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Changing course through sustainable financing

Options to encourage equity financing in the water and energy sectors

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For further information on this report, please contact:

Dr Tony Ballance Severn Trent Water Director, Strategy and Regulation t: + 44 (0)24 7771 5000 e: tony.ballance@severntrent.co.uk

or

Paul Whittaker National Grid UK Director of Regulation t: + 44 (0)1926 653190 e: paul.whittaker@uk.ngrid.com

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Foreword

Reliable water and energy supplies are vital to every home and critical to a competitive economy. The water and energy sectors have been investing heavily to improve infrastructure and they both face significant capital programmes to meet future challenges – replacing and renewing ageing infrastructure, meeting changing and growing demands on the networks, and delivering environmental improvements.

At the same time, the evolving economic and financial crisis of the past few years means that public sector finances are now very stretched, and there is growing competition for the limited private sector funds that are available for investing in infrastructure. Consumers too are facing stretched finances, so the pressure to constrain utility bills is increasing.

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Against this backdrop it is essential that the financial structure of the companies in the sectors enables finance for the future investment programme to be raised, when required, and at reasonable cost. Most of the energy and water networks in Great Britain were privatised in the late 1980s and early 1990s and since that time have invested heavily to improve services, renew and improve the networks and provide increased capacity.

Up to now most of the additional finance that has been needed to fund their growing asset base has been raised by borrowing and many companies have even reduced their equity financing. We think that this financing model cannot be relied on indefinitely.

There are risks in highly-geared financial structures and there may be limits to the capacity of the debt market to continue to provide low-cost finance. In addition, one company getting into financial difficulties could have long-term impacts on the financial market's confidence in the regulatory framework and its assessment of risk in the utilities sector. The financial and banking crisis in 2008, the credit crunch that followed, and more recently the sovereign debt crisis and associated turmoil in financial markets all underline that there may be benefits from a lower risk approach to financing in the sector, in which not all future finance is raised from borrowing.

Severn Trent Water and National Grid are both concerned that there should be a sustainable approach to financing, and so have worked together to consider how this can be achieved. We think that action should be taken to encourage additional equity financing, rather than waiting for problems to develop. This is an issue of the long-term approach, rather than how the cost of capital is set at price reviews.

We are not proposing radical change, such as a rapid shift to lower gearing, which itself could create instability. What we are seeking is recognition that there needs to be an evolutionary change in the regulatory framework to encourage equity finance, to help to ensure that additional finance can be raised from shareholders when needed. More thought will need to be given to how the framework should be developed, but this report is intended to stimulate and contribute to that debate.

AJ Ball

Dr Tony Ballance Director, Strategy and Regulation Severn Trent Water

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Paul Whittaker UK Director of Regulation National Grid

Executive summary

- The utility sector and its regulators are running the risk of basing future funding on yesterday's paradigm.
- In the last 20 years the water and energy network sectors have financed their investment mainly by borrowing.
- Both sectors will be continuing to invest heavily to meet future challenges, such as addressing climate change and delivering environmental improvements. Companies need to be able to raise finance for these future investment programmes at a reasonable cost.
- We do not consider that relying indefinitely on borrowing to finance these programmes is a sustainable approach. There is a risk that relying solely on continued borrowing will exhaust the sources of finance used in the past. Financial markets have changed and are more aware of risk, while new regulations on capital requirements may make credit more difficult to obtain.
- Excessive reliance on borrowing also increases the risk of companies getting into financial difficulties.
 One company getting into financial difficulties could have long-term impacts on the financial markets' confidence in the regulatory framework, and so affect other companies across the utility sectors.
- High gearing also increases risk aversion, making it less likely that the innovative approaches that are needed in the sectors will be adopted.

- In order to develop our analysis and proposals, we commissioned Makinson Cowell to carry out a survey of equity investors in the regulated utilities.
- We think that changes to the regulatory approach could encourage sustainable financing. We are not proposing radical change, such as a rapid shift to lower gearing, which itself could create instability.
 We recognise that any changes would need to be thought through carefully before being implemented.
- This report is looking at the long-term approach to financing, rather than how the cost of capital is set at price reviews. These are the subject of separate debates in the energy and water sectors, to which both National Grid and Severn Trent contribute.
- A combination of evolutionary changes should be considered, including:
 - changes in the incentive framework;
 - regulatory changes to give greater confidence that long-term returns will justify equity investment; and
 - taking a realistic approach to financeability and cash flow requirements.
- This report gives some ideas to stimulate debate on future options.

Why a sustainable approach to financing is necessary An effective infrastructure – and investment to maintain and improve the infrastructure – are key to national competitiveness and strong economic growth.

In the past five years an estimated £150 billion has been invested in the UK's infrastructure. The Government anticipates that further investment of £40-50 billion will be needed each year until at least 2030. Much of this investment will be required by the water and energy sectors, which now face an unprecedented set of challenges.

To date, the water and energy networks' investment programmes and regulatory capital value (RCV) growth have been funded largely by borrowing. In our view there are significant disadvantages from relying so heavily on debt finance, with continuing increases in gearing, and there is a significant risk that debt markets alone will not provide sufficient additional capital. We have, therefore, sought to identify possible approaches that could encourage higher levels of equity financing.

Borrowing and gearing have increased considerably over a number of years

At privatisation both the energy and water sectors had low gearing. Today, however, average gearing in the water industry is around 70% and, as shown in Figure 2, in electricity distribution almost all companies had gearing of more than 60% by 2009.

These high levels have resulted from companies financing capital expenditure through borrowing, and from 'financial engineering' to replace equity with debt. In the water industry alone, borrowing has increased from zero at privatisation to around £35 billion.

In part this increase in borrowing may be because of the costs, both financial and reputational, of raising equity. However, in our view it is also because management observe that certain classes of investors appear relatively sanguine about risk, perhaps because risk has been mispriced or because investors believe that in some circumstances a company would be 'bailed out' if it got into financial difficulties, reducing the risk from higher gearing. This is an instance of 'moral hazard', a situation where there is a tendency to take undue risks because the costs are not borne by the party taking the risk.

Higher gearing was initially driven, at least in part, by the tax advantages to be gained by increasing debt. However, gearing has in many cases continued to increase even though regulators now claw back these tax gains.

Figure 1: Water industry debt and gearing



Source: Ofwat financial performance reports

100% Excl. subordinated debt 90% Avg. excl. subordinated debt 80% 70% 60% 50% 40% 30% 20% 10% 0% EDF WPD CE SP ENW CN SSE Electricity distribution companies

Figure 2: Electricity distribution gearing

Source: Ofgem, Electricity Distribution Price Control Review Final Proposals – Allowed Revenues and Financial Issues (7 December 2009)

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The future outlook for financing

There will be a steep increase in investment in the utility sectors to meet challenges such as climate change, the associated change in the nature of energy generation and distribution, and achieving new environmental standards.

Perceptions of risk have changed following the financial crisis, and changes in financial regulation and in investment approaches by pension funds mean that long-term debt finance may not be as readily available.

This raises a number of questions:

- Will interest rates need to rise in real terms to attract the additional finance, in view of:
 - government debt at levels not seen since the 1960s (nearly 80% of GDP);
 - the overall growth in the bond market in real terms;
 - competition for finance from growing investment in developing countries?
- Will the bond market be willing to finance this investment, given that some bond investors have caps on the proportion of their portfolio which they will invest in utilities?
- In view of the projected increase in borrowing, which will increase gearing, will utilities be able to maintain the credit rating necessary to issue bonds on reasonable terms?

Given the size of the future investment programme, there is a risk that relying solely on continued borrowing will exhaust the sources of funds that utilities have relied on in the past, and at the very least will lead to increased borrowing costs.

What are the implications of high levels of gearing?

A large capital programme in future means that if the investment programme continues to be financed largely by borrowing, to the extent that it has in the past, gearing will continue to increase. Gearing in the water sector is projected to exceed 80%.

High gearing increases the risk of financial distress, which would have an adverse impact on customers and on the future cost of financing for other companies in the sector, and for other utilities. Regulators are generally concerned when one generation of customers is disadvantaged relative to another generation, and the impact of financial distress is a large potential burden on future customers.

To mitigate the risk of financial distress, companies may become more risk averse and less inclined to innovate. This goes against the changes in the regulatory framework that regulators are currently seeking to make. These changes are designed to encourage innovation and competition, and involve increased incentives and greater risk.

Encouraging equity finance

We consider that there is scope for retaining and attracting additional equity finance to the utilities sector. However, getting the right incentives, the right balance between risk and return, and confidence in long-term returns, are key to attracting equity. Without action, it is likely that the investment programme will continue to be financed by borrowing, with the associated risks that this brings. Our survey of equity investors has helped to identify the factors which influence equity financing.

The water and energy regulators are undertaking, or have completed, wide-ranging reviews of the regulatory framework for their sectors. Although Ofwat's review is still ongoing, there is no evidence that it is considering a significant change in its approach to price setting in order to encourage equity financing. Similarly, Ofgem's review included little explicit recognition that higher levels of gearing are a concern or that equity financing needs to be encouraged.

Options for change

We have considered a range of options. This includes changes which directly affect financing decisions, and changes to the regulatory regime which involve increased incentives.

We have evaluated these in terms of their impact on the following criteria:

- · sustainable financial structure,
- · investor confidence,
- customer bills,
- practicality and simplicity,
- regulatory incentives.

Our aim is to stimulate further debate amongst stakeholders in the water and energy sectors. At this stage we are not seeking to provide a definitive solution but to draw attention to the issues, and to make some suggestions for changes to the regulatory framework. We recognise that any change needs to be carefully thought through to minimise the risk of unintended effects.

Our overall objective is that the companies should face strong incentives to perform well, face exposure to an acceptable level of risk, and be able to finance their business (that is, raise funds when needed and reward existing investors appropriately). A combination of changes should be considered, including:

- increased exposure of companies to incentives, which will also drive improved performance and innovation;
- a stronger incentive regime for less highly geared companies, to reflect their greater ability to bear risk;
- mitigating long-term regulatory/political risk, giving greater confidence that long-term returns will justify equity investment; and
- taking a realistic approach to financeability and cash flow requirements.

The approach proposed for the energy sector in Ofgem's RIIO framework (its new approach to setting prices), although as yet untested and unproven, could help deliver these changes. The framework involves companies making an initial proposal for the overall financial package. This, together with the proposed risk and uncertainty mechanisms, can be designed to enable them to attract finance and maintain financeability whilst also incentivising innovation, output delivery and strong operational performance. Where different companies face different circumstances and demands, a different financial package and set of risk and uncertainty measures can be expected to be proposed, even in a single industry sector. A 'menu' approach, with companies selecting an appropriate package, could be used to implement this framework.

The changes we have identified could together form a solution that would address the concerns identified earlier in an effective way and without adverse consequences.

- They would encourage lower gearing to reduce company exposure to risk of financial failure, or at least would discourage the highest levels of gearing currently seen, which transfer some risk to customers.
- They would be NPV-neutral for consumers (once risk transfer is taken into account) – with no material increase in short-term charges.
- They would facilitate stronger incentives on companies to perform and innovate.
- By encouraging more equity and more robust capital structures, they would encourage adequate investment (and ensure that there are no financing constraints on this).
- They would address the legitimate expectations of current equity investors/owners.

Further steps might be needed at a later stage, depending on the success of these initial measures.

Conclusions

The utility sector and its associated economic regulators are running the risk of basing the future funding of the sector on yesterday's paradigm, whereas there is now generally much greater awareness of the risks of excessive borrowing. Governments, banks, industry and consumers are all aiming to reduce their debt. Given the unfolding financial crisis of recent years, the economic background is that:

- risk is more acutely understood, priced and managed;
- financial markets are more uncertain, and funds are becoming more difficult to obtain;
- pension funds may no longer be an increasing source of bond finance; and
- new regulations on capital requirements, such as Solvency II, risk making credit structurally tighter to obtain.

We consider that encouraging equity to stay in the sector and incentivising additional equity financing exposes customers to less risk and is likely to be cheaper in the long run, once this reduced risk is taken into account. It would also facilitate stronger incentives on network utilities to perform and innovate. We believe that changes to the regulatory framework could encourage a more sustainable approach to financing, with increased equity participation and more diverse ownership.

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Objectives for sustainable financing

In this chapter we set out the importance of ensuring that the future investment programme of the utility sector is financed in a sustainable way.

In future the water and energy sectors will require substantial amounts of finance in order to deliver their investment programmes. Adopting a sustainable approach will ensure that this investment is financed at a reasonable cost to customers.

To date, capital programmes and RCV growth have largely been funded by borrowing. In our view there could be significant disadvantages from relying so heavily on debt finance in the future, with continuing increases in gearing. This report therefore seeks to identify possible approaches to encourage higher levels of equity financing.

Why sustainable financing is important from a public policy perspective

An effective infrastructure – and investment to maintain and improve the infrastructure – are key to national competitiveness and strong economic growth. Indeed, the entire economy relies on good infrastructure being in place.

In the past five years an estimated £150 billion has been invested in the UK's infrastructure. The Government anticipates that further investment of £40-50 billion will be needed each year until at least 2030^{1} .

Much of this investment will be required by the water and energy sectors, which face an unprecedented set of challenges, against a backdrop of increasing population and likely increases in demand for energy and water:

- To meet carbon reduction targets for the energy sector and ensure long-term energy security will require fundamental changes in the way energy is generated. The transmission and distribution networks will need to be adapted to accommodate these changes.
- In the water and waste water sector, investment will be required to deliver further environmental improvements, adapt to climate change, meet structural water shortages in certain parts of the country, and increase network resilience.

