the cost of capital likely to prevail over the next price control period. We assume that Ofgem's starting position will be the recent determination in respect of the WACC for the comparable gas distribution companies. However, Ofgem will need to consider:

- Whether developments in the financial markets mark the beginning of a period of sustained change in the cost of debt and the cost of equity?
- What the appropriate approach to setting the cost of debt is, including:
 - Whether it should take a more specific view about the financing structure that would be adopted by a notional efficiently financed company?
 - Whether to take more explicit account of low embedded cost of debt – which we refer to as a 'split cost of debt'?
- How to react to the increased uncertainty about the future WACC?
- Whether there is any case for financeability uplifts and, if so, how they should be funded?

Do developments in the financial markets mark the beginning of a sustained change in the cost of capital?

The last 10 years have witnessed a period of historically very low real interest rates in the nominal and index-linked debt markets. The causes of this situation have been much debated. They include the recycling of the global savings surplus and the change in portfolio preferences of pension funds in the UK. The recent turbulence in credit markets, and the associated widening of credit spreads, raise the question of whether the future cost of debt and/ or equity will be significantly higher over the next five year price control period than it has been over the last 10 years.

We observe that so far, at least, the impact of the credit crunch has been primarily on the availability of credit to non-investment grade borrowers and borrowers in particular sectors e.g. property. The impact has been broadly neutral so far as the cost of nominal debt for investment grade borrowers is concerned: there has been an increase in credit spreads, offset by a reduction in the risk-free rate. Credit spreads have increased most for lowest quality investment grade debt. However, whereas spreads in the index-linked gilt market have narrowed even further, we do note that the corporate index-linked market has temporarily dried up.

We note that there is some evidence of a "flight to quality" in both the debt and equity markets, with utility assets seen as attractive low-risk assets relative to most other sectors. The evidence in the debt markets includes the slightly lower spreads on new debt issues by utility companies than the spreads on new issues with the same rating by non-utility companies. In the equity markets, the stability of quoted utility shares relative to the market as a whole during the recent period of market turbulence is also evidence that utility shares are seen as relatively low equity risk.

Our analysis on developments in the financial markets is set out in Section 2 of this report.

Approach to setting the cost of debt

In section 3.2 we set out our views on key methodological issues in setting the cost of debt in the WACC.

Whether Ofgem should take a more specific view about the financing structure that would be adopted by a notional efficiently financed company?

Traditionally, regulators have taken a view about the efficient gearing that would be adopted by a notional efficiently financed company. However, regulators have not generally taken a view about the term structure of debt, the proportions of fixed and floating debt and whether or not to assume a proportion of index-linked debt financing.

In our view, regulators now need to consider these questions. In a sustained period during which there have been inverted yield curves, it is a reasonable expectation that an efficient borrower would extend the average maturity of its borrowings to benefit from the lower interest rates at the long end of the curve. It is also reasonable to expect that during the period of historically very low real interest rates over recent price control periods, an efficient borrower would have locked-in these low rates by utilising a higher proportion of fixed-rate debt. Likewise, it is reasonable to expect that solid investment-grade borrowers would have sought to increase borrowings from the index-linked market to take advantage of the historically extremely low real interest rates on offer in the corporate index-linked market. The judgement that regulators need to make about the appropriate weighted average cost of capital should be influenced by its judgment about the efficient financing structure of the notional utility company. Our view is that, just as regulators take a view on the efficient gearing¹, they should also take a view on the efficient financing structure that would reasonably have been expected to be adopted by an efficiently financed notional utility.

¹ Section 3 also includes some evidence on the gearing. Our view is that there is no reason for Ofgem to depart from the notional gearing level of 62.5% established in GDPCR5; and that this should be the strong presumption in the absence of evidence to the contrary in DPCR5.

'A split cost of debt'

If the judgement is that the actual cost of debt in future is likely to be higher than over the past 10 years, then regulators will need to revisit the question of whether to set a single average cost of capital at a level sufficient to enable businesses to fund their capital programmes. This will involve more explicitly taking account of differences in the embedded cost of debt and the cost of debt expected to prevail in the forthcoming control period. This might be thought of as a split cost of debt²:

- with one rate for the sunk capital invested - reflecting the past cost of debt that an efficiently financed business might be expected to have; and
- another rate for new capital investment reflecting the marginal cost of debt.

Assets financed over the past decade (now included in the RAV) were funded at a time when real interest rates were historically very low. There is a reasonable expectation that a notional efficiently financed company would have locked in those lower rates by raising a proportion of fixed-rate debt during previous price control periods.

If the marginal cost of funding new capital expenditure over the next price control period were expected to increase, the issue is whether it would be appropriate to set the cost of debt only with reference to the marginal cost of debt. If this were done, then capital gains would accrue to the utility companies and their shareholders as a result of locking-in the spread between the historic cost of debt and the higher marginal cost of debt. A similar argument may also apply to the cost of equity.

How to react to the increased uncertainty about the future cost of capital?

There is currently much greater uncertainty about the future cost of capital and particularly the cost of debt. Some argue that the current credit crunch marks a turning point in the cost of debt from a period of historically low rates to a new period when the cost of debt could return to average levels closer to those observed over the past 20 years. Others argue that there is no fundamental change in underlying credit market conditions and the credit crunch is a temporary phenomenon. Nobody knows the truth of the matter. However much analysis is done by Ofgem, inevitably there will continue to be much greater uncertainty in the near term about the future cost of capital than has been evident in price control reviews undertaken before the credit crunch.

In the past, regulators have responded to uncertainty about the weighted average cost of capital by allowing "headroom" above the observed current cost of capital when setting the allowed cost of capital for the next price control period. We believe it would not be appropriate to continue to add large headroom, reflecting heightened uncertainty, at the expense of customers. We believe that Ofgem should actively explore in this review

² As distinct from Dieter Helm's proposals which relate to a debt rate for the RAV and an equity rate applied to opex and capex.

adopting regulatory mechanisms which would help manage this uncertainty more effectively, and at less cost to customers, than is currently the case. We encourage Ofgem to revisit the merits of cost of debt adjustment mechanisms which would enable it to set lower headroom in the allowed cost of debt in the next price determination. We are confident that there are robust mechanisms that would allow this result without distorting incentives faced by utilities in terms of efficient financing. We also believe there are mechanisms which offer benefits for customers that far outweigh the incremental risks they would face.

We have previously made the case for considering such cost of debt adjustment mechanisms. Our preferred mechanism would allow a re-opener within the price control period only in the event that the actual cost of debt rose materially above the allowed cost of debt for a sustained period. This risk sharing mechanism should enable the setting of an allowed cost of debt with less headroom in the short term, offering meaningful benefits for customers without prejudicing financeability. We believe that the enhanced uncertainty about the future cost of debt, associated with the credit crunch, makes it appropriate for Ofgem to give serious consideration to such mechanisms during this price control review.

Our *illustration* of the impact of introducing a cost of debt adjustment mechanisms, based on hypothetical, but not unreasonable, parameters shows very substantial savings to consumers - in excess of £400 million over the five years of a control period.

