Financeability: A Report on Ofgem's RPI – X @ 20 Project Team's Emerging Thinking

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Foreword

This paper is a response to the discussion of financeability in Ofgem's RPI – X @ 20 emerging thinking. It focuses, in particular, on two statements in this document:

- that a regulated network's financial ratios may fall short of the thresholds set by rating agencies for a comfortable investment-grade credit rating if it 'faces a mismatch in its cashflows, which means that its available revenues fall short of the necessary financing costs at a particular point in time, though not on average over time'; and
- that 'this should not raise financeability issues' and so 'no adjustment to revenues' is necessary in such circumstances.

The report is structured into five main parts:

- section 1 explains what the 'mismatch' that Ofgem refers to is;
- section 2 develops in greater detail what it means for Ofgem to make no adjustment to revenues when this mismatch causes a company financing difficulties;
- section 3 examines the pros and cons of this stance;
- section 4 evaluates the alternative responses that are available to Ofgem; and
- section 5 concludes with a summary of the report's key points.

1. Why Companies Might Not Be Financeable: A Reminder

1.1 Principles

In order to analyse sensibly the position that the RPI – X @ 20 project team is taking it is necessary first of all to define the concept of financeability and to explain why it is that an efficient company might not have sufficient income to pass a conventional test of its financial ratios.

The clearest and most useful definition of financeability is the one that Ofwat put forward in its 2004 review of water and sewerage charges:[1]

> Efficient companies must be able to finance their functions. A company which is efficiently managed and financed should be able to earn a return at least equal to the cost of capital and its revenues, profits and cashflows should allow it to raise finance on reasonable terms in the capital markets. We refer to this second element as financeability.

To a newcomer to regulation it may at first seem slightly strange to see this sort of two-pronged approach to a regulator's financing duty. By definition, the opportunity to earn a return that at least matches the cost of capital means that both shareholders and lenders can expect to make profits that at least match the best opportunities that are available to them in other sectors. In many people's eyes, this should mean that regulated companies automatically command the confidence of financial markets and have access to both equity and debt finance for so long as they are delivering to regulatory assumptions. (Indeed, until as recently as ten years ago, 'financeability' was seen exactly in these terms.)

Unfortunately, this is an over-simplification of the position that Ofgem's, and indeed most regulators', approach to setting price controls leaves companies in. It neglects to highlight that the return that is factored into price controls is calculated by regulators in a very particular and perhaps slightly curious way. Specifically, the return that regulators allow in calculating allowed revenue is only the real portion of the cost of capital and deliberately excludes compensation for the effects of inflation. This compensation is not lost to investors, but gets factored into an addition to the RAV rather than revenue in year.

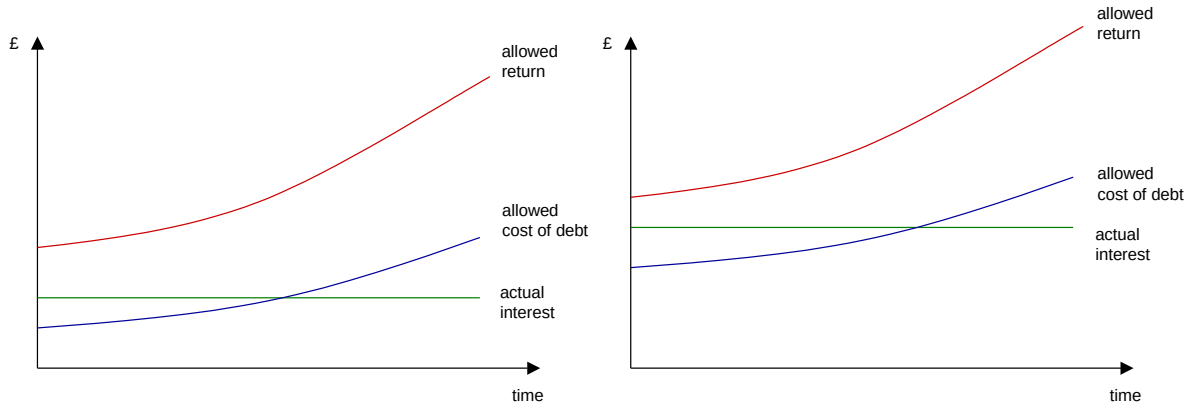
We first highlighted the financeability problems this can cause in a 2005 report.[2] In this paper we showed that a mismatch between the *real* rate of return that regulators incorporate into price controls and the *nominal* interest payments that companies make to most lenders creates short-term weakness in cashflow which is manageable when gearing is low but which causes lenders and rating agencies considerable difficulty when companies are investing and levels of indebtedness move higher. In particular, this mismatch can mean that a company with only moderately high gearing – indeed, with gearing that a regulator might consider economically optimal – may not be able to obtain an investment-grade credit rating and may therefore find that it is unable to borrow to finance new investment in its network.