A study by Ernst & Young² in 2009 estimated that £234 billion would be needed by 2025 to meet the UK's energy goals. Ofgem has estimated that capital expenditure in energy transmission and distribution will range from £30 billion to £40 billion between 2009 and 2020³. Figure 3 shows the projected increases in capital expenditure in the energy sector. Severn Trent⁴ has estimated that investment in the water and waste water sector in the 20 years to 2030 could be as high as £96 billion. Gearing in the water sector is projected to increase further from today's levels, averaging around 70%, and to exceed 80%.

Figure 3: Projected increases in capital expenditure in the energy sector



Source: Ofgem, Project Discovery: Energy Market scenarios (October 2009)

¹ HM Treasury and Infrastructure UK, National Infrastructure Plan 2010 (October 2010).

² Ernst & Young, Securing the UK's energy future: meeting the financing challenge (February 2009).

³ Ofgem, Project Discovery: Energy Market scenarios (October 2009).

⁴ Severn Trent Water, Changing course: Delivering a sustainable future for the water industry in England and Wales (April 2010).

At the time when both sectors will be seeking substantial levels of finance there will also be global competition for capital, and credit is expected to become increasingly scarce. A recent McKinsey report⁵ suggested that increasing levels of investment in developing countries, together with a fall in savings, particularly in China, will lead to a long-term imbalance between savings and investment. As a result, *"businesses and investors will have to adapt to a new era in which capital costs are higher"*.

In addition, any financing difficulties in one sector are likely to have knock-on effects across infrastructure financing in terms of the cost of borrowing.

The Ernst & Young report concluded that: "without sufficient confidence that future returns on new investment will be adequate to cover financing costs, in addition to sustainable shareholder return, there is a risk that the UK's energy investment needs will not be met and that investment capital is redeployed to other sectors of the economy and possibly other countries." Severn Trent Water and National Grid are both concerned that there should be a sustainable approach to financing. We have therefore worked together to consider how this can be achieved. Our work builds on Severn Trent Water's earlier *Changing course* report, which suggested that financing the future capital programme by continuing to increase borrowing would not be sustainable.

As part of our analysis, in order to establish equity investors' views on future financing, we commissioned Makinson Cowell, a leading capital markets advisory firm, to carry out a survey of institutional equity investors. A summary of its report is provided as Annex 1 and our work takes into account the key issues raised by investors in the survey.

This report considers the issues further and investigates options to encourage equity financing. It is not intended to provide a definitive solution but to draw attention to the issues and the options for action.

5 McKinsey Global Institute, Farewell to Cheap Capital? The implications of long-term shifts in global investment and saving (December 2010).

Our objectives for sustainable financing

The approach to financing must be considered within the context of the sectors' regulatory frameworks. It must also take account of the interests of consumers. Financing costs account for 30% of consumers' water bills, and around 25% of energy network costs. These proportions are likely to increase over time, so it is important to ensure that investment is financed at reasonable cost.

We are seeking to achieve a more sustainable approach to financing in order to ensure that:

- returns are sufficient to maintain investor confidence and enable finance to be raised in future;
- the sectors are incentivised to make appropriate and well-justified investments (to maintain service continuity and develop the system);
- investment programmes are financed at a reasonable cost to customers;
- there is an appropriate balance of risk between investors and customers; and
- the sectors have the flexibility they need to access a range of sources of capital.

We consider that there are significant disadvantages inherent in the most highly geared structures. This report therefore highlights possible approaches to encourage existing equity to remain within the sector and, where appropriate, to encourage financing from additional equity.

This is not an issue about how the cost of capital is calculated, or its level, but about:

- capital structure, and how it is influenced by the regulatory framework; and
- the ultimate sourcing of funds to meet investment needs.



Increases in borrowing and gearing

In this chapter we illustrate the increases in borrowing and gearing that have taken place in both the water and energy network sectors. Capital expenditure and RCV growth have largely been financed from increasing debt.

The approach up to now has led to higher borrowing and gearing

In previous price control reviews in both the water and energy network sectors a single weighted average cost of capital (WACC), based on an assumed level of gearing (debt:RCV) has been applied, regardless of actual gearing. At the 2009 water price review, for example, Ofwat set a cost of capital at 5.1% (gross of debt tax shield), based on a cost of debt of 3.6% (in real terms, equivalent to a nominal rate of around 6%) and a cost of equity of 7.1%. Providing that companies can continue to borrow at a cost lower than the 5.1% cost of capital (around 7.5% in nominal terms), then gearing up increases the rate of return to equity.

In the water and waste water sector, gearing up and a large capital programme have both led to higher levels of borrowing and gearing (see Figure 4). Water industry debt has increased from zero at privatisation to around £35 billion. Reducing rates of return (see Figure 5), particularly after the 1999 price review, contributed to encouraging an exit of equity from the sector.



Figure 4: Water industry debt and gearing

Source: Ofwat financial performance reports

Figure 5: Water company post-tax return



Source: Ofwat financial performance reports

In the first six years following water privatisation in 1989 equity contributed to financing the capital programme (principally through retained earnings). However, since then the level of equity financing has been falling (see Figure 6).

Although gearing has increased incrementally across the sector a number of the companies have also undertaken wholesale financial restructurings, involving replacing equity with debt. In highly geared companies, the amount of equity finance has been reduced below the initial level in real terms. The differences are illustrated in the examples in Figures 7 and 8.

The move away from equity financing has been associated with a change in ownership over the past ten years, with ownership of many water and energy network companies moving away from listed Plc shareholders to infrastructure funds and fund consortia. These tend to have high gearing, as Figure 9 shows.

By contrast, as Figure 10 shows, gearing has increased less in the three water companies (namely Severn Trent Water, South West Water and United Utilities) that have been publicly quoted on the London Stock Exchange during the same ten-year period.

Gearing has also increased in the electricity and gas industries. Gearing in the electricity distribution businesses, for example, increased from around 25% at privatisation to around 70% by late 2009 (including group debt supported by regulated cashflows). The figure would have been even higher if subordinated debt is taken into account⁶, as Figure 11 shows.

As we explain in Chapter 4, the scale of future capital programmes could lead to further increases in gearing.

Figure 6: Water industry financing



Figure 7: Severn Trent Water financing



Figure 8: Southern Water financing



Source: Ofwat financial performance reports

6 Ofgem, Electricity Distribution Price Control Review (DPCR5) Final proposals: Allowed revenue and financial issues, Figure 1.6 (December 2009).



Figure 9: Ownership type and gearing in the water sector

Source: OFT, Infrastructure Ownership and Control Stock-take, December 2010 and Ofwat financial performance reports

Figure 10: Water industry gearing

Figure 11: Electricity distribution gearing



Source: Ofgem, Electricity Distribution Price Control Review Final Proposals – Allowed Revenues and Financial Issues (7 December 2009)



Source: Ofwat financial performance reports



Why gearing has increased

In this chapter we consider the various drivers of increased gearing in the utility sector.

Higher gearing was initially driven, at least in part, by the tax advantages to be gained by increasing debt. Although these tax gains are now clawed back by regulators, gearing has continued to increase.

This may be partly because of the costs of raising equity. But it may also be partly because certain classes of investors are relatively sanguine about risk, perhaps because risk has been mispriced or because investors believe that in some circumstances a company would be 'bailed out' if it got into financial difficulties, reducing the risk from higher gearing.

Tax benefits have influenced levels of gearing

Conventional corporate finance theory, in particular the work of Modigliani and Miller⁷, suggests that the cost of capital is largely unaffected by capital structure. Although the cost of debt is lower than the cost of equity, both become more risky as companies gear up. In response, the level of return that is required by investors also increases. The higher required returns balance the impact of switching from equity to debt, so the WACC remains the same.

An important exception to the supposition that the cost of capital is not affected by the company's capital structure concerns the position in relation to tax. Interest payments are tax-deductible, whereas dividend payments are not. This means that the post-tax cost of capital is reduced if a company increases its gearing.

This tax advantage was created when Advance Corporation Tax was abolished in 1999 (the tax had taken account of corporation tax already paid in taxing individuals on receipts from dividends). At this point it became financially beneficial for a company to gear up – at least to the point where the risk of financial difficulties becomes significant.

Ofwat's discussion paper on financeability states that, "In broad terms, the capital structure of a firm can be characterised as a trade-off between the tax benefits of debt finance and the expected costs of bankruptcy"⁸.

These tax advantages initially acted as a major incentive for utility companies to increase their gearing, as there were significant tax advantages from gearing up. However, the position changed once regulators started to claw back the tax gains. This is shown in Figure 12, which illustrates how the tax advantages of increased gearing have changed over time in the water sector.

The case for regulators making this claw back is that there is no net social benefit from companies gearing up to reduce their tax bills.

As the Chairman of the Financial Services Authority, Adair Turner, noted when referring to bank gearing: *"it is vital to grasp that that tax treatment creates a private cost of higher equity capital but not a social cost… There is no general social interest in 'economising in the use of equity capital' (i.e. having higher leverage)*"⁹.

Figure 12: Tax advantages of increasing gearing by 25% above regulatory assumptions



In its inquiry into the price limits determination for Bristol Water, the Competition Commission called claw back into question. It stated: *"We consider that the gearing assumed in the WACC should be consistent with the gearing used to assess financial ratios and calculate tax"*.

It also stated that: "We did not consider our approach constituted an invitation to Bristol Water to gear up further to the detriment of consumers, as consumers are protected through Bristol Water's licence obligation to maintain an investment grade credit rating and the special administration procedure for insolvency"¹⁰.

The fact that there may be some doubt about whether or not tax advantages will continue to be clawed back in future may further encourage companies to increase their gearing.

⁷ M. Modigliani, F. Miller, The Cost of Capital, Corporation Finance and the Theory of Investment, in 'American Economic Review' (1958).

⁸ Ofwat, Financeability and financing the asset base – a discussion paper (April 2009).

⁹ Adair Turner, Reforming finance: are we being radical enough? Clare Distinguished Lecture in Economics and Public Policy (18 February 2011).

¹⁰ Competition Commission, Bristol Water plc, A reference under section 12(3)(a) of the Water Industry Act 1991 (August 2010).

Increasing gearing and returns on the RCV

Professor Dieter Helm has argued that companies have geared up because of the low risk once capital expenditure has been added to the RCV, because investors have taken the view that: "there is little or no equity risk in the RAB [regulated asset base]. They assume that government and regulators are legally prevented from behaving opportunistically in respect of the RAB. Having taken this bet, investors now contemplate an extraordinary open goal. Regulators have not limited that guaranteed return to finance the functions at the cost of debt, but rather at the weighted average cost of capital (WACC)... investors can finance the RAB at the cost of debt, but are offered an average between the cost of debt and equity at a notional gearing level well below the RAB proportion in the total capital structure"¹¹.

We recognise that risks change once a capital project has been delivered. In one sense, the return on the capital expenditure becomes relatively secure, albeit subject to variation in the cost of capital. However, the risk now is in the successful delivery of required outputs using that asset, and the costs associated with this. The return on RCV is now partly a reflection of the company having to bear these risks. Unless the risk post-completion is less than in the delivery of the capital schemes, there is no case for saving that the secure return on RCV encourages gearing up. A company could contract out the operation of assets, but if it did it would have to pass on the return to reflect the associated risk. If total risk is not lower after completion of capital projects, the return passed on to reflect transfer of risk would eliminate the gain from gearing up the financing of the RCV.

The evidence post-privatisation is that water companies have had more risk of incurring additional expenditure in their operations than in capital delivery. For example, they have had to increase operating costs during drought periods or to respond to flooding. This was the case for Severn Trent Water when a treatment works in Gloucestershire was flooded and 350,000 customers were without a water supply for over a week – resulting in costs of around £30 million. Individual capital projects are risky, but risk spread over a diverse capital programme means that in the past utility companies have generally been able to deliver the programme within regulatory estimates (although this may change with increases in the uncertainties faced by the companies in the years ahead, and with increases in the scale and complexity of the capex programmes they face). We do not agree, therefore, that reduced risk following capital schemes being completed and added to the RCV is a significant driver of gearing up.

The reasons why gearing has continued to increase

The extent to which gearing has increased, and continued to increase even after regulators started clawing back tax advantages, implies that:

- past or current holders of equity are mispricing risk risks are difficult for investors to assess at high levels of gearing and investors may underestimate the extent to which higher gearing increases risk;
- the transaction costs of raising new equity and investor perceptions of rights issues discourage companies from raising equity, and the capacity to fund investment from retained earnings is limited (especially given that dividends are key to investors and investor perception), so capital expenditure has been financed from debt; and/or
- equity holders or bond holders of highly-geared companies believe that some risk has been transferred to customers

 in other words, there is a perception that the regulator would adjust price limits rather than allow a company to get into financial difficulties, at least in some circumstances. This is an instance of 'moral hazard', a situation where there is a tendency to take undue risks because the costs are not borne by the party taking the risk.

It is clearly the case that, relative to debt, raising new equity is more expensive, less flexible and involves a more complex process, particularly for listed companies. Equity investors require dividends and growth, and calls for new equity receive close scrutiny. In contrast, issuing new debt is a much more common process that is built around the process whereby credit risk is judged by the credit rating agencies.