Our comments on the introduction of a cost of debt adjustment mechanism are set out in Section 4 of this report. Annex A sets out an illustration of the impact of a cost of debt adjustment mechanism.

Whether there is any case for financeability uplifts and if so, how they should be funded?

Ofgem adopts the approach that if financeability uplifts are required then they should be NPV neutral and funded through ‘tilting’ of the real depreciation allowance. We believe that this is the correct approach in principle. However, we note that financeability uplifts can only be justified: if the case for large increases in capital expenditure is accepted by Ofgem; and if there is compression of investment-grade financial ratios for a notional efficiently financed utility. There should be no question of financeability uplifts being granted to any company whose financial ratios are compressed because they failed in the past or fail in the future to adopt an efficient financing structure (including raising a significant proportion of index-linked debt during previous price control periods). To apply this logic Ofgem cannot avoid, in our view, forming a judgment about the efficient financing structure of the notional utility.

Our comments on financeability adjustments are set out in Section 5 of this report.

2. DEVELOPMENTS IN THE FINANCIAL MARKETS

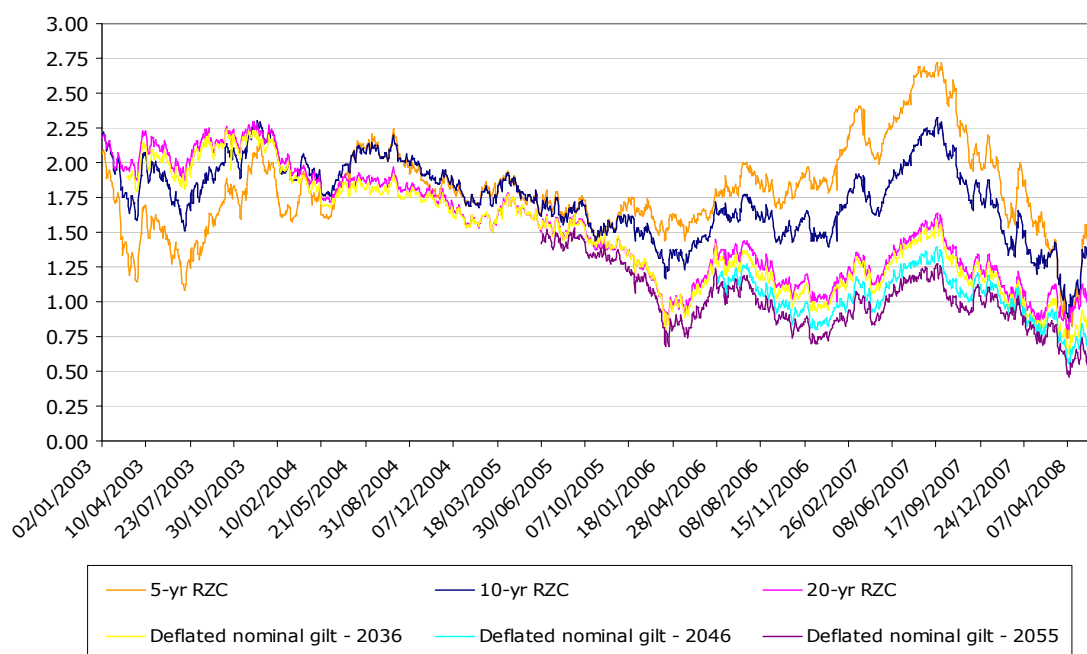
This section sets out our initial views on the impact of developments in the financial markets on the components of the cost of capital.

2.1. Debt market conditions

The recent turmoil in financial markets has caused significant movements in the risk-free rate, the debt premium and the ability of certain companies to raise debt.

Figure 2.1 below illustrates the movement in the risk-free rate over the last five years. Up until 2007, the broad trend towards falling trailing average rates was continuing, but rates then rose sharply in the second half of 2007, but have since fallen back again, broadly to or below 'pre-credit crunch' levels. Note that rates for median maturity debt are still well below the long-term historical average (typically interpreted as 2.5% for the risk-free rate)³.

Figure 2.1: Risk-free rates

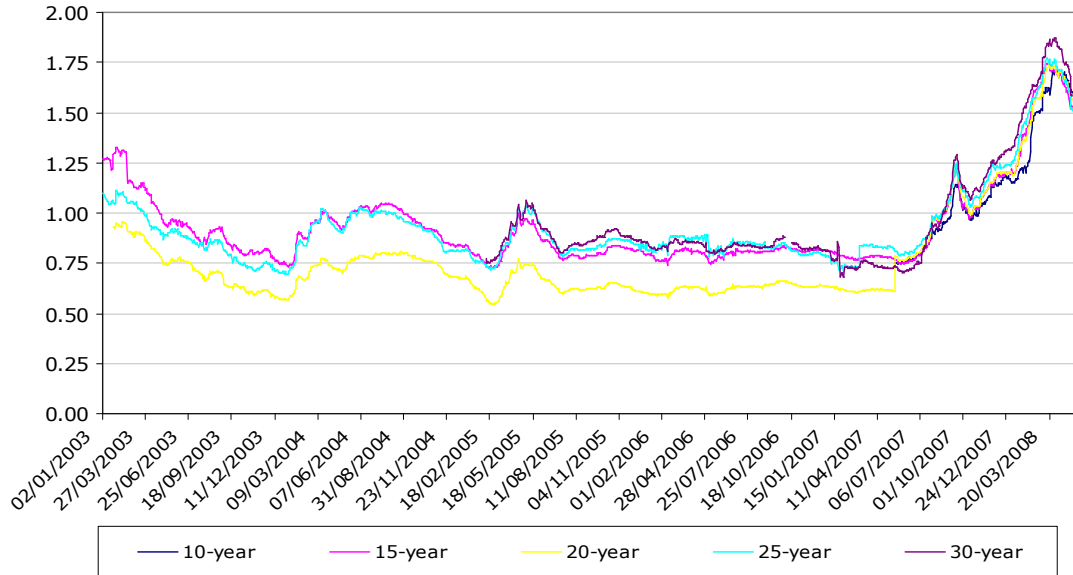


Source: Bloomberg, BoE

As illustrated in Figure 2.2 below, debt premia had followed similar pattern up until mid-2007, but since then rates have risen very sharply and have not yet fallen back to the trend levels of the up to mid-2007.

³ See the Smithers & Co Report of September 2006.