[1] Ofwat (2004), Future water and sewerage charges 2005-10, final determinations.
[2] First Economics (2005), Financeability: The Key Issue in Regulation Today?, available at www.first-economics.com/financeability.pdf.

Figure 1 illustrates this diagrammatically.[3] The left-hand side depicts a company with gearing of around 50% and the right-hand side depicts a company whose RAV and gearing level move higher due to high levels of investment. The companies are otherwise identical. Both charts comprise a green line representing the nominal interest payments going out to lenders, a red line representing the income coming in from customers through the inclusion of a real rate of return on the RAV in price limits, and a blue line representing the implied allowance for the cost of debt within the rate of return calculation. In both cases the green line is flat (because interest payments to lenders are fixed in money terms) and the red and blue lines grow over time (because the real rate of return is applied to an RAV that grows in line with inflation).

The different shape of the green and blue lines is due to the real/nominal mismatch mentioned above. In the left-hand chart, it can be seen that the regulator's allowance for the cost of equity (i.e. the gap between the red and blue lines) produces sufficient profit to accommodate this mismatch. But in the right-hand chart, a higher proportion of debt and a lower proportion of equity means that the buffer is much smaller. Although in aggregate the right-hand company is being provided with sufficient income to cover its real-life interest bill and still make a profit, the amount of profit earned is not sufficient in the short term to generate the sort of interest cover (i.e. the red line divided by the green line) that rating agencies demand from companies with a comfortable investment-grade rating. Accordingly, the right-hand company could well find it is no longer capable of borrowing new money on reasonable terms unless it takes immediate remedial action.

Figure 1: Returns and interest payments (out-turn prices)



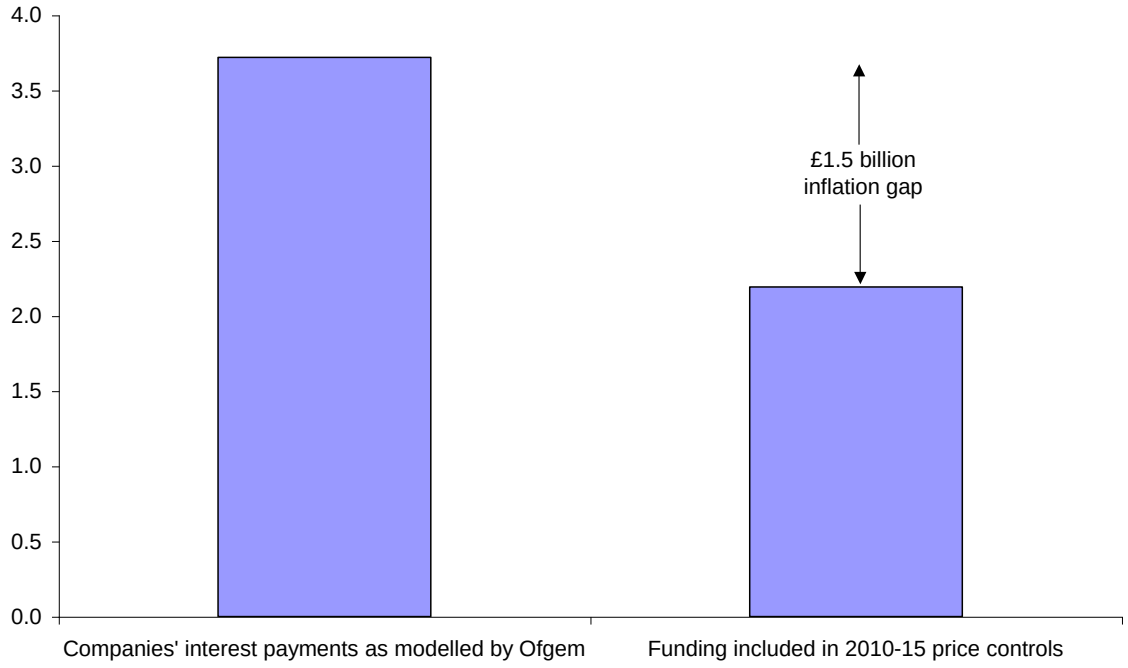
It is important to be clear at this point that there is nothing in situation that we have just described to contradict the assumption that Ofgem is providing companies with an opportunity to earn a return that matches their cost of capital. What is happening is that lenders and rating agencies are reacting unfavourably to the partitioning of the nominal cost of capital into two parts, with the real rate of return going to companies in year via allowed revenue and the inflation component being logged up via an addition to the RAV. To an economist who thinks instinctively in terms of present values this may seem somewhat illogical, but to a rating agency or a lender who cares much more about cashflow in the short and medium term the situation is very straight-forward: the business isn't generating enough profit for there to be confidence that it can pay its interest bill as it falls due.

[3] To keep things simple and to fix ideas, we describe a situation in which all of a company's debt is in nominal terms, and where the company has reached a steady state in its investment programme and no longer experiences negative cashflow. We recognise that in real-life a company will have at least some index-linked debt (which will alleviate the problem we are about to describe) and is likely to be investing historically high amounts in its network (which will exacerbate the problem).