The possibility that risk is transferred to customers is referred to by Europe Economics in its report for the Civil Aviation Authority (CAA): "NATS [the National Air Traffic Service] may have a sub-optimal incentive to over-gear on the basis of an expectation that its bonds will be "bailed out" in the event of financial distress. Effectively, by gearing up NATS would be benefiting from an increased likelihood of additional cash flows from bailout, as well as transferring risk to customers"¹².

Annex 2 provides more information about the transfer of risk in the NATS.

¹¹ Dieter Helm, *Tradeable RABs and the split cost of capital* (January 2008). 12 Europe Economics, *Regulating Finance for NATS CP3* (January 2010).

The Europe Economics report sets out the value to investors of the possibility of a bail out and demonstrates that this creates a significant incentive for higher gearing. We consider that investors in the water and energy sectors are likely to make similar assumptions. This reflects both the national importance of utility industries, and the potential impact of a company failure on the future costs of raising finance for future infrastructure projects. Equity investors in our survey believed that investors in a highly-geared company did not bear the full risk.

"I think you have too big a moral hazard at the moment that has developed which means that there is too much upside, particularly for private equity firms to come in and gear up smaller water companies and reap an enormous benefit from potential equity returns, particularly in a high RPI environment, and not enough downside for them if it goes wrong." Equity investor, Makinson Cowell survey

This possibility was noted in the DTI/HM Treasury report on the consequences of increased gearing: "...*if investors believe that in the event of financial distress the political risks of business failure would be unacceptable and that Government would bail out the company, the full social costs of the increased risks of financial distress may not be priced into the cost of debt*"¹³.

In such circumstances, regulators would clearly need to take the wider public interest into account. Even if business failure could be avoided, consumers could be affected by prospective financial distress as a result of underinvestment or deteriorating standards of service. Ofwat has a duty to ensure that the companies can finance their functions, and Ofgem is required to have regard to the need for companies to be able to finance their activities. They would not interpret this as requiring them to bail out a company with an inappropriate financial structure, but the overall public interest might lead them to do so.

The DTI/HM Treasury report also noted the importance of financial structure in utilities: *"It is legitimate for regulators and policy makers to take a closer interest in financial structures than would otherwise be the case. The network providers in these sectors often deliver essential services, many with public good characteristics, direct to UK consumers, both domestic and industrial".*

A survey of investors (80 financial organisations in the City of London) that Oxera carried out in 2002 on Ofwat's behalf confirmed that a majority of investors believe a company would be bailed out, and that a company failure would have knock-on effects for financing for the whole sector: "A majority of the respondents believe that any cost shocks that may affect a highly geared company would be accommodated by regulators through, for example, the shipwreck clause"¹⁴. This is illustrated in the table below, which is taken from the report.

Respondents' views on the relationship between gearing and regulation

	Yes	Νο	No opinion
Any cost shocks will be accommodated by regulatory intervention through, for example, the shipwreck clause	52%	39%	9%
In case of default, with bondholders suffering losses, this would increase the overall cost of debt across firms in water	87%	7%	6%
In case of default, the regulator would fully protect bond holders	9%	82%	9%

¹³ DTI /HM Treasury, The Drivers and Public Policy Consequences of Increased Gearing (October 2004).

¹⁴ Oxera report for Ofwat, The capital structure of water companies (October 2002).

4

The future outlook for financing

In this chapter we consider the scope for raising finance from taxation, customer bills and borrowing.

Given the size of the future investment programme, there is a risk that relying solely on continued borrowing will exhaust the sources of funds that utilities have relied on in the past, and at the very least will lead to increased borrowing costs.

The outlook for investment

Both the energy and water sectors have large future investment programmes. As Figure 13 shows, over the last 20 years the water industry has been investing at a much faster rate than before privatisation, in order to meet new environmental and drinking water standards.

Changing course (April 2010) set out the outlook for water industry capital expenditure. This is shown in Figure 14.

The report suggested that even higher expenditure than in the past 20 years is likely to be required in order to:

- · deliver further environmental improvements;
- · adapt to climate change;
- · increase network resilience; and
- · mitigate climate change by generating renewable energy.

The report put forward proposals to reduce the level of expenditure. Even if some of these are acted upon, however, investment is likely to have to continue at very high levels.

Similarly, in the energy sector a very large increase in expenditure is projected for the energy networks. This is because investment in the transmission and distribution networks will be required to respond to:

- changes in electricity generation to meet government targets;
- · changes in the sources of natural gas; and
- higher electricity consumption as the country seeks to decarbonise its energy use.

Across the energy sector as a whole, the projected investment programme is even larger than that for water. Ernst & Young's projections¹⁵ show £234 billion investment to 2025:

Projected energy investment to 2025	£bn
Generation	165
Transmission, storage and distribution	38
Smart metering	13
Other	18
Total	234

Figure 13: Water industry past capital expenditure







Source: Changing course, Severn Trent, April 2010

15 Ernst & Young, Securing the UK's energy future: meeting the financing challenge (February 2009).

Similarly, the 2011 Energy White Paper estimates that up to £110 billion investment in electricity generation, transmission and distribution is likely to be required by 2020 - around£75 billion in new electricity generation capacity, and around an additional £35 billion of investment for electricity transmission and distribution.

This is a substantial increase in the level of investment. Ernst & Young estimated that it would represent a doubling of the asset base of the energy supply industry by 2025, from \pounds 62 billion to \pounds 127 billion.

Changes in the approach to financeability – particularly to depreciation and capitalisation – that Ofgem is introducing through the new 'RIIO' framework¹⁶ could further add to the sector's funding requirements (although in the short term the effects of these changes will be mitigated by transitional arrangements).

This additional need for finance could take place at the same time as there are other upward pressures on investment, competing for capital market funds. McKinsey's report on future capital requirements suggested that: *"the world is now at the start of another potentially enormous wave of capital investment, this time driven primarily by emerging markets. We project that by 2020, global investment demand could reach levels not seen since the post-war rebuilding of Europe and Japan and the era of high growth in mature economies"*¹⁷.

Financing the investment programme

The potential sources of finance for this programme are:

- taxation,
- increases in customer bills,
- borrowing by companies, and
- companies raising finance from shareholders.

To the extent that the investment programme cannot, or should not, be funded from taxation or immediate increases in customer bills, it needs to be funded by either increased borrowing and/or shareholders.

In this chapter we consider the scope for raising finance from taxation, customer bills and borrowing. In Chapter 5, we consider the risks if the investment programme was financed solely by borrowing, and Chapter 6 reviews the scope for increasing equity financing.

Financing from taxation

Taxation is not a realistic source of the finance needed. One of the reasons for privatisation of the water industry was in order that the public sector did not have to finance the large investment programme which was going to be needed. The need now to reduce the public sector deficit means that significant public spending increases are not possible.

South West Water customers are to receive a £50 per year rebate, funded from taxation. This is in recognition of the impact on bills of the large capital programme in the South West region over the last 20 years. However, this only covers 3% of the national customer base. Such support from taxation could not be made available on a large scale.

The Water Industry (Financial Assistance) Act creates a general power to enable the Government to make a payment to water companies for the purpose of reducing charges payable by customers. However, the Secretary of State for Environment, Food and Rural Affairs said that the only circumstances under which the Government currently envisages using that general power is in support of South West Water customers, as the circumstances they face are exceptional.

Financing from higher bills

Customer bills will need to increase to finance the investment required. Over half of the £80 billion water industry investment since privatisation has been financed by shareholders and from increased borrowing. However, bills have also risen by 45% in real terms. In *Changing course* Severn Trent estimated that £69 billion of the water investment programme to 2030 would be financed from customer bills over the period, with bills rising by 27% in real terms. This left £27 billion to be financed from borrowing or by shareholders.

The increase in bills required to finance capital expenditure wholly on a pay as you go basis would be unaffordable. In any event, it is appropriate that long-term investments should be paid for on a long-term basis, rather than out of current income. Whilst increases in investment must ultimately be funded through higher network charges either now or in the future, the balance between increases in bills in the short term and in the longer term depends on a number of considerations, including intergenerational fairness and affordability.

¹⁶ RIIO (Revenue = Incentives + Innovation + Outputs) is Ofgem's new approach to price setting, with more emphasis on incentives, higher-level outputs, increased customer engagement, and a longer price review period.

¹⁷ McKinsey Global Institute, Farewell to Cheap Capital? The implications of long-term shifts in global investment and saving (December 2010).

This need for additional financing was recognised by investors in our investor survey:

"For electricity and gas, because you are effectively right at the bottom of this j-curve of investment and they are starting from relatively highly levered positions as well, the situation is much more difficult. Clearly, lots more equity and lots more debt is going to be required for the electricity and gas sectors." Equity investor, Makinson Cowell survey

The remainder of this chapter considers the ability of financial markets to finance the investment programme (to the extent it is not appropriate to fund it through immediate increases in charges).

Financing from borrowing

The size of the investment programme means that the proportion of utility debt in the lending markets would need to grow. This raises the issue of whether fund managers will accept a higher proportion of utility debt in their portfolios. In addition, increasing demand from the UK and other governments for long-term finance, due to the size of government deficits, could mean that lending to the utility sector gets crowded out. The bond market is a major source of utility finance and we analyse below trends in bond finance and the future outlook.

Sources of finance – the bond market

The bond market enables companies and governments to issue debt and is a major source of long-term funds. It has grown significantly over time, as shown in Figure 15. This reflects rising government borrowing ('gilts') and increasing reliance of companies on debt finance.

Up to the mid-1990s there were few bond issues other than by the Government, which accounted for more than 90% of the market. From the mid-1990s, the size of the non-gilt market grew steadily. Utility bond finance has increased from £17 billion in 2000 to £76 billion in 2010 (around 4% of the market), broadly in line with the growth in other corporate bond finance. Much of the growth in utility borrowing has been financed from the bond market.

Figure 15: The UK bond market



Factors influencing bond finance over the next few years are likely to include the following:

- The large UK government deficit will only decrease slowly

 government debt is likely to increase as a percentage of GDP until at least 2014-15.
- Tighter capital requirements on banks (included in the Basel II international agreement), to reduce the risk of them getting into financial difficulties, may reduce their use of the bond market.
- 'Solvency II' capital requirements may reduce the appetite of insurance companies for long-dated bonds issued by utilities.
- Non-financial companies may be seeking to reduce their gearing in order to reduce risk in a tougher economic climate.
- Utilities can be expected to increase borrowing because of their large capital programmes.

We have made some projections of the future bond market, based on the following:

- Office for Budget Responsibility forecasts of future government debt, which show debt growing as a proportion of GDP to 2014-15, and then slowly falling.
- An assumed reduction in real terms in financial sector bonds, due to tighter capital requirements.
- Growth in utility sector bonds, reflecting the size of the capital programme.
- No growth in real terms in other corporate bonds, reflecting an aim to reduce gearing – followed by growth in line with GDP thereafter.

This produces the forecast set out in Figures 16 to 18. Overall the bond market is projected to grow by 69% over 15 years (22% in real terms), with gilts and utility bonds taking an increasing share of the market. The rate of increase in gilts slows from 2014-15 with the reduction in the government deficit. The utilities' share would rise from 3.7% in 2010 to 8.4% in 2025 (and up from 25% to 44% of the non-financial corporate bond market).

Figure 16: Bond market forecast







Figure 18: 2025 shares of bond market



A number of issues arise from these trends:

- Will interest rates need to rise in real terms to attract the additional finance, in view of:
 - government debt at levels not seen since the 1960s (nearly 80% of GDP);
 - the overall growth in the bond market in real terms;
 - competition for finance from growing investment in developing countries?
- Will the bond market be willing to finance the growth in the utility share, given that some bond investors have caps on the proportion of their portfolio which they will invest in utilities? There are relatively few investors in the sterling bond market and if they reach their own capacity limits they will be unwilling to take on any more utility debt.
- In view of the projected increase in borrowing, which will increase gearing, will utilities be able to maintain the credit rating necessary to issue bonds on reasonable terms?

Credit ratings

The interest rate at which companies and governments can raise finance in the bond market is heavily influenced by the rating assigned to borrowers by credit rating agencies (the three principal ratings agencies are Moody's, Standard & Poor's and Fitch). These ratings reflect the ratings agency assessment of how likely it is that a company will default, so investors do not get their money back, or not in full. The table below shows how the risk of default increases as the ratings agency assessment deteriorates.

Average	default	rates	1920-2010 ¹⁸
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	Rating agenc	% default rate within	
	S&P/Fitch's	Moody's	5 years
Investment	AAA	Aaa	0.16%
grade	AA	Aa	0.75%
	A	A	1.24%
	BBB	Ваа	3.06%
Speculative	BB	Ва	9.66%
grade	В	В	22.01%
	CCC/CC/C	Саа	41.28%
Average			7.22%

Since the risk of default increases as the rating declines, it is important that utilities maintain a strong credit rating in order to be able to borrow at reasonable cost and to have access to a wide range of sources of finance. Figure 19 shows how the cost of borrowing rises as the credit rating declines. The gap in borrowing costs between strong and weak credit rating has widened since the financial crisis, with an increased perception and pricing of risk.

Figure 19: Change in borrowing cost with credit rating



Over time, the rating of many utilities has declined as borrowing has increased and returns have fallen. Severn Trent's Standard & Poor's credit rating was A+ in 2000 but had been reduced to BBB+ by 2010. Other companies have also experienced downgradings. For example in January 2010 United Utilities' Standard & Poor's credit rating was lowered from A- to BBB+.