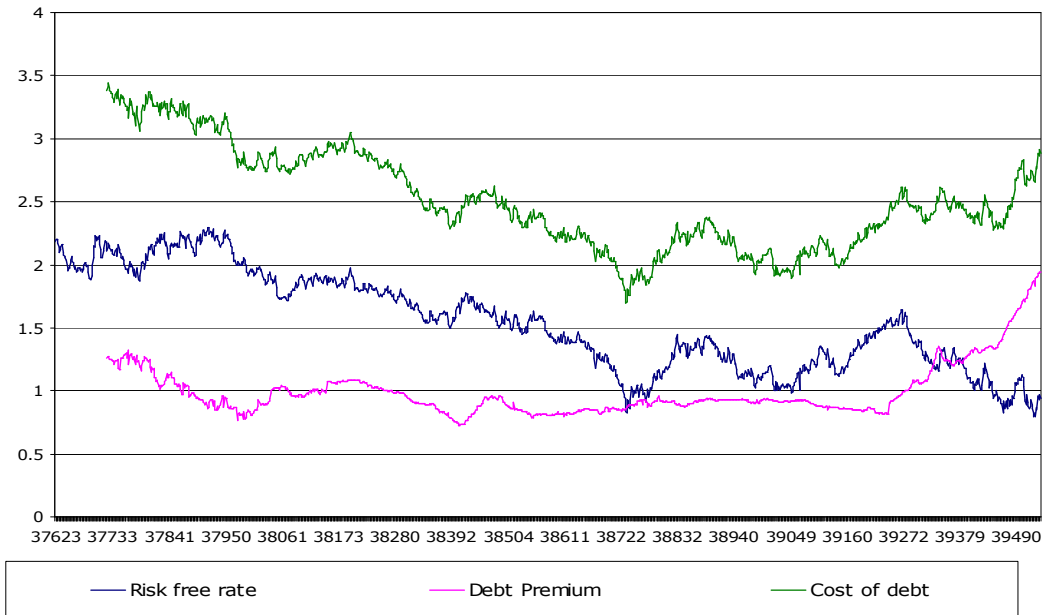
Figure 2.2: Debt premia – Spreads for 'A-' utilities



Source: Bloomberg

The net effect of the combined movements in the risk free rate and debt premia has therefore been broadly neutral, as illustrated in Figure 2.3 below.

Figure 2.3: Cost of debt – 20 year corporate spread plus risk free rate



Source: Bloomberg, BoE

The cost of debt observed from nominal corporate A- rated issues follows, not surprisingly, a very similar pattern. The level of real cost of debt implicit in those nominal issues will depend on the level of inflation expectation selected.

We have considered the yields on corporate debt issued by utilities. The data indicates that the cost of debt issued by utilities benefits from a yield discount compared with other A- corporate debt, evidence of a ‘flight to quality’.

We also observe that investment grade utilities are still able to raise debt in the current market conditions, as illustrated in Table 2.1 below. We do note that the index-linked market has, as of May 2008, dried up – but it is not unreasonable to assume that the index-linked market will be open again at some point during DPCR5.

Table 2.1: Recent debt issues⁴

	Southern Gas Networks	National Grid Gas	National Grid Gas
Issue Date	15/05/2008	13/05/2008	03/03/2008
Volume	£225,000,000	£300,000,000	£300,000,000
Maturity	15/05/2040	13/05/2038	03/03/2020
Yield at issue	6.317	6.113	6.425
Rating	BBB	A-	A-

It is clear that the credit crunch has had a significant impact on financial markets, with movements in pricing and changes in demand/ supply balance for certain types of bond issue. But it is also clear that the impact on investment grade utilities has been broadly neutral, with those utilities continuing to finance themselves at rates well below the current allowed cost of debt for DNOs.

2.2. Equity market conditions

CEPA’s approach to establishing the appropriate allowed cost of equity is to use the broad Capital Asset Pricing Model (CAPM) framework and to cross check this with aggregate market data. This cross check is necessary given the well-known practical difficulties of measuring the Equity Risk Premium (ERP) and of interpreting observed equity betas. In this section we note some of the ongoing market evidence, from two main sources:

- utility transactions; and
- utility share prices.

Utility transactions subsequent to the credit crunch continue to evidence significant premia to RAV, and in our view this is continued evidence of a gap between the allowed cost of

⁴ Note that ratings are for issue not issuer.

capital and the actual cost of capital for regulated companies. The two most relevant transactions are:

- Norweb (November 2007): 45% premium on forecast 2007/8 closing RAV⁵; implied cost of equity substantially below 7%⁶; and
- Southern Water (October 2007): 27% premium to RAV⁷; implied cost of equity around 7%.

CEPA's view is that this provides continued evidence of regulators 'aiming-up' i.e. the headroom between the allowed and actual cost of equity.

As noted in CEPA's recent work on the relevance of Market Asset Ratio (MAR) analysis⁸, we are well aware that anticipated efficiency gains, anticipated out-performance against incentives, anticipated synergies (where utilities are acquired by operators) and bid premia can all have an impact on the observed MAR. Our analysis of the DNOs to date shows that the anticipated value of efficiency gains is likely to be limited and that bidders have paid high premia over a number of years, which implies that premia can be largely attributed to gains on incentives (notably, in the case of DNOs, distribution losses) and out-performance of the WACC (continued high premia may also be considered as evidence that successful bidders are not suffering from 'winners curse'). In the case of Norweb, our analysis shows that the gains on the losses incentive might account for very broadly 20-30% of the 45% premium, and thus the bulk of the premium can be attributed to headroom on the WACC.

Figure 2.4 below compares an index of the share price of a number of 'clean' regulated businesses⁹ compared with the FTSE All share index. This shows evidence of a 'flight to quality' and adds weight to the view that the assumption that an equity beta of regulated utilities of 1 is conservative - since these companies do appear to be less volatile than the equity market as a whole.

⁵ United Utilities press release, 29 November 2007.

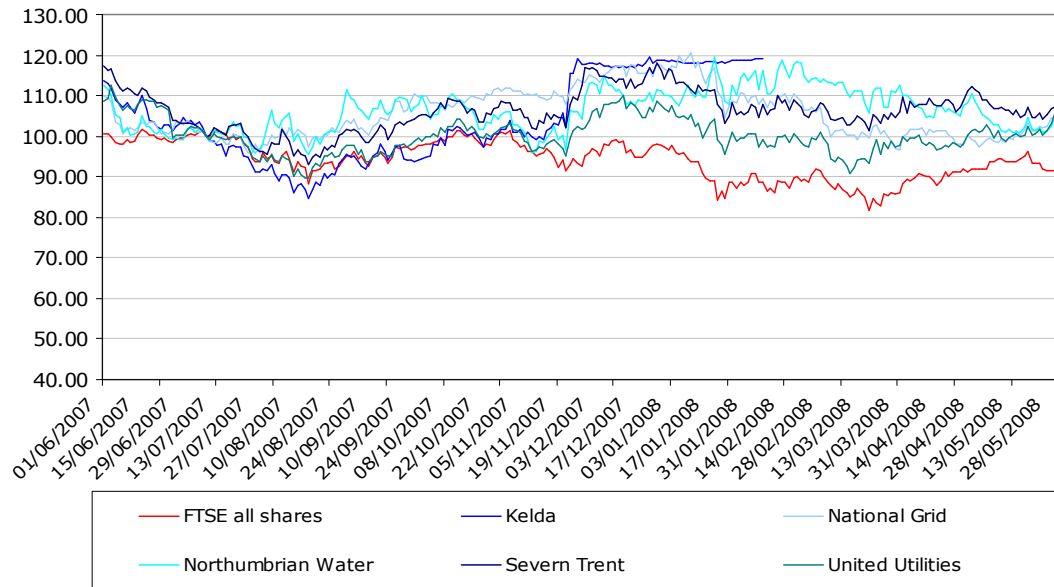
⁶ We have used the same basis of calculation as in CEPA, *Relative Risk and the Cost of Equity*, October 2007.