1.2 Case study: Ofgem's DPCR5 final proposals

We can give a real-life sense of the scale of the issues this creates with a simple numerical example. We calculate that the electricity DNOs' interest bill between 2010 and 2015 (i.e. the green line) will be approximately £3.7 billion and that the funding contained within DPCR5 price controls for these payments (i.e. the blue line) is less than £2.2 billion. This leaves £1.5 billion of interest costs for companies to pay for out of equity returns/retained profits, albeit knowing that an equivalent amount of money will be added to the RAV via the annual indexation mechanism.

Figure 2: The inflation gap (£ billion)



In an industry with annual revenues of around £5 billion, a funding gap of £1.5 billion over five years is not a trivial sum of money. It is not therefore difficult to understand why lenders and rating agencies might become concerned about the shortfall in companies' income even if the other inputs into the price control calculation are acceptable to them.

2. Assumptions About Equity Issuance: An Evaluation

Having given what we hope is an accessible and thorough explanation of the mismatch that Ofgem alludes to in its consultation paper, we now consider what it means for Ofgem to hold its allowed revenue calculation unchanged in circumstances where the allowance of a real rate of return results in marked weakness in interest cover ratios.

Ofgem itself notes in its consultation document, that as a result of timing differences, an efficiently financed and efficiently managed company could exhibit ratios that fall short of those required by rating agencies to support comfortable investment grade credit ratings in the short term but not on average over time. This corroborates the analysis that we set out in section 1. Without an adjustment to revenues of the sort that companies have enjoyed at previous price control reviews, and even after maximising the amount of index-linked debt can be issued, we estimate that a company with gearing that matches Ofgem's 65:35 debt:equity ratio could obtain a low BBB category rating at best. In the absence of any reason to believe that the rating agencies will change their rating methodologies in the future, it is not possible for Ofgem to conclude that the revenues it is providing to companies are consistent with a comfortable investment-grade credit rating.

However, this cannot be the end of the story. If Ofgem is to discharge its duty to ensure that companies are able to finance their activities, it cannot conclude a periodic review knowing that (efficient) firms it regulates are sitting on the borderline between investment-grade and junk credit ratings. To do so would leave companies facing very high borrowing costs, jeopardise investment programmes and create considerable doubt about companies' financial resilience. We do not think it is controversial for us to state that it must therefore be that Ofgem has some plausible story of how it is that companies can regain a solid investment-grade credit rating on the back of Ofgem's price control decision.

As we see it, that story necessarily involves equity finance. Without additional revenue and without the ability to tap the debt markets to any great degree the marginal source of funding for a business with weak interest cover ratios can only be the shareholders. In practice this means that Ofgem has to be assuming in its RPI – X @ 20 straw man:

- that an efficiently run company would not be prepared to operate with a borderline or sub investment-grade credit rating;
- that shareholders would restore interest cover to an appropriate level by the only means that is available to them – i.e. by injecting new equity into the business and reducing levels of indebtedness; and
- that Ofgem's regulatory framework, including the way it sets price controls, makes it possible to raise new equity in the amount required and at the time required without cost.

These are important observations because they highlight how Ofgem's statement of policy translates into real-world consequences. In its consultation document Ofgem is perhaps guilty of glossing over the position that it is putting firms in by stating only very curtly that it does not see why the real/nominal mismatch should create financeability issues. A fuller description of Ofgem's policy would be that it is relying on equity investors to resolve the financing problems that the real/nominal mismatch and weak interest cover cause and that its assumption is that financeability will be restored via equity injection.

To all intents and purposes this means that Ofgem's straw man indistinguishable from the approach that Ofwat took to financeability during PR09. In both cases there is an acknowledgement that the real/nominal mismatch puts pressure on interest cover and credit ratings. In both cases there is a clear policy of not responding to weakness in financial ratios with additional revenue. And in both cases it consequently falls to shareholders to ensure that the company can continue to finance its activities. The only difference between the two

sectors is that Ofwat has highlighted explicitly that its approach means that equity injections will be required whereas Ofgem has so far left this unsaid.

In the evaluation that follows in the next two sections of the paper, we elect to describe Ofgem's straw man in these terms. If Ofgem's proposed policy of doing nothing in the face of weak interest cover is the right one, it will be necessary to show that making equity injections to remedy financeability problems is the most cost beneficial response in the long term. This can only be assessed by looking at what equity injections entail and what knock-on consequences equity raising exercises might have on a business in the medium to long term – matters that we do not believe Ofgem has considered to date in its RPI – X @ 20 work. It also requires a comparable analysis of the pros and cons of the revenue adjustments that Ofgem has ruled out in its straw man.

We begin in section 3 with an analysis of equity injections.