The rate at which highly-geared companies can borrow is highly dependent on the approach of the ratings agencies. Currently ratings agencies consider that the covenants in highly-geared, securitised structures allow them to rate companies higher than their gearing would suggest. Any change in approach by the rating agencies would have an impact on cost and availability of debt.

18 Moody's Investment Service, Corporate Default and Recovery Rates, 1920-2010.

Sources of funds for the lending markets

As shown in Figure 20, pension funds have increased their holdings of bonds over the past 20 years, and reduced their equity holdings, in response to new pension fund investment and accounting regulations, the increasing maturity of many schemes, and a reappraisal of the merits and characteristics of different types of investment.

Following increases in bond holdings in recent years, the capacity of pension funds to increase holdings of corporate bonds further may be limited. It is unlikely that pension funds can make a similar addition to their bond holdings in the next 20 years as has been seen in the last 20 years.

Solvency II (a review of the capital adequacy regime for the European insurance industry) could affect the ability of investors to lend long-term to the utility sector. These changes, including new capital retention requirements, could lead to an increase in short-term lending. This will increase the refinancing risk for utility sector companies, leading to the risk of credit downgrades and higher costs of borrowing.

Finance could be sought from overseas. Markets such as the Eurobond market and the US Private Placement Market are available. However, accessing these markets implies a need for currency risk management, which requires currency swap lines of credit from banks to be available. With the banks' capacity to offer such credit being restricted, this may not be a practical option.

Figure 20: Pension fund asset allocation



Conclusions on the outlook for borrowing

We have shown that in the years ahead there is an unprecedented requirement for finance for the utility industries. There is a high risk that relying solely on increasing borrowing will exhaust the sources of funds that utilities have relied on in the past.

Investors in the bond market will have a limited capacity to take on utility debt. At the very least this will lead to increased borrowing costs, and there is a risk that funds will not be available.

The Ernst & Young report on the energy sector estimated that only about 48% of the £234 billion investment programme can be financed from borrowing, leaving 52% to be financed from equity.

Before considering the prospects for equity finance in Chapter 6, we first assess in Chapter 5 the risks and disadvantages of the level of gearing which would result if the investment programme were to be financed predominantly by raising debt finance.

5

The implications of higher gearing

In this chapter we consider the risks if the future investment programme were to be financed solely by borrowing.

High gearing increases the risk of financial distress, which would have an adverse impact on customers and on the future cost of financing, not only for the directly affected company but also, potentially, for other companies across the energy network and water sectors.

High gearing is also less appropriate for changes in the regulatory framework that regulators are currently seeking to make. These changes are designed to encourage innovation and competition, and involve increased incentives and greater risk.

We believe that changes to the regulatory framework could encourage a more sustainable approach to financing, increased equity participation and more diverse ownership.

The potential increase in gearing

In the previous chapter, we considered the capacity of financial markets to finance the investment programme. In this chapter we consider the implications if the investment programme were to be financed solely from borrowing. Given the scale of the programme, gearing would rise significantly, without any further gearing up for financial reasons.

Figure 21 shows the projected increase in gearing in the water industry, from Severn Trent Water's forecasts in *Changing course*.

The projections are on the basis of finance continuing to be raised through increasing borrowing. By 2030, average gearing could be more than 80%, with borrowing up from £33 billion in 2010 to £60 billion in 2030. This will amount to about £2,500 debt per customer.



Figure 21: Projected water industry debt and gearing

Source: Changing course, Severn Trent, April 2010

Some investors in our survey commented on the scale of future capital expenditure and the limitations on increases in gearing.

"Debt has a part to play, but the sheer quantum is going to be difficult, plus the speed at which the capex is required to go in to certain projects may make it difficult, even in the short term." Equity investor, Makinson Cowell survey In this chapter we consider the disadvantages of raising the additional finance required from debt, even if this were to be feasible. We have shown in Chapter 4 the limitations on increasing debt finance. In Chapter 6 we consider the scope for increasing equity finance.

High gearing increases the risk of financial distress

Higher gearing reduces a company's resilience to shocks, increases in costs, changes in interest rates, and underperformance. It therefore increases the risk of financial distress. This is because when financial problems arise companies must continue to meet their interest payments, whereas they have the option of reducing or suspending dividend payments to shareholders.

Ofwat noted in its discussion paper on financeability and financing that: "...highly geared structures are potentially less flexible and more vulnerable to cost shocks than traditionally-structured companies"¹⁹.

In an attempt to mitigate these risks the more highly geared companies may be less innovative and overly cautious. Over time these behaviours would be to the detriment of consumers.

As noted in Chapter 3 there is a potential transfer of risk to consumers if a company gets into financial difficulties, because of the pressure to relax the regulatory contract. The regulated company does not pay for this implicit guarantee from customers/taxpayers.

It is sometimes argued that utilities are low risk, and that higher gearing means customers benefit from a lower cost of capital. Higher gearing does not, however, reduce the cost of capital without risk transfer. There are significant risks – in financing, operations and in the capital programme. As Ofwat notes in its discussion paper: *"…these structures remain to be tested over the longer term"*.

We have carried out financial modelling for the water industry which shows that, given the variability in costs observed since privatisation, there is a significant risk of a highly-geared company getting into financial difficulties (see Annex 3).

19 Ofwat, Financeability and financing the asset base - a discussion paper (April 2009).

The Consumer Council for Water, in its response to an Ofwat paper on financeability, has expressed concerns about high gearing:

"The current high level of gearing in the industry may be unsustainable... We have concerns with the risk of customers effectively paying for a second revenue uplift for a company that has previously restructured to increase gearing, only to need a further restructuring should this higher gearing be unsustainable in the future"²⁰.

An example of the potential risks that regulated companies face is the substantial expenditure, not allowed for at the previous price review, that water companies had to incur after the 1995 drought and to meet their leakage targets. If a company suffers (or even simply anticipates) financial distress then – at the very least – standards of service and investment are likely to suffer. There would be implications for financing costs for the water and energy sectors as a whole and for other utility financing if one company gets into difficulties.

A particular concern is that utilities in a sector are exposed to common risks, such as increases in energy prices and interest rates; this raises the potential for systemic problems if all were to be highly geared.

This is confirmed by the investor survey in the Oxera report for Ofwat, which noted: "A great majority of the respondents believe that the default of one water company could lead to an industry-wide increase in the cost of debt"²¹.

A number of equity investors in our recent survey voiced concerns about the risk of high gearing:

"Generally the unlisted regulated utilities are very highly levered, so they tend not to have any flexibility at all. God help them if something goes wrong!" Equity investor, Makinson Cowell survey

"What you have seen in the smaller private water names, is taking gearing to a ridiculous level. I think regulators need to be pretty careful about that. We have heard of businesses being literally 95% debt financed and you just sail far too close to the wind in terms of financing these businesses then." Equity investor, Makinson Cowell survey

The consequences of financial distress are sufficiently high that even a low risk of company failure should be avoided. This is noted by Adair Turner in relation to banking: *"In assessing the benefits of higher equity ratios, meanwhile,*

three insights are essential. The first is the importance of considering the impact of low probability but extreme events: ...the adverse costs of even very rare banking crises are so great as to outweigh any marginal growth penalty resulting from higher equity ratios"²².

While the costs to society of a utility company failure may not be as great as a bank failure, the cost would be sufficiently high to merit a similar argument being applied to utility financing.

Regulators can impose a special administration regime if a company fails. This provides for Ofwat or Ofgem to apply to the High Court, where a company is unable to pay its debts, for the company to be managed by a person appointed by the High Court, pending the transfer of the business to another company or companies. However, this would be more appropriate where problems arise through bad management or poor performance than as a result of systemic factors. In any case, special administration arrangements are untried and may not avoid adverse consequences for customers, both before the regime is imposed and indirectly through any knock-on effects on utility financing generally.

Regulators also make requirements in terms of credit rating. However, as the Policy Exchange notes: *"the rating agencies' track record in providing "early warning" radar is at best mixed*"²³.

Ring-fence conditions have been included in the licences of the network companies in both the energy network and water sectors. These are intended to prevent financial difficulties in affiliated companies or at group level from affecting the stability and operation of the licensee. However, these conditions cannot protect the licensee from issues that arise within the ambit of the ring-fence. Ring-fencing conditions²⁴ and covenants may deter or constrain increases in gearing and reduce the risk of financial difficulties developing as a result. However, they will not work in all circumstances, particularly where new circumstances develop and spread quickly (as was observed at Lehman Brothers during the financial crisis in 2008).

Owners of more highly-geared companies may make additional equity available if necessary, but they may not have the finance available or may not see the injection of additional funds as an attractive investment. These risks are likely to be greater where ownership is in the hands of a small number of shareholders who may have limited capital, particularly if they have already recouped their investment.

²⁰ Consumer Council for Water, Response to Financeability and financing the asset base: an Ofwat discussion paper (June 2011).

²¹ Oxera report for Ofwat, The capital structure of water companies (October 2002).

²² Adair Turner, Reforming finance: are we being radical enough? Clare Distinguished Lecture in Economics and Public Policy (18 February 2011).

²³ Dieter Helm, James Wardlaw and Ben Caldecott, Delivering a 21st century Infrastructure for Britain, Policy Exchange (2009).

²⁴ For example, the licence requirement to maintain an investment grade credit rating, and restrictions on intra-group indebtedness, guarantees and cross-default obligations.

Structural issues

High gearing may be inappropriate for a more competitive water sector. Increasing competition for non-household customers is supported in the Government's Water White Paper²⁵ and in Ofwat's proposals for its future approach to setting prices.

First, it will tend to reduce companies' willingness and ability to take the risks that are not only associated with changing industry structures but are also inherent in competition. This was noted by the OFT in its report on infrastructure ownership: *"If all firms in a market have high levels of leverage, this might soften the degree of competition between them. The rationale is that firms might be less able to sustain strong price competition because of constrained balance sheets"²⁶.*

In addition, high gearing may be more likely to reduce the flexibility to introduce changes to industry structure and the regulatory system. This is because debt covenants may act as a barrier to structural separation and greater competition within the sector.

HSBC Global Research commented: "We believe the listed water companies have a greater flexibility to embrace change given their relatively low gearing. Many of the non-listed companies however have undertaken whole business securitisations and are thinly capitalised with owners unwilling or unable to provide more capital for development or change. Will they be put under pressure by these proposals?"²⁷.

Long-term financing issues

With a continuing large capital programme, financing from borrowing could become increasingly costly. Relying on borrowing risks exhausting the sources of funds on which utilities have mainly relied, or at the very least is likely to lead to rising borrowing costs. Highly-geared companies may not continue to be able to borrow at low rates for the following reasons:

- Increased economic uncertainty increases the risks of higher gearing. A protracted period of slow growth could lead to negative inflation, which increases gearing (as the RCV falls) and would make raising debt finance more difficult.
- The BASEL III Accord, which strengthens bank capital requirements and introduces new regulatory requirements on bank liquidity and bank leverage, makes it harder to obtain the standby facilities necessary for going concern purposes, especially for lower-rated companies.

High gearing also makes it more costly and difficult to raise equity, not least because of 'debt overhang'. This is where existing cash flow is insufficient to finance payments to debt-holders (which may cause new investors to be concerned that cash flow from new investment will be diverted to finance existing debt).

In addition, access to the range of finance markets may be more limited for some companies than others. The convertible debt market, for example, is mainly available to publicly quoted companies. This issue may become particularly significant at times of financial crisis.

A diverse share ownership would make a company less vulnerable to the decisions of a few individuals. Listed companies are also subject to more extensive information disclosure requirements and external scrutiny. This may reduce the likelihood of financial distress and could provide an early warning of potential problems (although similar considerations apply to all companies that issue listed debt in their own name).

Conclusions on high gearing

In Chapter 4 we showed that relying on borrowing will create the risk that funds will not be available, or will lead to increasing borrowing costs.

In this chapter we have shown that, if utilities do succeed in continuing to finance the investment programme from borrowing, the levels of gearing that will result from this will create significant risks. In addition, a lower level of gearing is more appropriate for the changes being made in the regulatory frameworks to encourage innovation and competition, which involve increased incentives and greater risk.

We consider that encouraging equity to stay in the sector and incentivising additional equity financing exposes customers to less risk and is likely to be cheaper in the long run, once this reduced risk is taken into account. We believe that changes to the regulatory framework could encourage a more sustainable approach to financing, increased equity participation and more diverse ownership.

²⁵ Defra, Water for Life (2011).

²⁶ OFT, Infrastructure Ownership and Control Stock-take (December 2010).

²⁷ HSBC Global Research, UK Water: The real defensive utilities (January 2012).



Encouraging equity finance

In this chapter we review the scope for increasing equity financing.

We believe that there is scope for attracting additional equity finance to the utilities sector. However, getting the right balance between risk and return, and building greater confidence in long-term returns, are key to attracting equity. We do not consider that the recent regulatory reviews have taken any specific action or sought to encourage equity finance.

Increasing equity financing

Chapters 4 and 5 set out the potential limitations on further debt finance and the disadvantages of high gearing. If these considerations relating to the future funding of the utility sector are to be addressed then equity must play its part. This means that the sectors must be capable of both retaining existing equity and, when appropriate, attracting new equity finance.