⁷ Financial Times, 9 October 2007.

⁸ CEPA, *Relative Risk and the Cost of Equity*, October 2007.

⁹ Where the regulated business accounts for the large majority of the enterprise value. The movement in the Kelda's share price reflects the takeover by Saltaire Water (directed by a CitiGroup lead consortium) and subsequent de-listing.

Figure 2.4: Movement of equity prices – FTSE vs. utility share prices



Source: Bloomberg

2.3. Conclusion

Our analysis shows that, so far at least, the impact of the credit crunch on investment grade borrowers has been broadly neutral, with those borrowers continuing to finance themselves at rates well below the allowed cost of debt in the recent GDPCR decision. In addition, there is evidence of a ‘flight to quality’ in both the debt and equity markets, with utility assets being seen as attractive low-risk assets relative to most other sectors.

3. FINANCE STRUCTURES

3.1. Introduction

It is not appropriate at this early stage of DPCR5 to establish a narrow range for the cost of debt, but it is appropriate for Ofgem to be refining its methodology to establish cost of debt. This section therefore considers CEPA's preferred approach to establishing the allowed cost of debt, but does not recommend a range. It also notes that there is no evidence of a need to depart from Ofgem's recent approach to setting notional gearing.

3.2. CEPA approach to setting the allowed cost of debt

This section sets out the CEPA approach to setting the allowed cost of debt in the absence of a cost of debt adjustment mechanism (see Section 4). A regulator needs to set the cost of debt at a level that allows the notional regulated entity to meet the cost of:

- existing fixed rate debt that an efficiently financed notional DNO would have incurred in financing capital expenditure in the past ('embedded debt'); and
- new debt required to efficiently re-finance existing debt and to deliver agreed capital expenditure.

It should do this by taking evidence from a 'components approach' (i.e. establishing an appropriate risk free rate and a debt premium) and an 'all-in approach', which considers the real cost of debt implied by actual corporate debt issues. It is necessary to consider both approaches, as the components approach includes certain assumptions on inflation expectations and the all-in approach requires assumptions about an appropriate 'deflator' - and thus each approach may give a slightly different answer.

Both the components approach and the all-in approach require assumptions to be made about the composition of the debt portfolio for an efficiently financed utility. CEPA's observations of efficient structures indicate that within a notional portfolio:

- the majority of debt will be fixed rate/ hedged;
- significant use will have been made of index-linked debt, although we note that the index-linked market has currently dried-up, and it is uncertain as to precisely when the market will re-open; and
- the weighted average maturity will be around 20 years, spread equally across tenors of up to 10 years, 20 years, and 30 years or more - this will bring the average maturity closer to the weighted average asset lives.

In following this approach, Ofgem would take more explicit account of the likely costs of efficiently incurred embedded debt. This will involve taking account of differences in the

embedded cost of debt and the cost of debt expected to prevail in the forthcoming control period. This might be thought of as a split cost of debt¹⁰:

- with one rate for the sunk capital invested - reflecting the past cost of debt that an efficiently financed business might be expected to have; and
- another rate for new capital investment reflecting the marginal cost of debt.

Assets financed over the past decade (now included in the RAV) were funded at a time when real interest rates were historically very low. There is a reasonable expectation that a notional efficiently financed company would have locked in those lower rates by raising a proportion of fixed-rate debt during previous price control periods. If Ofgem does not take explicit account of this, it risks awarding a single cost of debt which locks-in the spread between the low historic cost of debt and the higher marginal cost of debt, granting gains to utility companies and their shareholders

3.3. Gearing

As noted in previous CEPA papers¹¹, the theoretical optimal level of gearing is that level of gearing at which the marginal interest tax shield benefit (arising from tax allowances) equates to the marginal default risk cost. However, in practice, regulators have not sought to estimate this optimal level directly. Rather, they have tended to use a 'notional' level of gearing as a proxy for the optimal rate. The notional level of gearing is typically defined as the gearing ratio that would be consistent with an efficiently managed company achieving a solid investment grade rating (i.e. A, A-, or BBB+).^{12 13}

The current turmoil in financial markets is having some impact on risk aversion, and on the requirements of credit rating agencies in particular. The current market evidence does, however, point to the continued ability of regulated utilities to achieve gearing levels of up to 70% whilst maintaining a solid investment grade rating, as illustrated in Figure 3.1 below.

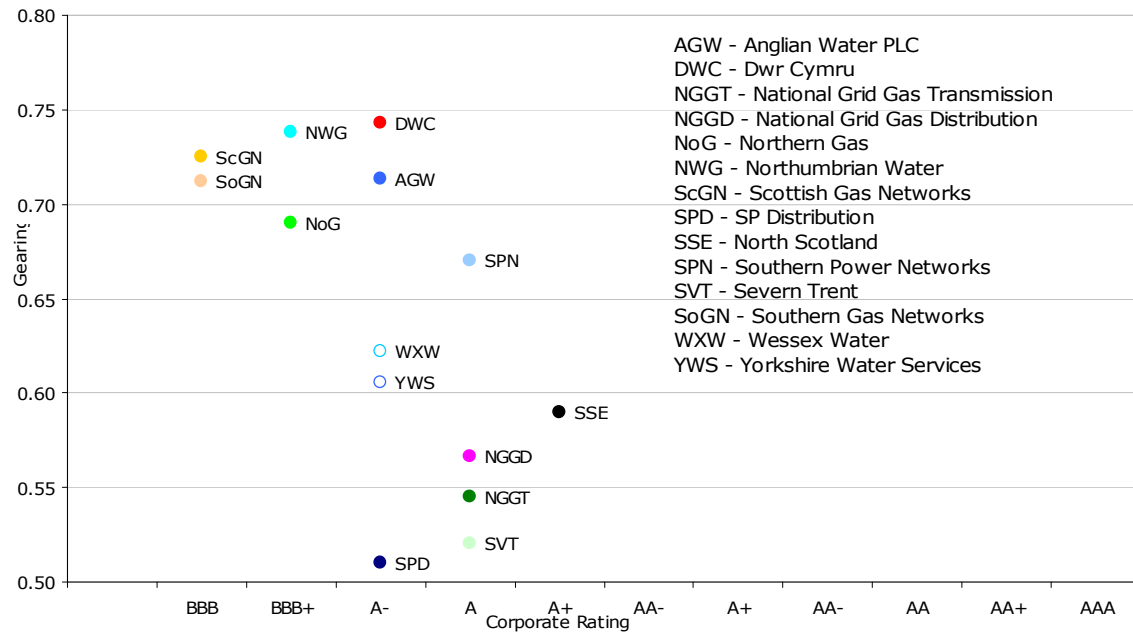
¹⁰ As distinct from Dieter Helm's proposals which relate to a debt rate for the RAV and an equity rate applied to opex and capex.