3. Evaluation

3.1 Effectiveness

The first thing to say about equity issuance is that it is indisputably a comprehensive fix for problematic financial ratios. If interest cover ratios are too low, the swapping of debt for equity directly reduces the amount of interest that must be paid out to lenders, boosting interest cover and making it possible for a company to attain a rating that would otherwise be out of reach. As such, there can be no doubting that equity injections provide an effective solution for post-periodic review financeability problems.

3.2 Impact on customers

Another obvious attribute of Ofgem's approach is its immediate impact on bills. At a time when there are genuine concerns about the prices of electricity and gas, using the capital markets to finance network companies through a period of tight cashflow minimises upward pressure on prices and means that customers barely notice the financeability issues that businesses are encountering. Indeed, this still holds true even if Ofgem factors an allowance for the transaction costs associated with raising new equity – arguably an important omission from the straw man – into its price control calculations, given their relatively small scale in comparison to total revenues.

If nothing else, there is a neat consistency here between assumptions Ofgem has made in previous price control reviews about index-linked debt issuance and future assumptions about equity issuance. In both cases a regulator is saying that the capital markets are capable of designing their way around the real/nominal mismatch. In the case of index-linked debt, this means reducing coupon payments and inflating the principal owed in exactly the same way that Ofgem provides for only a real rate of return and indexes the RAV. In the case of equity issuance, it means sacrificing short-term cash returns in exchange for capital appreciation and the promise of higher cash payouts in the future.

Experience shows that issuing index-linked debt has until now been basically costless to companies (albeit within limits). If it could be shown that equity issuance was also costless or near costless it would be difficult to argue with Ofgem's RPI – X @ 20 straw man approach on principle, given the clear benefit it offers to customers currently feeling the pinch in the aftermath of the recent recession.

3.3 Interference in ownership

Having worked with companies on the implications of Ofwat's PR09 determination, we have reluctantly come to the conclusion that debt finance and equity finance are not quite this similar in character. In particular it has become apparent to us that the main difference between making assumptions about debt issuance and making assumptions about equity issuance is that the former are directed at a cohort of potential lenders whereas the latter impact wholly on a very specific group of individuals.

In the case of debt, it is possible for a company to structure its borrowing in such a way as to make the identity of the individuals that provide each additional pound of finance largely irrelevant. This has two important implications. First, if a company needs to borrow more, it does not have to go to its existing lenders to raise new debt; instead, it can go to whoever is willing to provide new finance on the most attractive terms. Second, if a lender is unable or unwilling to provide new finance its interests need not be prejudiced by the entry of a new lender.

The identity of the individuals that provide equity capital does matter. Because equity brings with it ownership rights, the question of whether new equity finance is provided by existing shareholders or new shareholders has real consequences. In particular, a shareholder that

does not participate in a rights issue concedes ownership rights to shareholders that do. This means that existing shareholders are now in the uncomfortable position of seeing their property rights eroded if they do not participate in an equity raising exercise initiated by the industry's economic regulator.

It could be, for example, that certain shareholders do not immediately have the finances to add to the investments they have already made. These persons are faced with the choice of buying shares that they would otherwise prefer not to buy or seeing the stake that they have in the company diluted by new shareholders. In the first scenario, the marginal cost of capital could be very high; in the second scenario, they are effectively forced against their will to give up some of their influence on the company's decision making.

If the affected individuals are very small shareholders, this is possibly not a major issue. But if the people affected are large shareholders, a requirement for new equity has the potential to alter fundamentally a company's ownership structure. Among other things, it is possible, that a majority shareholder would lose its majority stake, that an owner who previously had 100% control of a company would be forced to bring in a minority shareholder, or, more generally, that any carefully struck balance of interests among owners is disrupted.

We think this poses very significant question marks against Ofgem's (and Ofwat's) approach to financeability. When individuals buy shares in companies, they don't undertake to provide further equity capital on an 'as needed' basis and they do expect the control that they exert over decision-making to be preserved unless they consent to a change in ownership. In making equity injections a mandatory consequence of its price control reviews Ofgem is overturning these assumptions and saying that it is okay to put shareholders in a position where they have to choose between further share purchases and dilution of control.

We question whether it is right for a regulator to force these choices. We also question whether regulation should extend beyond the regulated company to the choices, actions and identity of its owners. For the avoidance of doubt, this wasn't an issue when regulators were expecting companies to issue new debt because it was possible to take money from new lenders without affecting the interests of existing lenders. Now that Ofgem is to be making assumptions about equity issuance it is impossible to ignore that the consequences of these assumptions fall on particular individuals with defined property rights, whose interests may be affected detrimentally by Ofgem's stance.