The utilities sector has diminished slightly as a proportion of the equities market (down from 5.2% of the FTSE All-share index in 2008 to 3.9% in 2011) and there is likely to be the capacity to increase this proportion.

Although the cost of equity is higher than the cost of debt, increasing equity financing does not necessarily increase the overall cost of capital. As constraints on debt finance become tighter, the cost of debt can be expected to increase. In addition, the cost of equity can generally be expected to be higher in a more highly-geared company because of the greater risk.

Considerations of equity investors

Equity is risk capital provided by investors to companies. It seeks returns in the form of growth in the underlying investment and income from that investment in the form of dividends. It ranks last in any liquidation and is therefore ultimately at risk of complete elimination. Returns to equity must therefore recognise this risk and equity must be rewarded adequately to attract the funds to the investment. The higher the risk the higher the expected return. Increasingly, equity funds flow around the world seeking out the best balance between risk and return.

The survey carried out for us by Makinson Cowell identified key considerations of equity investors. The key messages raised by investors were as follows:

- The main risk of investing in the utility sector is uncertainty over regulatory change and the risks of executing large-scale capex programmes.
- There need to be positive incentives for operational outperformance – which will benefit customers in the long term.
- Regular cash returns through dividends are a key component of the returns sought by many equity investors.
- The extent of future capital spending requirements suggests further equity financing will be needed.

Figure 22: Impact on share prices of Ofwat's 1999 price determination



 Greater levels of investment are expected in the future, but there were concerns that future returns may be lower, meaning higher risk for equity investors through increased dividend volatility and a greater probability of cash calls.

Confidence in the long-term stability of the regulatory regime, in terms of providing adequate returns to efficient companies, is very important to equity investors. This is illustrated in Figure 22, which shows the impact of Ofwat's 1999 price determination on share prices in the water sector. This was not a reaction to a change in the assumption about the cost of capital, which was little changed. It reflected a concern that the price review was directed at achieving a particular outcome and that future returns would be squeezed to keep bills down.

Following the price review there was a rapid reduction in equity participation in the industry, with gearing rising from 43% in 1999-00 to 57% in 2002-03. Although share prices recovered subsequently, the impact of this price review shows the potential impact of changes in confidence in the regulatory regime, and suggests that increasing the confidence in long-term returns could be one way of encouraging equity financing. A reliable dividend stream is important for investors. This is an important consideration for regulators in assessing the extent to which retained earnings can be looked on to fund future investment.

Dividends are described as 'critical' or 'vital' and for many interviewees in our survey are the main reason why they invest in utilities. These companies are regarded as long-term portfolio shareholdings that should be generating cash to pay dividends. The dividend is seen as a key element of the total shareholder return.

There was recognition among a minority of investors, however, that where there was a large capital programme it could be sensible to restrict dividends to finance the programme in part. Income fund managers would be less satisfied with such an approach.

"People look for utilities as dividend payers and that is one key yardstick which the market uses to value the sector. If you are paying a sub-standard dividend then it may be that your cost of capital is higher and therefore it may be that you are delivering poorer value at the end of the day to the customer."

Equity investor, Makinson Cowell survey

"I look at total returns so I am not so much concerned about dividend. Having said that, a dividend does give a lot of clarity in terms of the business plan of the company. Shareholders or investors will reward companies who have a clearly defined dividend policy." Equity investor, Makinson Cowell survey

The impacts of recent regulatory developments

The water and energy regulators are undertaking, or have completed, wide-ranging reviews of the regulatory framework for their sectors.

Ofgem's review, which concluded in October 2010, led to the RPI-X framework being replaced with the new RIIO framework. In spite of the review's wide-ranging nature, there was little explicit recognition that higher levels of gearing are a concern or that equity financing needs to be encouraged. As a result, the new framework is unlikely to change the overall approach to utility financing fundamentally. The proposed approach may, however, enable greater account to be taken of the interaction between uncertainties, risk, incentives and financing. This could lead to a more sustainable approach to financing.

"The problem is that the sector as a whole has only just been given enough returns by the regulator, so it is quite hard for them to do anything other than try and manage the balance sheet a little bit more aggressively than they should. The solution is not to tighten returns further; it is to change the balance of returns away from financial and more towards operational." Equity investor, Makinson Cowell survey

Ofgem's review did not acknowledge the decision-making processes of equity investors or the nature of the real, long-term risks that equity investors in utilities face. The focus in relation to financeability was on limiting short-term increases in charges.

Changes made in Ofgem's regulatory framework to the approach to depreciation and capitalisation are likely to delay returns to equity investors and significantly increase the need for new finance in the short or medium term. This re-phasing of returns - particularly in the absence of any strengthening of the regulatory commitment (which could not in practice be achieved) - is unlikely to make the sector more attractive to equity, so gearing may increase even faster. A proposal to index the allowed cost of debt may reduce the risk in highly-geared companies, in that if interest rates increase then there will be some increase in prices to customers. However, whether risk is reduced will depend on how closely the structure of companies' debt compares with the forms of debt used by regulators for indexation purposes, and on the profile and level of future capital expenditure.

While Ofgem has indicated that it sees both equity and debt as important for the future financing of the energy networks, financing is seen as the network owner's responsibility. Ofgem relies on the assumption that setting an appropriate cost of capital is sufficient to ensure that the sector will be able to attract equity when needed. It has not identified a need to incentivise equity nor has it explored how this might be achieved. In estimating the possible range of return on equity in its latest price review for electricity distribution companies Ofgem showed the effect of increasing gearing to 80%, suggesting that it did not see this as unreasonable or undesirable.

Following the banking crisis Ofgem has given greater consideration to the risk of network failures and the protective measures that are in place. The approach is one of 'defence in depth' in both water and electricity, including special administration provisions. Ofgem has also consulted on tightening up ring-fence provisions. However, the focus is on early warning rather than preventing difficulties and failures or incentivising more resilient capital structures. Similarly, the role of price controls in reducing the risk of failures, and the likely benefits of incentivising and rewarding more equity, have not been fully examined.

Although Ofwat's review is still ongoing there is no evidence that it is considering a significant change in its approach to price setting. And while its paper on financeability²⁸ recognises that equity finance has a role in funding the future programme, it does not put forward significant changes to encourage equity financing. Similarly, in its Future Price Limits consultation, it states that *"We consider that both debt and equity have a role to play in financing future investment programmes"*²⁹ but does not consider it necessary to take any steps to encourage equity finance. In addition, the proposals for incentives are oriented towards penalties for failure, and encourage a risk-averse approach. This does not appear to recognise that giving the potential for outperformance is likely to be a significant factor in encouraging equity financing. For the energy networks, the changes Ofgem is introducing under the RIIO framework – including longer price controls, greater use of incentives, and a stronger focus on accountability for delivering outputs – will influence the risk profile of the companies and so may affect future decisions on optimum gearing and financeability. (It should be noted though that the overall impact of the new approach will only become clear once new price controls under the RIIO framework have been introduced.)

These regulatory changes are designed to increase innovation, which is widely regarded as being necessary to meet the challenges the utilities face, as well as being a driver for improved performance and customer service. Yet higher gearing has a potential adverse impact on innovation because it encourages companies to be risk averse (taking risks could jeopardise the ability to meet interest payments).

Conclusions on encouraging equity finance

We consider that there is scope for attracting additional equity finance to the utilities sector when needed.

Key issues in attracting equity are:

- getting the right balance between risk and return;
- · building greater confidence in long-term returns; and
- providing incentives for outperformance.

We do not consider that the recent regulatory reviews have taken any specific action to encourage equity finance. Without action, it is likely that the investment programme will continue to be financed by borrowing, with the associated risks that this brings.

Chapter 7 evaluates potential options for regulatory change to encourage equity financing.

28 Ofwat, *Financeability and financing the asset base – a discussion paper* (March 2011).

29 Ofwat, Future price limits – a consultation on the framework Appendix 3: Remunerating and addressing risk (November 2011).

7

Options for policy change

In this chapter we consider a range of options to encourage a sustainable approach to financing, which would reduce exposure to financial risk.

We consider that a package of regulatory measures could encourage equity finance, including:

- increased exposure of companies to incentives, particularly for less highly geared companies, to encourage improved performance and innovation;
- the right balance between risk, incentives and reward;
- increased confidence in future cash flows.

Characteristics of potential options

The range of potential options can be characterised as being either:

- based on incentives or directive (that is, by imposing financing requirements);
- radical or evolutionary (that is, in terms of the level of change to the established regulatory framework); and
- direct or indirect (that is, acting directly on financial structures or changing the general nature of the framework).

The options we have identified and which are considered in the following sections are summarised below.

		Indirect measures	Direct measures
Incentives	Evolutionary	(1) Risk/return balance(2) Commitment to future cash flows	(4) Tax claw back
	Radical	(3) Different incentive regimes with different levels of gearing	 (5) Differential returns for equity finance (6) Differential cost of capital for new investment (7) Separate financing for large projects (8) Split cost of capital
Directive	Evolutionary		(9) Financing restrictions
	Radical		(10) Gearing or capital requirements

Criteria for assessing options

We have developed a set of criteria, shown in the table below, for evaluating the options for encouraging sustainable financing. Each of the options we set out above has been evaluated against these criteria.

Criterion	Objectives
Sustainable financial	Encouraging financial structures which:
structure	 ensure finance for future investment will be available,
	 reduce the risk of financial distress that might adversely affect consumers.
Investor confidence	Keeping down the cost of finance by maintaining investor confidence, through:
	a stable regulatory framework,
	 protecting expectations of existing investors,
	confidence in future cash flows for efficient companies.
Customer bills	Avoid a significant short-term step up in bills.
	Have an acceptable impact on bills over time.
Practicality and	Clear rules.
simplicity	Easily implemented.
	 Avoid adding to regulatory burden on regulator or companies.
Regulatory incentives	Encourage adequate and efficient investment.
	Encourage efficient financing.

We first consider changes to the regulatory framework that could indirectly give incentives for equity finance.

Indirect measures – incentives

(1) Risk/return balance

The regulatory framework could be made more appropriate for equity financing, giving companies increased incentives in return for bearing greater risk, for example through:

- a longer price control period;
- more/stronger financial incentives, with good performers earning higher returns and poor performers lower returns;
- · fewer 'reopeners' for cost changes between price reviews.

We consider such changes to be desirable, in terms of their likely impact on industry performance. In practice, these and other elements of a price control need to be considered together, to reach a balanced settlement which:

- enables companies to attract finance (and maintain financeability);
- provides incentives to deliver the required outputs, levels of customer service and strong operational performance, and reflect the requirements of stakeholders.

The proposed RIIO framework, whilst as yet unproven, provides companies with the opportunity to take a holistic view of financeability, risk, uncertainties and incentives and to propose an overall package of financial and other measures which achieves such a balance.

(2) Commitment to future cash flows

The sector regulators need to recognise that raising equity (and cutting dividends) is less attractive and (in the short term) more costly than raising debt. Thus, regulators need to make the regulatory framework more attractive for equity.

This is not just about providing appropriate returns and the cost of capital. It is equally important that the regulatory framework addresses and mitigates longer-term regulatory and political risks. These risks are not generally acknowledged by the regulators but are the principal risks faced by equity investors. As shown in Chapter 6, loss of confidence after the 1999 price review in the stability of the regulatory and political approach in the water sector had a major impact on share prices and encouraged a reduction in equity financing. There needs to be increased regulatory commitment to the value of future cash flows. However, it is difficult to conceive of direct measures that could increase or guarantee future regulatory commitment as regulators are unable to bind the decisions of their successors (or governments). This makes it essential to maintain a consistent regulatory approach. Effective stakeholder engagement, leading to cost-effective investments which are valued by consumers, will add to the legitimacy of investments and so reduce future risk.

A consistent regulatory approach to returns needs to be supplemented by a realistic approach to cash-flow phasing and to the need for companies to be able to meet dividend requirements and expectations. Were these requirements to be acknowledged and provided for, the corollary would be that there should be a corresponding acknowledgement that regulators would allow companies to fail (where they are materially underperforming for a sustained period).

The potential impact that the regulatory approach can have on investor confidence was assessed by Indepen when it carried out a survey for Water UK³⁰ after Ofwat's 2009 Draft Determinations. At that time investors felt that risk had moved to equity (as shown in the table below) and that there was a risk of further equity withdrawal. Of equity investors, 50% felt that companies would not be able to earn a return equal to or greater than the cost of capital.

Investors may have had a more favourable view after the Final Determinations. However, the survey findings do raise some concern about a lack of confidence of equity investors.

Has the allocation of risk between investors and customers changed since the last periodic review?			
Risk moved to equity 63%			
No change 5%			
No view given 32%			

30 Report by Indepen for Water UK, Investor Survey: Ofwat's PR09 Draft Determinations (24 September 2009).

Our investor survey, carried out in 2011, noted the importance of confidence in the regulatory framework and some uncertainty about the future regulatory approach.