¹¹ Most recently in CEPA, *Risk Adjusted Cost of Capital for Network Rail*, April 2007.

¹² Standard & Poor's ratings. The use of a 'solid' investment grade rating in setting allowed revenues allows some headroom compared with the licence requirements (in water and energy particularly) to maintain an investment grade rating.

¹³ Our understanding is that Ofgem, when referring to a 'solid' investment grade, tends to consider A- and BBB+ ratings.

Figure 3.1: Gearing and issuer credit rating of network utilities¹⁴



Source: Bloomberg, S&P

Note that:

- it is issuer, rather than issue, rating that should be considered in assessing notional gearing; and
- whilst we have included gearing levels and ratings for the higher-g geared DNOs in Figure 3.1 (North Scotland, SPD and SPN), these companies are typically relatively small subsidiaries of a much larger parent, and it is therefore possible that gearing decisions will in part be driven by group tax efficiency (notwithstanding the fact that DNOs receive a pre-tax WACC and a specific tax allowance) and that the subsidiary rating may in part be driven by the ownership structure, rather than subsidiary gearing.

Any decision on WACC needs to be taken in the context of the overall regulatory settlement. But, given that the market evidence continues to support notional efficient gearing levels for regulated utilities of well over 60%, and, importantly, there is no evidence of those utilities suffering downgrades to below investment grade as a result of the credit crunch, we see no reason why Ofgem should not set the notional efficient gearing level for DNOs at 62.5%, as per the recent GDPCR decision.

¹⁴ Regulated utility's gearing taken from the *Financial performance and expenditure of the water companies in England and Wales*, 2005/06 and Lexicon, *Regulated Utility Capital Structures*, March 2006.

Such an increase in gearing would generate a saving of more than £25m per annum for consumers, assuming Ofgem sets the cost of debt and cost of equity for DPCR5 as per the recent GDPCR.

3.4. Conclusion

Just as regulators take a view on gearing, we believe that they should take more explicit account of financing structures that would reasonably have been expected to be adopted by an efficiently financed notional utility. In doing so, Ofgem would take more explicit account of the likely costs of efficiently incurred embedded debt and avoid granting gains to companies and their shareholders as a result of locking-in the spread between the historic cost of debt and a marginal cost of debt.

4. A COST OF DEBT ADJUSTMENT MECHANISM

4.1. Introduction

Ofgem has invited comments on whether it would be appropriate to introduce a revised methodology to setting the cost of capital, for example through the use of indexation, triggers, or a split cost of capital.

For the purpose of this note, in terms of definitions, we refer to:

- ‘indexation’ as indexing part of the allowed WACC to a pre-determined external benchmark;
- ‘triggers’ as establishing trigger points for components of the WACC, which, once exceeded for a certain pre-determined period, would trigger a revised allowed WACC; and
- and a ‘split cost of capital’ as the setting of two allowed WACCs – one for the historic RAV and one for new capex during the current control period. Note that by ‘split cost of capital’ we do not mean the approach suggested by Dieter Helm (a debt rate for the RAV and an equity rate applied to opex and capex).

CEPA’s view is that it is appropriate to consider further the introduction of a cost of debt adjustment mechanism, with the use of tolerance bands (as would be the case for triggers) and that the likely benefits for consumers of an appropriately designed mechanism will outweigh the potential costs.

The rest of this section then considers further:

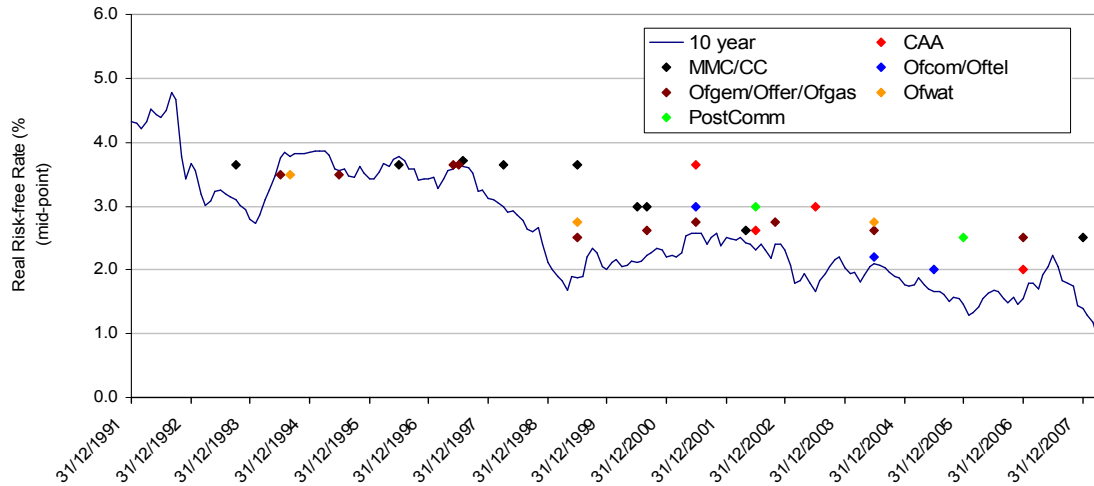
- the case for a cost of debt adjustment mechanism;
- the questions that Ofgem would need to consider prior to introducing a cost of debt adjustment mechanism for the notional cost of debt for DNOs; and
- an illustration of the value of a cost of debt adjustment mechanism to consumers.

4.2. The case for a cost of debt adjustment mechanism

Most UK regulators set the allowed WACC ex ante for the period of the price control. In theory, this leaves the risk of the cost of financing moving above the allowed WACC with the network companies, who then have a strong incentive to fund themselves as efficiently as possible. In practice, however, most regulators, including Ofgem, have in recent control periods set this allowed WACC at levels above the actual WACC to allow considerable ‘headroom’ for movements in components of the WACC in the control period. This is understandable, given the uncertainties over market conditions over a five year period and the regulator’s duty to ensure that an efficient network company can finance its activities.

This 'headroom' over the risk free rate is illustrated in Figure 4.1 below.

Figure 4.1: Benchmark risk free rate compared with UK authority decisions¹⁵



Source: Bloomberg, BoE

Setting the allowed WACC above the actual WACC for a notional efficient company has two main impacts:

- it generates higher returns for efficiently financed network companies; and
- it enables those network companies to charge users an 'insurance premium' for the assumed benefit of reduced volatility.

Introducing a cost of debt adjustment mechanism on incremental notional efficient debt for the DPCR5 would allow the regulator to set both the ex ante allowed cost of debt for that incremental debt and the allowed cost of debt for notional efficient embedded debt closer to the actual cost of debt, thus removing much of the 'headroom'.

4.3. Further questions for Ofgem

The main arguments presented to date against the introduction of a mechanism to adjust the cost of debt in-period are:

- it would ask consumers to bear the risk of an element of movements in components of the WACC, and consumers are not best placed to manage that risk¹⁶;
- it would introduce undue uncertainty into the regulatory framework; and

¹⁵ Regulatory determinations taken from the regulatory proposals of the respective regulators.