3.4 Impact on the cost of equity

The implication of the argument that we have just outlined is that shareholders will respond to the risk of forced equity issuance and/or forced dilution by increasing the returns that they demand of companies. The additional return sought will be just sufficient to compensate for the expected costs of having to make an investment that the shareholder would not otherwise wish to make and/or the costs associated with dilution of control, and, crucially, will eventually feed through into the bills that customers pay to companies.[4]

There is also an argument which says that the cost of equity will increase even if shareholders are not cash-constrained and it is possible to obtain new equity without a change in ownership structures. The origins of a higher cost of capital in such circumstances lie in the limited cash return that shareholders make from their investments over periods of, say, 5 or 10 years if during this time they are asked to make an equity injection.

[4] Note that it may be some time before this becomes apparent to outsiders now that so few of the regulated network companies are listed. This is arguably a cause of concern insofar as an unseen gap between the cost of capital and the allowed rate of return will have detrimental implications for customers until such time as that gap is closed.

We can show this most clearly by reference to water companies' experience in PR09. The proposition from Ofwat to the three companies that are required to make equity injections between 2010 and 2015 is that:

- in normal years, a company that performs in line with regulatory assumptions will be able to announce a dividend with a yield of 5%; but
- at such time as the credit rating comes under pressure it will be necessary for shareholders to increase their equity stakes by between 7.5% and 20%.

As in Ofgem's straw man, there is nothing in this proposition to undermine the principle that over a very long (i.e. infinite) horizon shareholders take away a return in line with their estimated cost of capital. But over shorter horizons, the cash return that flows to the shareholder can start to look very small. Take, for example, the case of Bristol Water, which is assumed by Ofwat to make a 10% equity injection at some point before 2015: over a five-year period an initial investment of £100 will yield a cash return of around £15. For Thames Water, whose equity injection is 20%, the numbers look even worse: over five years the cash return is around £5 and over ten years the cash return on £100 is around £30. Factor in the time value of money and the possibility that equity injections might be required in two successive price control periods and it is not implausible to imagine that a company might produce a near-zero yield for the shareholder over a ten-year horizon under Ofgem's straw man.

One has to question if this level of income generation is enough to attract and retain shareholders' investment (even if, we must stress again, shareholders earn a return in line with their cost of capital over the very long term). The academic literature contains mixed messages about the impact that short-term yield and dividend pay-out ratios have on a company's cost of capital, but we think it is fair to point out that many of today's investors in regulated companies invest because they see firms as 'yield stocks' – i.e. they value the income that relatively safe, stable businesses produce for the shareholders. If this income as good as vanishes over a period of 5-10 years,[5] appetite for regulated businesses' equity could start to diminish quite considerably unless companies are able to reposition themselves to attract alternative types of investor.

3.5 Long-term consequences for regulators' decision-making

One final observation that has to be made about Ofgem's approach to financeability is that it hands the regulator an unprecedented amount of discretion to flex the amount of revenue that firms earn in any five-year price control period. The logic of Ofgem's RPI – X @ 20 straw man is that so long as it correctly identifies the efficient costs of operating and maintaining the energy networks, it doesn't matter whether remuneration for those costs comes as costs fall due or at a later date. So long as Ofgem sees itself committing credibly to passing costs on to customers in the very long run on, and so long as equity is assumed to be flexible enough to resolve short-term cashflow issues, the regulator's financing duty collapses to a duty to set the cost of capital at an appropriate level.

In this paper we have been focusing on a mismatch between the payment of interest by companies and the provision of income via the price control. It is not hard to think how other mismatches could emerge in the future, for example via:

- the temptation to set relatively low ex ante expenditure allowances along with end-of-period true-up mechanisms to wash up the difference between expected and actual costs;

[5] Income-sensitive investors can, of course, replicate the cashflows that would accrue in the absence of equity injection by selling shares. But this brings us back full circle to the arguments made in section 3.3 about Ofgem interfering in and destabilising ownership structures.

- the discretion that Ofgem has to change the allocation of monies between the slow and fast pots; or
- the discretion that Ofgem has to adjust the period over which additions to the RAV are depreciated.

In each of these cases, Ofgem's RPI – X @ 20 straw man says that the total amount of revenue that a company earns in each five-year period has no impact on financeability so long as a regulator is able to signal that over an infinite horizon the present value of revenues will equal the present value of costs.

We think that this is a step too far and that cashflow tests have played and should continue to play a useful part in the periodic review process. Although it is often uncomfortable for a regulator to have to defer to rating agencies' judgments on credit quality, these bodies indisputably influence the people that lend to regulated companies and cannot just be ignored. One particular role they play is to show that real-life investors don't just care about present values, but worry about cash generation within each five-year control period – a situation that economists might find puzzling, but one which reflects reality nonetheless.

For this reason, we would regard the disappearance of ratio analysis from periodic reviews as a backward step and one that would remove an important constraint on regulators' decision making. If providers of capital do not deal solely in present values, regulators shouldn't either. Rather, they should regard the timing of income streams as an important facet of their determinations.