"... regulatory risk is always there, it is heightened at the moment through RIIO and at the back of my mind I have got question marks over where Ofwat is going." Equity investor, Makinson Cowell survey

"It is well structured and it is the most professional and established regulatory framework that we have in Europe. If we look at the situation right now as opposed to the broad view, there is some degree of uncertainty with the changes that are being considered. You don't want such uncertainty to last too long." Equity investor, Makinson Cowell survey

"People will fund investment in new asset base growth if the regulatory settlement is right and supports it." Equity investor, Makinson Cowell survey

"If equity is being used to finance assets which will earn a decent regulatory return, and we feel happy with the regulatory framework, we don't have that much objection." Equity investor, Makinson Cowell survey

(3) Different incentive regimes with different levels of gearing

A more radical alternative to increasing the incentive regime for all companies would be to vary the incentives according to each company's assumed level of gearing. Less highly geared companies are better able to bear risk without excessive risk of inadequate cash flows, and so a stronger incentive regime could be implemented in companies with lower gearing.

Ofgem's new RIIO framework enables changes of this type, and places the onus on companies to propose and justify the financial package and range of incentive and uncertainty measures. With the right balance between rewards and penalties this could create an incentive for lower gearing. This could be implemented either through an approach whereby companies specified or selected the incentive regime which they felt appropriate or through the regime varying automatically with the level of gearing. These indirect measures form a set of related incremental changes which are best considered together. Our overall assessment of the combination of options (1) to (3) is set out in the table below.

Criterion	Со	mments
Sustainable financial structure	?	Changing the incentive balance could encourage equity financing but whether it would have a significant impact is uncertain.
Investor confidence	~	The changes are insufficiently radical to have a significant impact on investor confidence.
Customer bills	~	Changing the incentive package would be unlikely to have a significant impact on bills.
Practicality and simplicity	~	The changes could be readily developed from the existing framework.
Regulatory incentives	~	The changes could help to deliver better outcomes.

Direct measures – incentives (4) Tax claw back

Regulators currently claw back the tax advantages gained from higher gearing (though in some cases only once a margin above the assumed gearing has been exceeded). This may be because they consider there to be no net social benefit from companies gearing up to reduce their tax bill, as although companies and customers may benefit, taxpayers will lose such that there is no overall gain.

The Competition Commission appeared to reject claw back of the tax benefits of higher gearing in its report on price limits for Bristol Water, where it noted that cost of capital, financeability and tax should all be assessed using a consistent gearing assumption. However, we consider that, in order to encourage equity financing, regulators should continue to claw back the tax advantage of debt. There is no net social benefit from companies gearing up to reduce their tax bill. Companies and their customers benefit but taxpayers lose, with no overall gain. It is therefore appropriate for regulators to continue to claw back the tax advantages of debt where gearing is significantly above regulatory assumptions.

Criterion	Comments	
Sustainable financial structure	~	Ending tax clawback would encourage higher gearing, so continuing it encourages sustainable financing.
Investor confidence	~	There would not be an adverse impact as investors will already have allowed for this issue.
Customer bills	~	Ending tax clawback would increase bills.
Practicality and simplicity	~	This option has already been implemented. There are some issues of definition.
Regulatory incentives	~	Continuing to claw back tax gains would encourage reasonable overall outcomes.

(5) Differential returns for equity finance

In setting the cost of capital regulators could recognise an individual utility's risk profile. In this assessment lower gearing should attract a higher cost of capital because it is less risky for customers. In its report for the CAA, Europe Economics recommended financial disincentives to gearing up, over and above claw back of the tax benefits. The Consumer Council for Water has suggested that: *"We would like to see Ofwat consider setting different WACCs for individual companies to more closely reflect their different capital structures"*³¹.

A possible approach would be to assume a constant cost of equity with rising gearing, rather than applying the normal capital asset pricing model (CAPM) assumption that the cost of equity rises with gearing. Ex post adjustments would be made where gearing differed significantly from the assumed level, for example on the following basis:

- Assumed return would be based on gearing at the time of the price review.
- There could be some floor on the gearing assumption for assumed return (for example, the return would not continue to increase if gearing was less than, say, 50%).
- There would be an ex post adjustment for actual gearing (possibly with no adjustment if gearing remained within a reasonable range, say 50% to 70%).

The justification for such an approach would be that, unlike for a conventional company in other sectors, equity holders are transferring some of the risk associated with higher gearing to customers, rather than facing all of the increased risk. For Ofwat's 2009 price review, the effect of this would have been that a company with 80% gearing would have had a cost of capital (gross of tax shield – 'vanilla') of 4.3%. This compares with 5.1% for a company with gearing at the notional level of 57.5% gearing that Ofwat used to calculate the cost of capital.

If the cost of capital were to vary with gearing there could be transitional arrangements for one price review period. This would avoid any excessive adverse impacts on companies that are already highly geared.

An alternative transitional approach might be to provide allowances for the cost of raising new equity where this is needed to bring actual gearing into line with the notional level of gearing.

We recognise that this would represent a significant change in the overall approach to UK regulation which has served the energy and water industries (and their consumers) well since privatisation, in which:

- companies can choose their own finance structures (subject to constraints imposed by, for example, financial market discipline and the ring-fence conditions in their licence), and then bear the risks associated with these decisions, as well as deriving any benefits from these decisions; and
- price controls are set on a 'notional' basis, where cost of capital, financeability and tax are assessed using a consistent, assumed level of gearing rather than a company's actual capital structure.

Such a significant change could also affect confidence in the stability of the regulatory regime which, as discussed earlier, is very important for the stability and sustainability of network financing.

It is also unclear how this would fit with RIIO, which already envisages that the financial package and risk profile of the companies are considered together. It would not be justified to make further changes to the price control process before RIIO has been tried and tested. However, it could be considered in the future if other measures do not have the effect of encouraging equity.

31 Consumer Council for Water, Financeability and financing the asset base: an Ofwat discussion paper (June 2011).

Our overall assessment of this option is shown below.

Criterion	Com	iments
Sustainable financial structure	~	If the difference in returns was significant then differential returns could be expected to change companies' approaches to financing.
Investor confidence	×	Such a radical change could weaken confidence in the regulatory regime.
Customer bills	?	The impact would depend on the returns relative to the current cost of capital. Costs to customers would increase if investor confidence was undermined.
Practicality and simplicity	~	The changes could be readily developed from the existing framework, although the ex post adjustments would add to complexity.
Regulatory incentives	?	There would be no adverse impact on incentives, though a risk of unintended effects.

(6) A differential cost of capital for new investment

A differential cost of capital could be set for new investment, taking into account costs of equity issuance and the different risk profile according to the size and nature of the capital programme. This possibility was raised by some equity investors in our survey:

"There is a difference between the built out networks, the ones where the capex has been done, and the ones that have to be built out. Perhaps the regulator needs to give a little more return to the very high capex requirements because construction is a risky business." Equity investor, Makinson Cowell survey

The RIIO framework may include variations in the cost of capital: "The size of the notional equity wedge will reflect the company's risk exposure and may vary within and between sectors, but only where there is material difference in the risk faced" ³².

"There is scope for companies within the same sector to have different levels of notional gearing where there is a significant difference in the risks facing them, for example, as a result of the size of their investment programme relative to their existing RAV"³³. This approach may be part of the solution, and under RIIO energy companies will consider their risk exposure – alongside uncertainty and incentives mechanisms, financing costs and financeability considerations – in justifying their proposed financing package as part of their business plans.

It is not certain, however, that equity financing would be increased unless the higher return were to be associated with requirements on equity financing, although companies facing increased risks and incentives would be expected to take this into account in choosing their capital structures.

Criterion	Co	mments
Sustainable financial structure	?	It is not certain that a differential rate of return would attract equity finance.
Investor confidence	~	As it does not adversely affect returns on existing investment, investor confidence should not be affected.
Customer bills	?	The impact would depend on the returns relative to the current cost of capital. Being applied only to new investment, it would not lead to any significant initial impact.
Practicality and simplicity	~	In principle the changes could be readily developed from the existing framework.
Regulatory incentives	?	It is possible that incentives between maintenance and new investment would be distorted.

³² Ofgem, *RIIO: A new way to regulate energy networks, Final decision* (October 2010). 33 Ofgem, *Handbook for implementing the RIIO model* (October 2010).

(7) Separate financing for large projects

A variation on the approach in option (6) would be to make provision for separate financing of one-off projects where a single project would represent a large proportion of a company's RCV. This could include projects such as the Thames Tideway sewer project, large reservoirs, or creating new water mains links for water trading.

Exceptional projects such as these could be subject to a different regulatory framework and set of risks and incentives, and could have their own value and return attributed to them, separate from the RCV for the rest of the business. This approach would reflect that:

- · large projects may require a higher return to reflect their risk;
- equity investors may be willing to invest in specific projects with a separate return, where they are less willing to invest in the business in general.

A longer commitment could be given to these separate returns than to returns for the rest of the business. After a period of, say, 20 years, the remaining value in the project could be added into the main business RCV.

Criterion	Comments	
Sustainable financial structure	?	Equity might be attracted by these one-off projects but it is not clear if the remainder of the business would be affected.
Investor confidence	?	There is a risk that a change in the framework could reduce confidence in the consistency of the regulatory regime.
Customer bills	?	The impact would depend on the returns relative to the current cost of capital. Being applied only to new investment in large projects, it would not lead to any significant initial impact.
Practicality and simplicity	?	There could be boundary issues and establishing separate financing arrangements could add to regulatory complexity.
Regulatory incentives	~	There should not be any distortion of incentives.

(8) Split cost of capital

Professor Dieter Helm has argued³⁴ that regulated income streams combine two different types of cash flow – the return on the RCV, where risk is low, and payment for operating expenditure (opex) and capital expenditure (capex), where risks are considerably higher.

In Professor Helm's view, the RCV has a low cost of capital and opex and capex have a high cost of capital, and these different costs of capital should be reflected in price setting through a split rate of return. Professor Helm also argues that it is appropriate to finance the RCV mainly or wholly through debt while targeting equity capital at continuing expenditure.

We have reservations about the split cost of capital in the form advocated by Professor Helm. As noted in Chapter 3, there are significant risks associated with delivering required outputs, and operating and maintaining assets, after completion of capital schemes. We recognise that some of the risks associated with capital expenditure are reduced once it is added to the RCV (although other risks remain, for example because of uncertainty about future cost of capital assumed, and regulatory commitment to the RCV, as well as exposure to delivery of outputs). Overall, we do not believe that total risk is necessarily lower. Therefore we do not consider that a change in risk once an asset is added to the RCV has been a driver of higher gearing.

Financing of the RCV solely from borrowing would increase total utility gearing, which we have argued is undesirable in terms of the risks created. There would be equity investment in capital programme delivery and in operations, but the total amount of capital would be small, except for major projects with a long period of construction. Without the cushion of the return earned on the RCV, and with a small capital base, operation of the business would be highly risky. These risks would have to be transferred to customers. Without the incentive to manage the risks, operations could be expected to become less efficient.

34 In, for example, Utility regulation, the RAB and the cost of capital, Dieter Helm, University of Oxford (May 2009).

Our view on this is similar to the position taken by the Competition Commission in the 2008 Stansted price control review:

"The convention of using the RAB as an input into the calculation of price caps gives investors the opportunity to recoup their investments, but deliberately puts that return at risk (ie it is conditional upon the efficient and competent operation of the assets that are built). As such, it is entirely conceivable (and, indeed, desirable) that the actual return on the RAB will turn out to be higher or lower than the expected return seen in the WACC x RAB calculation".³⁵

Separating out the risks and revenues would lead to boundary definition issues and risk losing the economies of scope that have been identified from an integrated business³⁶. It is likely that the strength of incentives in relation to different types of spend (for example, maintenance and life extension of existing assets versus asset replacement) will be different, such that the most efficient overall solutions for the management and development of the network may not be properly incentivised.

We also consider that giving only a debt return on the existing asset base would increase regulatory uncertainty. This is because it would completely change the basis on which returns are set, undermining investor confidence. It is difficult to see how such a fundamental change to the regulatory framework could be introduced in a way that would be perceived as equitable by all affected parties. As a result it is likely to cause disruption and uncertainty, and delay future investment. This would be most undesirable at a time when the demands on the networks are growing and changing, and network investment is projected to increase significantly. In our view, therefore, a split cost of capital would not deliver an improved way of financing network investment. It would increase the risk of companies getting into financial difficulties and would not deliver more equity financing. A summary of our assessment is shown in the table below.

Summary assessment for split cost of capital

Criterion	Comments	
Sustainable financial structure	×	The proposal would be likely to increase gearing and increase risks on availability of finance and likelihood of financial difficulties.
Investor confidence	×	The proposal would change the basis on which returns are set, undermining investor confidence.
Customer bills	?	The initial impact on customer bills would be favourable. The long-term impact might be expected to be adverse because of the impact on investor confidence.
Practicality and simplicity	×	There would be boundary issues and transitional issues in implementation.
Regulatory incentives	?	There would be a risk of loss of economies of scope and potential distortion of incentives between different types of expenditure.

35 Competition Commission, Stansted price control review: Final report, Appendix L, Cost of capital (2008).

36 In, for example, Saal, D.S., Arocena, P., and Maziotis, A., The cost implications of alternative vertical configurations of the English and Welsh water and sewerage industry (May 2011).

Directive measures

(9) Financing restrictions

It would be possible to impose financing restrictions that would force lower gearing. As noted in Chapter 5, regulators already have in place financing requirements which are intended to ensure that companies have sufficient financial resources available.

Evolutionary measures would include, for example:

- a tightening of credit rating requirements, or setting financial ratio requirements; and
- further regulatory ring-fencing provisions (for example, by including additional cash lock-up clauses).

(10) Gearing or capital requirements

More radical measures would include:

- a cap on gearing; and
- requirements on cash reserves.