¹⁶ Competition Commission, 'Economic Regulation of Heathrow and Gatwick Airports', September 2007.

- it would incentivise the regulated utilities to adopt financing structures that mimic the chosen benchmark.

We briefly consider these arguments in turn. We anticipate providing fuller discussions in due course, and acknowledge that each argument will require greater debate if Ofgem were to consider further the introduction of a cost of debt adjustment mechanism.

Consumers would bear the risk of movements in components of the WACC

This is one of the main objections raised, but it misses the point, because:

- In principle, DNOs should be rewarded for actions to improve costs that they can manage. But DNOs do not control all of the components of their actual cost of capital, and, whilst they can manage some of the elements e.g. through hedging, customers would face a lower cost of managing the risk than they currently bear through the ‘insurance premium’.
- DNOs would retain an incentive to outperform the allowed, indexed cost of debt, as they would keep all the financial gains from out-performance.
- Consumers may prefer to trade some volatility for a reduction in the ‘insurance premium’ that they currently pay. In any case, actual volatility may be very low.
- Volatility can be reduced by designing a mechanism with appropriate tolerance bands, trigger mechanisms and, if desirable, logging up/ down mechanisms.
- Any volatility on the WACC would only relate to the notional incremental debt component.

It would introduce uncertainty into the regulatory framework

Any mechanism should be introduced following extensive consultation with the regulated utilities and designed so as to be transparent. Increased risk arising from the uncertainty regarding the future rate of the allowed cost of debt would be more than offset by the additional protection, and therefore reduced risk, from unanticipated movements in the components of the cost of debt.

It would incentivise the regulated utilities to adopt financing structures that mimic the chosen index

A cost of debt adjustment mechanism could be designed to apply to notional incremental debt in the current review period only. This would give companies a strong incentive to optimise the use of fixed/ hedged debt.

We also note that to date, well managed companies have sought to optimise their financing structures, rather than mimic the structures implied by regulators.

4.4. An illustrative mechanism

4.4.1. Overview

CEPA recently prepared a paper for ORR and Ofwat on indexation¹⁷, which concluded that:

- if a cost of debt adjustment mechanism is introduced it should be symmetric (operate if rates move higher or lower than expected) and should adjust the allowed cost of debt relating to the incremental notional debt only in a single review period; and
- that when a cost of debt adjustment mechanism is rolled forward to the next period, the amount of existing debt against which a non-indexed cost of debt is applied should include the existing debt at the beginning of the prior price review period and any additional notional debt in that period.

It also concluded that in the absence of easily observable and reliable estimates of the equity risk premium (and by extension the cost of equity) it is not possible to create a reliable index of changes in the cost of equity necessary for a robust indexation mechanism.

4.4.2. Illustrative mechanics

The adjustment mechanism itself should reflect movements from an agreed base year level in a benchmark of the real cost of debt of a portfolio of relevant A- rated securities. The mechanics of an adjustment mechanism would involve setting a tolerance band within which there would be no adjustment of the allowed cost of debt. Actual adjustments to allowances could then either be:

- passed on to DNOs within period, to ameliorate financeability concerns; or
- be logged up/down and net adjustments taken into account when setting prices at the subsequent price control review.

In the latter case, there would be no increase in unpredictability of prices during the five year review period, unless there was a compelling case for an interim review.

4.4.3. Illustrative value of ‘insurance premium’ and a cost of debt adjustment mechanism

Annex A provides full details of the illustrative value of the ‘insurance premium’ and a cost of debt adjustment mechanism. Using the selected parameters in the Annex, the *illustrative* cost savings to the consumer resulting from the introduction of a cost of debt adjustment mechanism are in excess of £440 million, with about £390 million of this total saving

¹⁷ CEPA, *Indexing the allowed rate of return*, ORR/ Ofwat, September 2007.

representing those made on the cost of existing debt, and around £60 million representing savings made on new debt.

4.5. Conclusion

The current approach to setting the WACC – setting a single WACC - risks granting continued gains to utility companies and their shareholders as a result of (i) locking-in the spread between the historic cost of debt and a higher allowed cost of debt; and (ii) allowing ‘headroom’ over the current observed cost of debt. Ofgem should therefore consider setting a cost of debt for sunk capital (embedded debt) for a notional efficiently financed company and a cost of debt adjustment mechanism on incremental notional debt for a single review period.

5. FINANCEABILITY UPLIFTS

As noted in ‘Financing Networks: A discussion paper’¹⁸, the financeability issue refers to the practice of increasing allowed revenues to maintain investment grade financial ratios.

Our view is that, in general, companies should be able to manage their finances so as to avoid financeability issues, especially when, as they typically are in network industries, allowed depreciation profiles are less than useful economic asset lives. There can, however, be very specific circumstances in which the timing of cash flows, and therefore investment grade financial ratios, can come under stress, for example due to the level and treatment of a particularly significant capital expenditure programme. In these instances, there may be a case for the regulator to carefully consider NPV neutral financing adjustments.

There can, however, be no case for financeability adjustments being granted to any company whose financial ratios are compressed because they failed in the past or fail in the future to adopt an efficient financing structure.

On the evidence presented to date, including the gearing levels of DNOs, we have not seen any rationale for financeability adjustments in DPCR5, such as the accelerated depreciation currently granted to DNOs.

Ofgem should therefore consider very carefully the need for financeability adjustments in DPCR5, which will have the impact of penalising current consumers over future users (the ‘intergenerational equity’ issue).

¹⁸ Ofwat/ Ofgem, February 2006.

ANNEX A

Introduction

In this annex we present analysis which seeks to illustrate the potential cost savings for the consumer deriving from the implementation of a cost of debt adjustment mechanism with regards to the allowed cost of capital in the electricity distribution network. The analysis is broken down into two parts:

- we first show the cost to the consumer deriving from the deviation between the cost of debt allowed by the regulator and the actual ‘market’ cost of debt; and
- we then provide an illustration of the potential cost savings deriving from the introduction of a cost of debt adjustment mechanism.

The second part of the analysis, in particular, should only be seen as providing an illustration, as the results are driven by the underlying assumptions used. The approach to the analysis is based on the CEPA paper ‘Indexing the Allowed Rate of Return ORR / OFWAT (2007)’.

Cost to the consumer of the headroom

In this section we seek to illustrate the cost to the consumer, of the headroom that results from Ofgem’s approach to setting a forward looking cost of debt.¹⁹

To calculate the cost of the headroom, we develop a measure for the actual cost of debt faced by an efficiently financed business, based on prevailing market conditions, and compare it to the cost of debt set by Ofgem in relation to the electricity distribution network for the price control period 2005 – 2010. The period under observation is April 2005 to April 2008.

In the analysis we have measured the ‘market’ cost of debt for illustrative purposes as:

$$\text{Cost of debt} = \text{real risk free rate} + \text{debt premium},$$

Where:

- The *real risk free rate* is the BoE real yields on the 20 year real zero coupon securities; and
- the *debt premium* is the spread over benchmark security for 20 year A- rated corporate debt.