4. What Are the Alternatives?

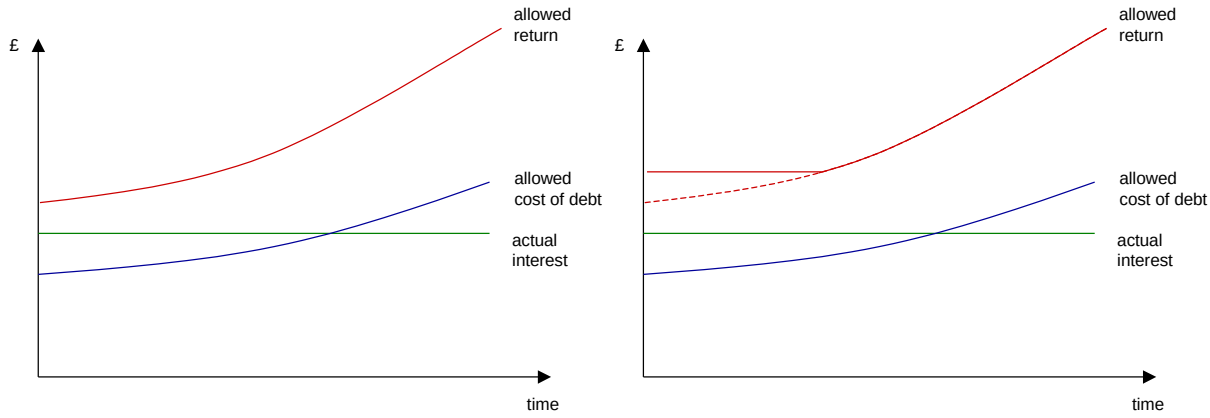
Having identified both the pros and cons of assumptions about equity injection we now consider what it would mean for Ofgem to respond to weak financial ratios with revenue adjustments. We do this in two parts by considering separately:

- NPV-positive revenue uplifts; and
- NPV-neutral revenue additions/revenue advancement.

4.1 NPV-positive revenue uplifts

No-strings-attached revenue uplifts have been applied in a number of periodic reviews between 2004 to 2009 and were seen most recently in Ofwat's PR09 determination for water-only companies. They constitute the most direct way of dealing with weak cashflow – i.e. if a business does not have sufficient income to pass financial ratio tests, price control uplifts correct this problem by backfitting allowed revenues to the required level of interest cover. Figure 3 depicts the solution graphically.

Figure 3: The application of revenue uplifts – before and after



The most obvious consequence of this sort of response to financeability issues is that customers pay companies higher returns than would otherwise be the case. In order for this to be the optimal way of addressing financeability issues one therefore has to believe that there is some sort of error in the original cost of capital estimate and that a failure to obtain the financial ratios sought by rating agencies and lenders is a failure to calculate the cost of capital correctly.

Such contentions require careful analysis. On the one hand, it is by no means implausible that a regulator's calculation of the cost of capital could contain errors. Where this is the case, the consequences of setting the allowed rate of return too low could well include weak financial ratios and an inability to obtain an acceptable credit rating from the rating agencies.

On the other hand, it is wrong to say that estimating the cost of capital correctly will *always* produce acceptable financial ratios. To see this one has to remember that Ofgem elects to partition the cost of capital into two parts, with one part (the real rate of return) flowing through to bills in year and the other (compensation for inflation) being paid to the companies as an addition to the RAV. If Ofgem were to combine both elements together and pass the whole of the nominal cost of capital through to customers on an annual basis, there would normally be no question of companies not passing the rating agencies' tests.[6]

[6] As an example of this, our back-of-the-envelope maths shows that a typical firm's interest cover would improve by at least 0.75 times were Ofgem to factor the whole of the nominal cost of capital into price controls – more than enough to pass any reasonable interest cover test.

However, in electing to allow only a real rate of return in annual price limits it can be that Ofgem leaves the in year return too small for companies to demonstrate that they exhibit appropriate levels of interest cover. Importantly, this can occur even when there is no error in the original estimate of the nominal cost of capital.

We can conclude from this that it is wrong to automatically blame financeability issues on the cost of capital. We can also note that if a regulator were to respond to what is essentially an allocation/cashflow issue by awarding a company a higher return on the RAV it would end up handing shareholders supernormal profits at customers' expense. Customers would rightly view this as a disproportionate response and wonder why it was that they were having to pay higher bills.