Caps on gearing have been applied in the United States and by the CAA to NATS: *"the CAA believes it is appropriate to implement a two tier proposal that includes a gearing target* (60 per cent) and gearing cap (65 per cent). This would operate together with a clawback which would remove the tax benefit from gearing above 60 per cent." ³⁷

We believe, however, that an approach using incentives would be more effective and more consistent with the regulatory framework than imposing financing restrictions.

It would also avoid an excessive adverse effect on companies that already have high gearing. Ofwat notes that: "We have identified some concerns that arise [from imposing financial ratio requirements] because of a potential conflict with an incentive-based regulatory framework. These are that the regulator may not be better placed than the markets to make judgements about the constraints on capital structure, and the practical difficulties with determining the most appropriate financial ratios and threshold levels. On balance, this suggests that it may not be appropriate to introduce explicit financial ratio thresholds in company licences" ³⁸. On balance, therefore, we do not consider that restrictions on financial structures should be imposed. A summary of our assessment of options 9 and 10 is shown in the table below.

Financing restrictions/capital requirements

Criterion	Comments	
Sustainable financial structure	~	Imposing restrictions would force adoption of a sustainable structure.
Investor confidence	×	Forcing unwinding of financial structures to which regulators had not previously objected would undermine confidence in the regulatory regime.
Customer bills	×	Forcing rapid change – combined with the resulting loss of investor confidence – would increase the cost of capital, and therefore bills.
Practicality and simplicity	×	There would be difficulties in defining where to set limits, and in determining transitional arrangements.
Regulatory incentives	×	Restrictions might inhibit efficient financing.

CAA consultation, NATS (EN Route) plc price control review for control period 3 (May 2010).
 Ofwat, Financeability and financing the asset base – a discussion paper (April 2011).

Evaluation of options

The table below summarises the evaluation of the options against the criteria.

Those options likely to have the greatest impact on financing structure (differential returns for equity finance, split cost of capital, or imposing requirements on financial structure) also have the biggest potential drawbacks. Therefore we do not advocate these options, at least at this stage. Instead, we suggest that by combining a number of other, incremental measures, the incentives for equity financing could be improved.

			Criteria		
Option	Sustainable financial structure	Investor confidence	Customer bills	Practicality and simplicity	Regulatory incentives
(1) to (3) incentives	?	v	v	v	v
(4) Tax claw back	~	v	v	~	v
(5) Differential returns for equity finance	v	×	?	V	?
(6) Differential cost of capital for new investment	?	v	?	V	?
(7) Separate financing for large projects	?	?	?	?	V
(8) Split cost of capital	×	×	?	×	?
(9) Financing restrictions	~	×	×	×	×
(10) Gearing or capital requirements	v	×	×	×	×

Summary of evaluation

The analysis above indicates that the available options can be classified as follows:

Should be implemented	(1) to (3) incentives (4) Tax clawback
Would need further consideration before implementation	 (5) Differential returns for equity finance (6) Differential cost of capital for new investment (7) Separate financing for large projects
Should not be implemented	(8) Split cost of capital(9) Financing restrictions(10) Gearing or capitalrequirements

Conclusions on options

This chapter has considered a range of options that could encourage a more sustainable approach to future financing.

Directive measures, which dictate change, could be made, but these are not consistent with the overall incentive-based framework of UK regulation. They also carry the risk of bringing other unintended, and unwanted, effects.

Radical options, which involve fundamental change to the regulatory framework, could have a significant impact on future financing structures. They also, though, have the largest potential drawbacks, including a high risk of undermining the investor confidence which is critical to sustainable financing of the sectors.

However, we consider that a combination of indirect, evolutionary changes to the existing framework could together encourage equity finance and a more sustainable approach to financing. Such a combination could include:

- increased exposure of companies to incentives, particularly for less highly geared companies, to encourage improved performance and innovation;
- ensuring the right balance between risks, incentives and reward; and
- measures to give increased confidence in future cash flows and returns.



Conclusions

This chapter summarises why a more sustainable approach to financing should be encouraged, and how changes in the regulatory framework might achieve this. Faced with large and increasing investment programmes, and against the backdrop of the global financial and economic crises of recent years, a robust and sustainable approach to utility financing is needed. Excessive reliance on borrowing increases the risk of future financing difficulties.

Changes could be made to the regulatory regime to encourage equity and a more sustainable approach to financing, and this report identifies a number of options to stimulate debate. However, radical change is not currently needed, and any changes would need to be thought through carefully before being implemented.

The overall objective is that the companies should face strong positive incentives to perform well, face exposure to an acceptable level of financial (and other) risks, and be able to finance their business (that is, raise funds when needed and reward existing investors appropriately).

The financial crisis has created an economic background in which:

- · risk is more acutely understood and managed;
- financial markets are more uncertain, and funds are becoming more difficult to obtain;
- pension funds may no longer be an increasing source of bond finance;
- new regulations on capital requirements, such as Solvency II, risk making credit structurally tighter to obtain; and
- lower rates of corporate taxes reduce the net cost differential between debt and equity funding.

The utility sector and its associated economic regulators are running the risk of basing the future funding of the sector on yesterday's paradigm, whereas there is now generally much greater awareness of the risks of excessive borrowing. Governments, banks, industry and consumers are all aiming to reduce their debt.

The regulatory framework should encourage companies to adopt a sustainable approach to financing which meets future challenges for the following reasons:

- Investment is going to increase to meet challenges such as changing energy needs and the effects of climate change.
- The global economic context has changed. We cannot assume that what has worked before will work again.
- The economics of financing infrastructure investment are changing funding of investment solely through borrowing cannot be relied upon in the future.
- If customers are to be protected from the full short-term impact of funding long-term investments that are necessary, sufficient equity needs to be attracted and retained in the sector.
- This requires a greater commitment to long-term returns, and the right balance between risk and return.

In Chapter 7 we put forward a number of proposals that would help to deliver more sustainable financing in future. These have been identified to stimulate further debate among stakeholders in the water and energy sectors: we are not seeking to provide a definitive solution but to draw attention to the issues and some options for action.

These individual changes would not, in isolation, address all of the objectives of sustainable financing. A combination of changes is needed, including both direct and indirect measures, such as:

- Increased exposure of companies to incentives, which will also drive improved performance and innovation.
- Broader regulatory changes to encourage more equity by:
 mitigating long-term regulatory/political risk and giving greater confidence in future cash flows;
- taking a realistic approach to financeability and cash-flow requirements.

The exposure to risks and incentives needs to be calibrated against the assumed gearing and capital structure as part of an overall price control, such that an efficient company with the assumed notional structure:

- faces strong incentives to perform well, implying a stronger incentive regime for less highly geared companies with a lower assumed (or notional) gearing, to reflect their greater ability to bear risk;
- is exposed to an acceptable level of financial and other risks; and
- is able to finance its business, ie raise funds when needed, and reward existing investors appropriately.

The approach proposed for the energy sector in Ofgem's RIIO framework could assist in delivering these changes, although this is as yet untested and unproven. The framework involves companies (rather than the regulator) making an initial proposal for the overall financial package. This, together with the proposed risk and uncertainty mechanisms, can be designed to enable them to attract finance and maintain financeability whilst also incentivising innovation, output delivery and strong operational performance.

It also follows that where different companies face different circumstances and demands, a different financial package and set of risk and uncertainty measures can be expected to be proposed, even in a single industry sector.

The set of changes we have identified could together form a solution that would address the concerns identified earlier in an effective way and without adverse consequences.

- They would encourage lower gearing to reduce company exposure to risk of financial failure, or at the least would discourage the highest levels of gearing currently seen.
- They would be NPV-neutral for consumers (once risk transfer is taken into account) with no material increase in short-term charges.
- They would maintain and strengthen incentives on companies to perform and innovate.
- By encouraging more equity and a more robust capital structure, they would encourage adequate investment (and ensure that there are no financing constraints to this).
- They would address the legitimate expectations of current equity investors/owners.

Further steps might be needed at a later stage, depending on wider developments and the success of initial measures. The key to progress is recognition where action is needed, and for any changes that are made to be effectively targeted, well-justified and proportionate.

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A1 Annex 1: The views of investors

Makinson Cowell survey of equity investors

In order to establish equity investors' views on future financing, Severn Trent Water and National Grid commissioned Makinson Cowell, a leading capital markets advisory firm, to carry out a survey of institutional equity investors. Their report is summarised below, including quotes from participating investors.

The sample

Makinson Cowell interviewed 26 leading institutional investors (face-to-face and telephone interviews) in May and June 2011. The survey considered investors in the publicly-quoted utility companies – National Grid, Centrica, Northumbrian Water (now privately owned), Pennon, Severn Trent Water and United Utilities. Institutional investors held 65% of the shares in these companies.

Three-quarters of the UK holding is in the hands of the top 25 UK institutions.

The interviews included investors from the UK, the rest of Europe, North America and the rest of the world. The sample had some £2.3 trillion equity assets under management and controls around a quarter of the FTSE Gas, Water & Multi-Utilities sector. It included 21 of the top 50 investors in the sector.

The key messages raised by investors were:

- The UK regulatory framework is well respected and highly attractive relative to other countries.
- The main risk of investing in the utilities sector is uncertainty over regulatory change and the risks of executing large-scale capex programmes, particularly in the electricity sector.
- Greater levels of investment are expected in the future, but there were concerns that future returns may be lower, meaning higher risk for equity investors through increased dividend volatility and a greater probability of cash calls.
- The scope for future outperformance needs to rebalance from financial to operational performance.
- Risks of high gearing were recognised, with questions raised about the long-term views of certain categories of equity investors (private equity and infrastructure funds).
- Dividends are vital as the key element of total shareholder returns and a discipline on management.

Split of institutional holdings



Views on the regulatory frameworks

Investors generally saw the regulatory frameworks as being well developed and stable, and that shareholders had achieved fair returns. There were, however, some concerns about the future, because of the changes being implemented by Ofgem in its new RIIO framework and Ofwat's proposals for the introduction of competition and its review of its approach to price-setting. Investors saw customers as the beneficiaries at the expense of a higher cost of capital and more risk for equity investors who face the possibility of increasing dividend volatility and a greater probability of cash calls.

"...regulatory risk is always there, it is heightened at the moment through RIIO and at the back of my mind I have got question marks over where Ofwat is going."

"It is well structured and it is the most professional and established regulatory framework that we have in Europe. If we look at the situation right now as opposed to the broad view, there is some degree of uncertainty with the changes that are being considered. You don't want such uncertainty to last too long."

"It has generally been constructive over the last five to ten years but faces more uncertainty now over the next stage of regulatory construct."

"I do worry a bit about the uncertainty that Ofgem is introducing and whether that is actually going to lead to downside for everyone. The single most important thing for customer bills going forward is that the cost of capital remains low. The single biggest input for that is what the regulators have under their control ie regulatory risk and making sure that the premium for regulatory risk is as low as possible. Ofgem, if it is not careful, can do something to significantly damage that."

"We are all on tenterhooks about RIIO. On the water front, there are potential question marks over whether we move towards a more competitive environment." Some investors saw the framework as requiring rebalancing to increase the scope for operational outperformance, which would reduce the emphasis on financial outperformance through gearing up. There was a concern that removing financial outperformance incentives could increase the cost of capital.

"The negative is that it is quite hard to outperform operationally, so in a way the balance is tilted a little bit towards financial engineering rather than operational engineering. Over the long term, the balance rationally should shift back to beating regulatory assumptions through operational outperformance."

"The problem is that the sector as a whole has only just been given enough returns by the regulator, so it is quite hard for them to do anything other than try and manage the balance sheet a little bit more aggressively than they should. The solution is not to tighten returns further; it is to change the balance of returns away from financial and more towards operational."

"The electricity regulator seems to be moving the business towards greater focus on operational performance. I am not sure if the water regulator has moved in that direction as much as perhaps they should."

"If you do take it too far and you stop incentivising debt outperformance, you create a higher cost of capital. We see that in some areas of the US where they really have no incentive whatsoever to strike a good deal in the bond market – it is a simple pass through."

"Given the scale of the capex they want these companies to commit to over the next decade, it has got to be a) joined up so the different objectives actually fit together, and b) more investor friendly than they appear to be, and by quite a long way more investor friendly I would say. They are quite a long way offside at the moment."

Risks of high gearing

There was general support for sovereign wealth funds as an alternative source of financing. However, there was considerably more apprehension about infrastructure funds, with many questioning the private equity business model and the riskiness of high gearing. The electricity sector was thought to be already highly geared with little balance sheet capacity to take on more debt and negative organic cash flow. The financial position of the unlisted water sector was also seen to be in "very poor shape", reflecting high gearing in privately owned companies. Many thought gearing around the levels assumed by the regulator was appropriate, although some thought higher levels could be acceptable.

"The introduction of the private equity investor into the sector on a large scale has forced regulators to re-look at their calculations and their method for clawing back what one could see as leveraged, frankly unsustainable, capital structures. That is only going to continue."

"Generally the unlisted regulated utilities are very highly levered, so they tend not to have any flexibility at all. God help them if something goes wrong!"

"What you have seen in the smaller private water names, is taking gearing to a ridiculous level. I think regulators need to be pretty careful about that. We have heard of businesses being literally 95% debt financed and you just sail far too close to the wind in terms of financing these businesses then."