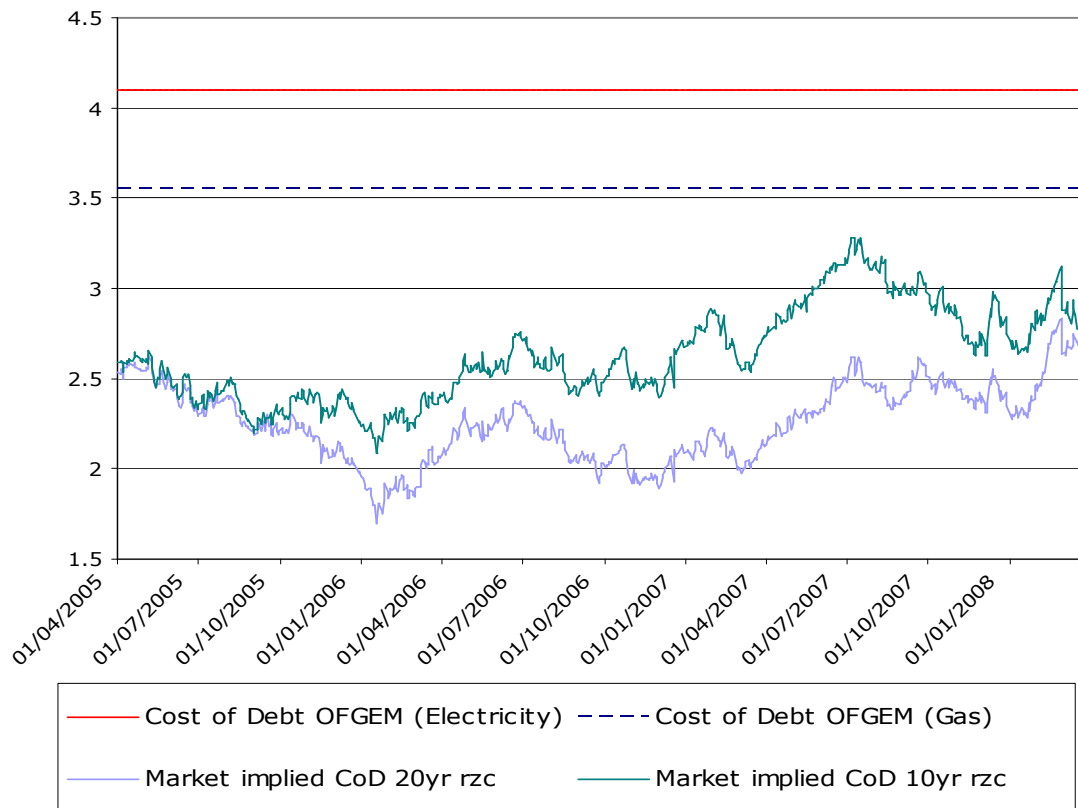
We also measure the cost of debt based on the 10 year real zero coupon and the 10 year A-rated corporate debt, to give a further illustration of the cost to the consumer.

¹⁹ The headroom is the difference between the actual cost of debt faced by an efficiently financed business and the cost of debt allowed by the regulator, in this case Ofgem.

For an additional comparison we also analyse the cost to the consumer of the headroom between the market cost of debt and the cost of debt set by Ofgem in relation to the Gas distribution network for the period 2007 - 2012. This is an important comparator because it demonstrates how the cost of debt set by Ofgem for a price control period beginning in 2007 is significantly different despite the fact that it is within the window of the electricity distribution price review period.

Figure A.1 below depicts the results of the analysis. The cost of debt allowed by Ofgem for the electricity distribution network 2005-10 was 4.1 per cent, represented by the red line.²⁰ The cost of debt allowed by Ofgem for the gas distribution network was 3.55 per cent, represented by the dashed blue line.²¹ The ‘market’ cost of debt based on the 20 year real zero coupon is represented by the green line and the ‘market’ cost of debt based on the 10 year real zero coupon is represented by the purple line.

Figure A.1: The headroom between an efficient business and allowed cost of debt



Source: Bloomberg, BoE and Ofgem

²⁰ See Ofgem, Electricity Distribution Price Control Review, Final Proposals, November 2004.

²¹ See Ofgem, Gas Distribution Price Control Review, Final Proposals, December 2007.

Using the analysis presented in Figure A.1 we estimate the implied cost to the consumer of the headroom between the allowed cost of debt and the cost of debt of an efficiently financed firm. This cost is comprised of:

- the headroom between the allowed cost of debt and the actual cost of debt faced by the company for the notional new debt raised during the period; and
- the headroom between the allowed cost of debt and the actual cost of debt incurred by the company for the existing notional debt stock (the embedded debt) at the start of the period.

The first part of the cost (i.e. on additional notional debt) is estimated by taking the average differences between the cost of capital allowed by Ofgem for the electricity market and the actual cost of debt (based on both the 20 year and 10 year ‘market’ cost of debt) and multiplying these by the cumulative average annual notional new debt raised between April 2005 and April 2008. **For the period April 2005 – April 2008, the total cost of headroom on new debt was £27 million when using the 20 year ‘market’ cost of debt and £21 million when using the 10 year ‘market’ cost of debt.**

The second part of the cost is dependent on the assumption made about the cost of existing debt faced by an efficiently financed company in the electricity distribution sector over previous price control periods. We have not made a formal assessment of this in the Annex, however based on previous work undertaken by CEPA across a range of regulated sectors, our view is that a reasonable estimate of the actual cost of existing debt faced by most efficiently financed, solid investment grade regulated utilities financing themselves over the last 10 years will be in the range 2.75% - 3.25%. We therefore calculate the total cost to the consumer based on a range of assumptions (2.5% - 3.5%) on the cost of debt faced by a firm on its existing debt.

The cost savings for the consumer on the regulated companies existing debt are presented in Table A.1 below. These savings are calculated by comparing the cost of existing debt implied by the cost of debt allowed by the regulator, to the cost of existing debt implied by our range of cost of debt assumptions.

Table A.1: The cost savings on existing debt £.m

	2.5%	2.75%	3%	3.25%	3.5%
Electricity	338	285	232	179	127
Gas	222	169	116	63	11

Tables A.2 and A.3 below we show the total cost to the consumer of the headroom between the allowed cost of debt and the ‘market’ cost of debt over the three financial years under consideration. These figures are calculated by taking the cost savings on new debt, for both the 20 year and 10 year ‘market’ cost of debt and adding the cost savings on the existing debt presented in table A.1 above. The same procedure is used to present the cost to the consumer based on the allowed cost of capital for the gas distribution network.

Table A.2: Results based on 20 year real zero coupon £,m

	2.5%	2.75%	3%	3.25%	3.5%
Electricity	365	312	259	206	154
Gas	240	188	135	82	29

Table A.3: Results based on 10 year real zero coupon £,m

	2.5%	2.75%	3%	3.25%	3.5%
Electricity	358	306	253	200	147
Gas	234	181	129	76	23

The indicative figures shown in Tables A.2 and A.3 suggest that the cost to consumers incurred as a result of the headroom between the allowed cost of debt and the ‘market’ cost of debt is significant. It is also instructive to note that there is over a £100 million cost to consumers arising from the difference between the cost of debt allowed by Ofgem with respect to the electricity market compared to the cost of debt allowed for the gas distribution market.