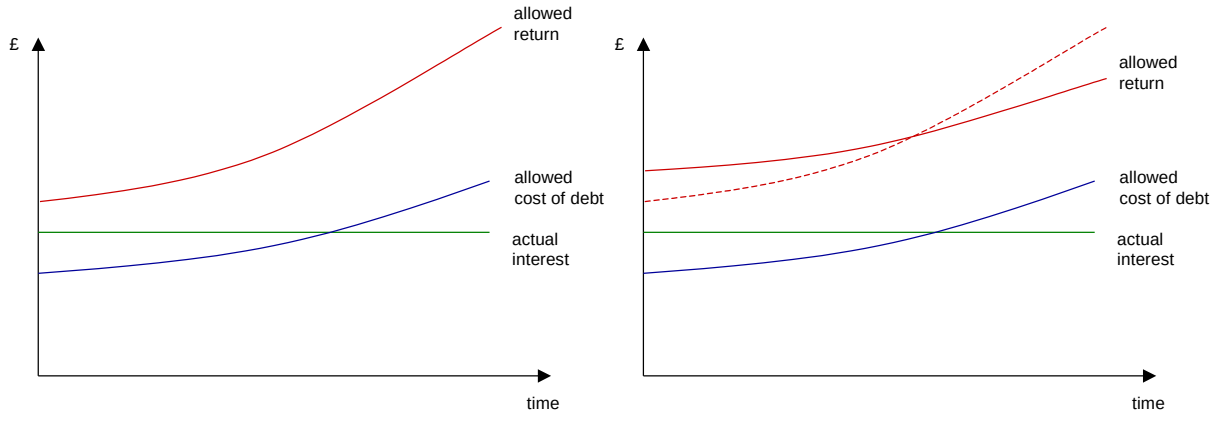
For the avoidance of doubt, our strong view is that if financeability problems are the result of short-term cashflow difficulties and not any defect in Ofgem's calculation of allowed revenues over the very long term, it follows that the solution should deal only with the cashflow problem and not interfere with the present value of future revenues. Departing from this rule risks causing detriment to customers unnecessarily.

4.2 NPV-neutral revenue advancement

It is this observation that leads some commentators, including some regulators, to favour NPV-neutral revenue advancement as their preferred financeability fix. Their intuition is that if financeability problems are primarily a timing issue, the regulatory response should seek to address the timing of revenues head on, leaving long-term value unchanged.

One can see the logic of this position by going back again to figure 1 in section 1 of this paper. In these charts the blue lines and the green lines have the same present value, but with revenue coming into companies more slowly than companies pay out to lenders. If a regulator were to tilt the blue line/red line towards the green line, there would come a point (most likely well before the lines went flat) at which companies had sufficient income and sufficient interest cover to satisfy rating agencies and lenders. Customers would pay a little bit more in the short term, but a little bit less in later control periods and would be no worse and no better off in the long term. Figure 4 gives an illustration of this approach.

Figure 4: The application of NPV-neutral revenue reprofiling – before and after



In practice, there are different ways in which this advancement of revenues could be brought about. Ofgem in the energy sector has on various occasions accelerated the depreciation of investments added to companies' RAVs and/or expensed capital expenditure on a pay-as-you go basis. Other regulators have been less inclined to make such adjustments, arguing that they constitute undue interference in the regulatory calculation and send inappropriate price signals to companies and their customers. We have some sympathy with this view and

we do not think Ofgem's RPI – X @ 20 project team should be criticised for wanting to revert to a more economic approach to depreciation in future price control reviews.

However, we say this only because the profiling of depreciation is not the only tool that a regulator has to move money across control periods. The best examples of this are provided by the CAA, who in its reviews of airports and NATS has advanced revenue much more directly by adding to income in the immediate five-year period with a promise to deduct a corresponding amount of income at future reviews. In the past we have suggested that regulators might think of calling this sort of intervention an 'inflation profiling adjustment' to make it clear that the purpose of revenue advancement in the face of financeability problems is to give to companies (partial) compensation upfront for inflation that would otherwise only come through over time via the indexation of the RAV.

Whatever the labelling, we think that an NPV-neutral revenue profiling fix for financeability issues can simultaneously pass a three-pronged test of being acceptable to the rating agencies, of giving rise to no unintended interference to other aspects of the regulatory calculation, and of providing a permanent and comprehensive fix to the problems caused by weak financial ratios.

The obvious downside of a reprofiling approach is that, by definition, it adds to customers' bills in the short term, albeit with an offsetting reduction in bills in the long term. It is wrong, however, to conclude that higher bills are always a bad thing, and in this particular case we think it is worth asking whether the increase in prices places an undue burden on current customers or whether it unwinds a cross-subsidy that perhaps shouldn't be there in the first place. We say this because the timing with which investors in regulated sectors get compensated for the eroding effects of inflation looks slightly curious – rather than have customers pay as inflation occurs, the regulatory calculation, through the indexation of the RAV, defers compensation to future control periods and future generations of customers.

Our experience is that in other capital intensive industries it is more common to see charges set in such a way as to cover the nominal rather than real cost of capital. For example, in the Competition Commission's inquiry into the rolling stock leasing market it was accepted by all parties that the ROSCOs should be able to earn a rate of return in line with their nominal cost of capital each year. This demonstrates that in industries with discrete assets of finite lives and with no long-term guarantee that an individual firm will enjoy continuity of supply, it doesn't make sense to postpone compensation for inflation indefinitely. Rather, firms have to take payment from current customers or risk not receiving payment at all.