"I think you have too big a moral hazard at the moment that has developed which means that there is too much upside, particularly for private equity firms to come in and gear up smaller water companies and reap an enormous benefit from potential equity returns, particularly in a high RPI environment, and not enough downside for them if it goes wrong."

"Somewhere where the regulators have ended up would be towards the maximum end of comfort level on a longer basis, so 55-60%. If any company increased gearing from that level, you are dramatically starting to shrink equity and that is an issue because at some point it raises the risk of a crunch."

Future financing

Investors identified three main concerns about future long-term funding:

- The level of future returns which they see as lower, trending down or being 'back-end loaded' and a lack of visibility for those returns.
- The scale of capital expenditure, the impact on customer bills and, in the light of cash flow shortfalls, what this means for equity investors.
- Amongst international investors, a concern about government interference with the regulatory process to ensure that customer bills are kept politically acceptable.

Investors recognised that the scale of investment required will exceed the capacity of debt holders, so they will have a financing role. Continued equity participation was considered important in providing flexibility and balanced financing, and quoted equity is seen as keeping management accountable.

"Debt has a part to play, but the sheer quantum is going to be difficult, plus the speed at which the capex is required to go in to certain projects may make it difficult, even in the short term."

"There are capital expenditure requirements in some industries, like electricity transmission because of government agendas in terms of low carbon generation, that mean that you have got companies with optimised balance sheets, high dividend yield and high payout ratios that need to invest. It feels like something has to give."

"For electricity and gas, because you are effectively right at the bottom of this j-curve of investment and they are starting from relatively highly levered positions as well, the situation is much more difficult. Clearly, lots more equity and lots more debt is going to be required for the electricity and gas sectors."

"You can't run these things without equity, but whether you can do it without quoted equity is an interesting question. The main thing that quoted equity does is that it gives a good signal to the regulators as to how sensible or otherwise they are being with their allowed levels of returns, which actually supports all the non-quoted entities very well."

Providing equity finance

Interviewees put forward the following criteria in order for them to provide equity capital:

- · attractive and visible returns;
- finance being required for investment in assets or specific projects to drive growth;
- · a stable regulatory framework; and
- a management team that investors trust.

"There is a difference between the built out networks, the ones where the capex has been done, and the ones that have to be built out. Perhaps the regulator needs to give a little more return to the very high capex requirements because construction is a risky business."

"It will be interesting to see how the equity market steps up to the sheer size of the investment that has to be done over the next 20 years because what I would observe is that over the last couple of years is that the rights issues by the utilities have not been particularly well received. Part of that is due to investors' perceptions that for that new incremental investment the returns are not quite as attractive as they need to be."

"People will fund investment in new asset base growth if the regulatory settlement is right and supports it."

"If you are talking about whether I support companies coming to the market for equity then my view on that is that it is fine provided that the companies can convince the equity markets that what they are going to spend the money on is going to generate attractive and reasonable returns, which they should be able to do."

"If equity is being used to finance assets which will earn a decent regulatory return, and we feel happy with the regulatory framework, we don't have that much objection."

Investing in the utilities sector

The attraction of investing in the sector is the defensive characteristics of the industry, its predictable returns and stable cash flows which underpin the payment of dividends. Investors also like the stable regulatory regimes in the UK, inflation-linked returns and capex-led growth opportunities.

The main risk of investing in the utilities sector is seen as uncertainty over regulatory change. The risks of executing large-scale capex programmes, particularly in the electricity sector, fears that returns to equity investors allowed by the regulator would be inadequate, and high levels of gearing are other concerns.

"At the back of your mind as an equity investor there is always a suspicion that the regulator, once the network is built out and once the return is largely paying off the financing rather than financing the capex, will then reduce returns. Anything that makes the returns a bit more back end loaded will be reviewed by the market with a little bit of suspicion and probably would require a slightly higher rate of return on the investment."

"Those higher spending requirements will raise their cost of capital rather than lower it so, if anything, this level of growth should lead to higher returns, not lower. I just worry that regulators or politicians will be politically motivated to determine prices that they want it to be rather than looking at the facts of the cost of financing."

"Given the kind of capex we are talking about, it cannot be funded only by debt, so the equity component has to come in. The regulators need to realise that the cost of raising new equity is not the same as the cost of equity which they typically assume."

"We need some reassurance that Ofgem, Ofwat and the politicians are willing to keep this framework stable and are not going to change it. You are starting to hear about this. We had it in Germany and Spain is now experiencing it. Is the UK next?"

"The massive amount of infrastructure needs in the UK in both gas, power and water, is not going to be sourced solely from UK investors. They need to be mindful of the other opportunities we as global investors have to invest in. They threatened to alienate non-UK equity investors with their initial proposals of RIIO. We have to see what will happen in the end."

The importance of dividends

Dividends are described as being 'critical' or 'vital' and for many interviewees are the main reason why they invest in utilities. These companies are regarded as long-term portfolio shareholdings that should be generating cash to pay dividends. The dividend is seen as a key element of the total shareholder return. Dividends are also seen as a discipline on management and as a signal of future intentions.

There was recognition among a minority of investors, however, that where there was a large capital programme it could be sensible to restrict dividends to finance the programme. Income fund managers would be less satisfied with such an approach.

"They [dividends] are critical. These are long-term investments and these businesses need to be able to demonstrate that they can generate cash flow and pay the providers of capital on a long-term sustainable basis."

"People look for utilities as dividend payers and that is one key yardstick which the market uses to value the sector. If you are paying a sub-standard dividend then it may be that your cost of capital is higher and therefore it may be that you are delivering poorer value at the end of the day to the customer."

"I look at total returns so I am not so much concerned about dividend. Having said that, a dividend does give a lot of clarity in terms of the business plan of the company. Shareholders or investors will reward companies who have a clearly defined dividend policy." **Changing course through sustainable financing** Options to encourage equity financing in the water and energy sectors



Annex 2: Case study – The transfer of risk in the National Air Traffic Service

The CAA commissioned Europe Economics to explore the extent to which the regulatory regime for the NATS created an incentive for the company to adopt a risky capital structure³⁹.

The CAA's concern was that NATS bondholders would not consider any regulatory statement that it would not bail out NATS as credible. There were several reasons why lenders would consider it likely that, in the event of financial distress, NATS could expect a relaxation of price limits or a direct government aid. Some were particular to NATS:

- NATS is an essential service which the UK is obliged to provide under its international legal obligations.
- A composite solution was implemented when NATS was last in financial difficulties, indicating that Government and CAA were unwilling to allow the company to go into administration.
- The Transport Act 2000 contains explicit provisions for government financial support of NATS in the event that it experiences financial distress.

The privatised energy and water companies do not have such explicit or implicit guarantees of government support. Ofwat and Ofgem would also state, publicly, that they would not provide relief to a company that had got into financial distress by adopting a risky capital structure. This does not mean that financial markets are not acting on such an assumption. There is recent history of government bail outs for firms considered too large or too important to fail in many sectors. Car makers in the US and banks around the world, for example, were rescued despite there being no legislation suggesting that they should have such an expectation.

Europe Economics identified three incentives for NATS to increase its gearing. One was the conventional tax saving arising from debt finance, which was noted earlier in this report. However, two further incentives were related to risk transfer:

- a reduction in the overall cost of capital at higher gearing; and
- the expectation of increased future cash flows from the bail out.

If a company is valued on the present value of its expected future cash flows, discounted at the cost of capital, these two factors both drive increased value when it gears up: expected cash flows are higher and the discount rate is reduced. If a bail out is expected, and risk is therefore transferred to the customer (or the government), excessive gearing becomes a rational decision for the investor.

Reduction in the cost of capital

According to the Modigliani-Miller theorem, capital structure should be irrelevant to the cost of capital. Although the cost of debt is lower than the cost of equity, both become more risky as companies gear up. Thus the WACC remains the same.

If, for whatever reason, the cost of debt did not increase in line with expectations, substituting cheap debt for equity would reduce the cost of capital. Europe Economics suggested that this was indeed the case with NATS, because bondholders' expectation of a bail out reduced the risk of default that would normally accompany rising debt.

As evidence, Europe Economics pointed to Standard & Poor's statement that NATS was given a one-notch upgrade to reflect *"the potential for extraordinary government support"*⁴⁰.

Europe Economics estimates that a one-notch uplift for NATS implies that rating agencies are implicitly assuming a probability of around 34% that bondholders will be bailed out in the event of financial distress⁴¹.

In corporate finance theory, only systematic risks should affect the cost of capital. However, the way in which regulators have typically set the WACC means that specific risks may, in reality, be factored into regulatory assessments of the cost of capital through assumptions made on the cost of debt.

Europe Economics argues that the cost of debt used by regulators typically includes a default risk premium which covers both specific and systematic risks. As the chance of default is higher for more highly geared structures, the implication is that the upward bias in the regulatory settlement – the *promised return* – will also be greater.

39 Report for the CAA by Europe Economics, Regulating Finance for NATS CP3 (January 2010).

41 This was calculated using data on marginal default probabilities for bonds rated A2 and A3 derived from Moody's idealised default probability table. The reduction in the probability of default implied by a one-notch upgrade (from A3 to NATS' current rating of A2) can be used to infer the implicit probability of bailout that is being assumed.

⁴⁰ Standard and Poor's, Global Airports Face Challenges Not Seen in Decades (May 2009), p.8.

As the promised return increases, the margin between the promised return and investors' expected return also increases. This is because the debt beta at each gearing level reduces in line with the uplift to NATS' credit rating (and hence the reduction in its debt premium) and the changed probability of default on its bonds. The equity beta remains unchanged because shareholders would not be spared in the event of a bail out.

In line with the Modigliani-Miller theorem, the vanilla WACC is constant for all gearing levels with no bail out and when the cost of debt is calculated on the basis of expected returns. *Promised returns* – ie the regulatory allowance, including the default premium – are higher as gearing increases. As shown by the yellow line, the margin between the *promised* and *expected* returns increases as gearing goes up.

Europe Economics' calculation shows a relatively small impact on the cost of capital. For example, increasing gearing from 55% to 80% reduces the vanilla WACC (based on expected returns) by only 0.02%. The expectation of increased cash flows is materially greater.

Increase in projected cash flows from the possibility of a bail out

As noted above, the company's value is increased because of the possibility that it will be provided with additional cash in the event of financial distress, and this becomes more likely with higher gearing.

Europe Economics modelled the potential impact for NATS, assuming:

- a constant marginal probability of the firm defaulting each year;
- a 34% probability of bail out, as implied by the one-notch mark-up to NATS' credit rating, discussed above;
- if there is no bail out, the loss given default (LGD) suffered by bondholders is 58% (in line with typical figures for A or BBB-rated bonds);
- if there is a bailout, shareholders lose all of their capital but bondholders are completely protected – the cost of the bail out is therefore the LGD that would otherwise occur, multiplied by the company's net debt.





The table below shows Europe Economics' results for the future cash flows expected from a bailout of NATS.

Expected cash flows from bailout⁴²

Gearing %	NPV of future cash flows (£m)
55	2
64	3
72	5
80	8
88	15

Source: Europe Economics calculations

42 The choice of gearing levels was determined by certain aspects of the data.

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A3 Annex 3: Scenario modelling

A significant consideration in whether or not action is needed to encourage equity financing is the extent of risk involved in higher gearing. We therefore carried out financial modelling to assess the risks. This indicates that there is a significant risk that a highly-geared company could fail to generate sufficient cash to meet its obligations on interest payments.

We modelled the water sector using a base scenario for capital and operating expenditure that was used in the modelling for the *Changing course* report. A scenario has been considered for 2015 onwards under circumstances of high interest rates, a need for additional capital expenditure, and rising energy prices.

The modelling assumptions are as follows:

- Additional capital expenditure has been based on previous experience of overspends needed to meet regulatory requirements. For example:
 - Between 1995 and 2000 water and sewerage companies overspent by 14% on water capital expenditure following the 1995 drought, in order to improve their ability to meet demand.
 - Between 2000 and 2005 Thames Water overspent by 46% on water capital expenditure, following its failure to meet leakage targets.
- An operating cost overspend has been modelled of 1% in 2015 rising to 5% overspend by 2020 (not enough to trigger an interim determination through the 'shipwreck clause'). This is similar to the increase in energy costs between 2005 and 2010.
- Revenue loss from non-household customers, for example due to the economic climate, but at a level that is not sufficient to trigger the shipwreck clause – modelled
 0.4% revenue loss rising to 2% by 2020 (less than losses experienced by Northumbrian and Bournemouth during 2000-05).
- Rising interest rates an increase of up to 2% in real terms (not assumed to affect all borrowing as some debt is fixed rate).

Probabilities have been attributed to all of these events, with independent normal distributions assumed. For example, for capital expenditure we assumed a 10% chance of a 10% overspend. The figures below show that the probability distributions match closely the actual experience from 2005 to 2010 (each of the red squares on the graph represents one of the ten water and sewerage companies).



Figure 24: Probability of capex overspend

Figure 25: Probability of opex overspend



The modelling is based on a company with 80% gearing in 2015. When a company gets into financial difficulties it is assumed to cut the dividend initially, then suspend the dividend.

Our financial modelling, using these probability distributions, indicates that there is a significant risk that a highly-geared company could fail to generate sufficient cash to meet its obligations on interest payments.

Severn Trent Water Ltd

Severn Trent Centre 2 St. John's Street Coventry CV1 2LZ www.stwater.co.uk



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