Cost savings from a cost of debt adjustment mechanism

The introduction of a cost of debt adjustment mechanism regime should allow the regulator to adjust the allowed cost of debt during the price control period and thus reduce the cost to the consumer resulting from the headroom.

We first discuss how a cost of debt adjustment mechanism regime might work. The key variables to consider are:

- the starting point for the allowed cost of debt;
- the tolerance band, i.e. the extent by which the allowed cost of capital is allowed to differ from the ‘market’ cost of debt;
- the periodicity: both the time lag occurring before the regulator would make a decision on adjusting the allowed cost of capital and the precise nature of the decision rule; and
- both the amount and direction by which the regulator can adjust the allowed cost of capital.

In the illustration that follows we assume that that:

- the allowed cost of debt starts at 3% at the beginning of the price control period;
- the size of the tolerance band is 25 basis points;
- the period over which adjustment would be considered is half-yearly;

- if the average difference between the allowed cost of debt and the ‘market’ cost of debt is greater or less than the tolerance band over the 6 month period the regulator can adjust the allowed cost of debt; and
- the allowed cost of debt can move up or down by 25 basis points.

Thus if the average difference between the ‘market’ cost of debt and the allowed cost of debt is greater or less than 25 basis points over the preceding six month period, the regulator will increase or decrease the allowed cost of debt will by 25 basis points. The average difference between the market and allowed cost of debt is calculated at the end of each six month period beginning April 2005.

The allowed cost of debt is assumed to start at 3% at the beginning of the period as in our view it is a reasonable but conservative estimate of the actual cost of existing debt faced by an efficiently financed regulated company.²²

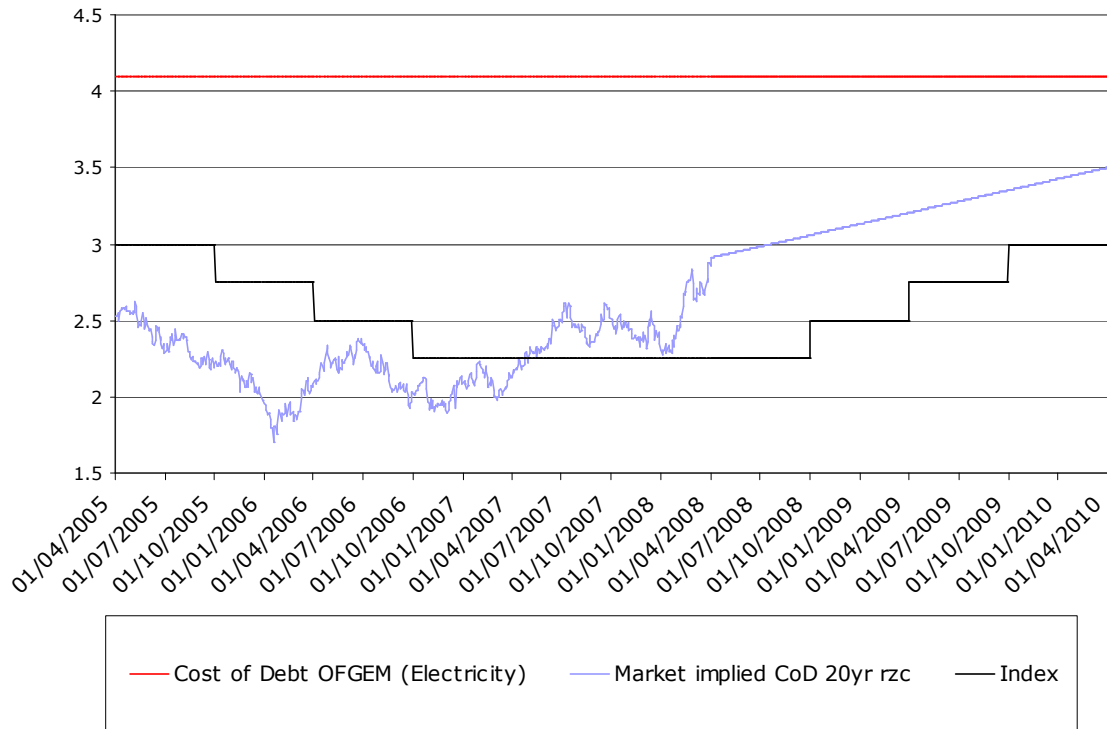
To provide an illustration of the potential impact of the cost of debt adjustment mechanism over the entire price control period, and the potential need for the regulator to make upward adjustments to the allowed cost of debt, we include a purely hypothetical projection on the ‘market’ cost of debt that runs to April 2010. In this hypothetical projection we assume that the ‘market’ cost of debt trends upwards to 3.5% by April 2010.

In Figure A.2 we present the results of the analysis. It is important to note that the results are heavily dependent on the assumptions used and are intended to provide an illustration of the potential cost savings from a theoretical mechanism. We are not, in this Annex, intending to make recommendations on how a cost of debt adjustment mechanism might operate in practice.

In Figure A.2 below we re-plot the cost of debt allowed by Ofgem for the electricity distribution network, represented by the red line, and the ‘market’ cost of debt (based on the 20 year real zero coupon), represented by the purple line. In addition we plot the cost of debt that would be allowed by the regulator under the parameters set in our illustrative indexation regime – the black line; with adjustments to the indexation regime driven by the difference between our benchmark cost of debt based on the 20 year real zero coupon and the allowed cost of debt. The period under consideration is April 2005 – April 2010.

²² It is also the mid-point of the range of values discussed in the preceding section of the annex and is thus useful example for illustrative purposes.

Figure A.2: Illustration of a cost of debt adjustment mechanism



Source: Bloomberg, BoE, Ofgem and CEPA

As shown in Figure A.2 under the parameters of our illustrative cost of debt adjustment mechanism, the allowed cost of debt would initially decline from 3% to 2.25%, before increasing to 3% by the end of the period under consideration, triggered by our hypothetical assumption that the market cost of debt increases gradually to 3.5% by April 2010.

The illustrative benefits to consumers from the introduction of a cost of debt adjustment mechanism can be broken down into the following components:

- the ex ante saving made through the allowed cost of debt applied to the existing debt stock being lower;
- the ex ante saving from the allowed cost of debt applied to new debt being lower; and
- the ex post saving (or cost) from adjustments in the allowed cost of debt intra period due to movements outside the tolerance band of the observed actual cost of debt.

To calculate the total cost savings over the five year price control period from the introduction of a cost of debt adjustment mechanism we simply compare the costs associated with the allowed cost of debt set under the regime to the state of the world in

which there is no cost of debt adjustment mechanism and the allowed cost of debt is fixed throughout the price control period.

Comparing the two states of the world, the cost savings to the consumer resulting from the introduction of a cost of debt adjustment mechanism is approximately £441 million over the full five year control period, with £387 million of this total saving representing savings made on the cost of existing debt and around £54 million representing savings made on new debt.