(Note that this may be a particularly pertinent observation for the water industry at the current time and, by implication, for energy networks in the future. With government and Ofwat looking at a fundamental overhaul of industry structure, including the introduction of competition at different stages in the value chain, it is by no means certain that money logged up into RAVs will be fully recoverable from the customers of the future (i.e. it is perfectly possible that it will be a different company and/or a different group of shareholders collecting returns from customers in 10, 20 or 50 years time). If companies are paying the costs of inflation now, one might reasonably question whether it is right for the regulator to provide for compensation in future price controls if there can be no guarantee that it will be setting price controls except in the very short term. Indeed, one might also ask whether regulators aren't distorting future competition by giving incumbents price limits that include only a real rate of return when new entrants, who do not have price controls and associated RAVs, are likely to have no choice but to recover their financing costs as they are incurred.)

At the very least, we think the very real consequences of the real/nominal mismatch means that it is incumbent on regulators to explain why they set price limits in the way that they do. We recognise that investors value the long-term link between regulated firms' revenues and RPI and we are certainly not suggesting that this link should be broken. Rather, we are suggesting that there might just be a way of compensating for inflation in a more

sophisticated way so as to eliminate the weakness in cashflow that the current approach creates.

5. Conclusions

We can summarise the main points to emerge from this paper as follows.

1. An essential starting point in the analysis of Ofgem's RPI – X @ 20 straw man is an understanding of what it is that might cause an efficient network company to exhibit weak interest cover ratios. Ofgem appears already to have identified the key problem in its consultation document: a mismatch between the real rate of return factored into price controls and the nominal interest payments made to most lenders.

2. If this mismatch causes an efficient regulated company to have only borderline investment-grade credit quality – or worse – at the conclusion of a periodic review, it becomes incumbent on Ofgem to explain how that company will finance its activities if the regulator is to discharge its legal objectives and duties. In this regard, the effect of a proposed policy of not allowing any adjustment to allowed revenues is to require the company to issue new equity in order to reduce indebtedness, improve interest cover and regain an acceptable credit rating.

3. Assuming that shareholders inject new equity is undoubtedly a viable fix for the problems that the real/nominal mismatch causes, and may be seen as quite attractive insofar as it permits Ofgem to hold prices low in the short term. However, there are also wider issues to consider, not least that:

    a. current shareholders might not be able to commit new money at the specific time and to the specific amount that regulators assume. In these circumstances, assumptions about equity injection require certain shareholders to cede ownership rights to third parties;

    b. the proposition that regulators/companies are putting to shareholders is not an especially attractive one. Based on experience in Ofwat's PR09 it is by no means unrealistic to think that shareholders could see a near-zero net distribution over a five-year control period – something which would almost certainly make equity interest much more difficult to attract and retain; and

    c. if regulators are to be permitted to assume that equity is the marginal source of finance in regulated sectors, and if it is right that all shareholders care about is earning a return in line with their cost of capital over very long horizons, it becomes hard to see why regulators need to worry about revenue entitlements in individual five-year periods any more. A regulator could legitimately argue that they can set a price control at any level they choose so long as in their mind they see a long-term match between the present value of revenues and the present value of costs.

4. If one allows for the detrimental effect that the above factors are likely to have on the cost of equity, it becomes hard to see how assumptions about equity issuance are in customers' long-term interests. The sense is that Ofgem could be capturing short-term benefit for customers at the expense of higher prices in the medium to long term.

5. That is not to say that regulators have to respond to the real/nominal mismatch with the sorts of NPV-positive revenue uplifts that have been seen previously in periodic reviews. A problem with the timing of revenues requires a timing solution, not a fix that alters the overall value of companies' income streams.

6. It is also not necessary for Ofgem to implement NPV-neutral revenue adjustments via ad hoc and arbitrary changes to depreciation rules. The CAA's work shows that it is perfectly possible to move revenue between control periods without causing damage elsewhere.

7. It is also possible to articulate a clear economic rationale for revenue reprofiling. If companies are compensating most of their lenders for inflation as it occurs but the regulatory calculation provides for compensation for inflation via additions to the RAV, and if this mismatch starts to cause financing problems, it is right and proper that regulators should bring forward just enough of that compensation to eliminate the financing issues.

We put forward these arguments dispassionately and with no self-interest. It may be that others have different views and we hope that they will respond to the above arguments with analysis of their own, thereby filling something of a hole in regulators' explanation for the way in which they set price controls. We think it would be helpful if the debate could now focus in particular on three key questions: why will efficient regulated companies sometimes fail financial ratio tests; is it right for regulation in solving financeability issues to reach beyond companies to the choices, actions and identity of shareholders; and is there a reason why problems caused by a mismatch in the timing of compensation for inflation should not be solved by resolving the mismatch?

Clear statements from regulators like Ofgem on these points will promote regulatory certainty and regulatory commitment at a time when the network businesses need to attract and retain unprecedented amounts of investor capital. For our part, First Economics would be pleased to make further contributions on the subject as necessary over the coming months.

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