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Agenda

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Do utilities provide a good hedge against inflation?

How are utilities affected by the current inflation outlook, which is characterised by great uncertainty? This article examines the question by assessing whether utilities are, or should be, compensated for increased inflation risk, and how their ability to access capital markets is affected. Ultimately, utilities' exposure to inflation risk will have implications for several stakeholders, including investors, consumers and the companies themselves

Until early 2008, utilities regulation had been regulated for over a decade against a backdrop of low, positive and relatively stable inflation. This environment has now changed. Rates of inflation as measured by the retail price index (RPI) have reached both a 17-year high and a 48-year low in the past 12 months. Uncertainty surrounding the outlook for inflation has increased, and historical relationships between different inflation indices appear to have broken down.

Although regulatory regimes contain provisions to compensate investors in utility companies for inflation risk, the robustness of these regimes to significant inflation volatility or deflation has not been tested to any significant extent until recently. Regulators have expressed confidence that these provisions are adequate, with Regina Finn, Chief Executive of Ofwat, the water industry regulator of England and Wales, stating that:

> If there was long term deflation or a closure of the markets that would have severe effects. But we have the tools within the regime to manage these.[1]

One of the key aspects of the regulatory regime that is likely to be attractive to investors is the potential for utilities to offer a way to hedge inflation risk. As such, utilities might be expected to have a greater ability than other sectors to access capital markets at times of high inflation volatility. Nevertheless, consideration of the way the regime compensates for inflation indicates that there may be areas in which this hedge is imperfect.

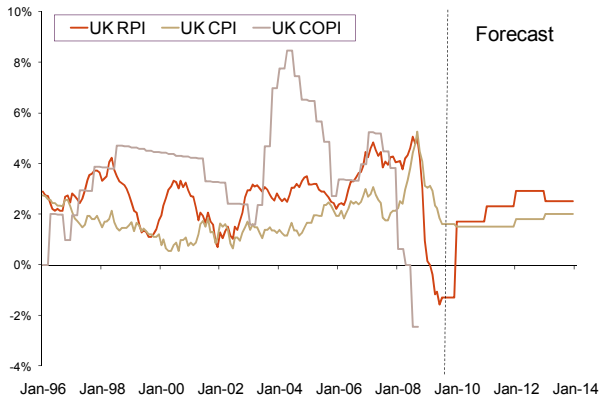
This article addresses the following question: to what extent does the current regulatory regime offer protection to utilities and their investors in a world of uncertain future inflation?

Background

In recent months, the inflation stability achieved over most of the previous two decades has not only given way to negative inflation, as measured by the RPI, but has also seen a change in the relationship between the RPI and other inflation indices. Figure 1 provides an overview of the recent history of selected UK inflation indices: the RPI, the consumer price index (CPI) and the construction output price index (COPI).

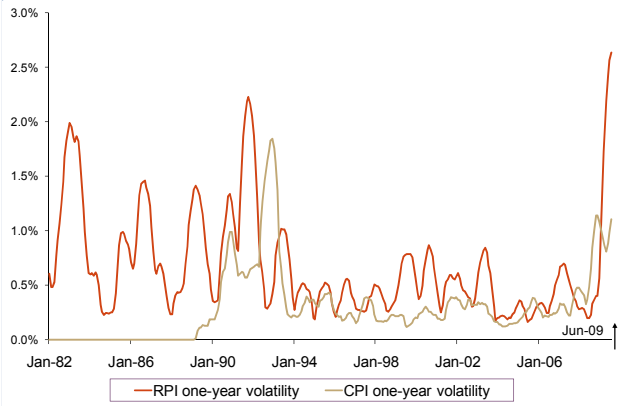
The outlook for inflation has also become more uncertain. Figure 2 below shows that volatility in inflation indices has more than doubled since the beginning of the decade, to levels unseen since the early 1990s. Divergences between different inflation indices and the reversal of historical relationships between indices (for example, the decoupling of the CPI and RPI) contribute to increased uncertainty

Figure 1 CPI, RPI and COPI inflation indices (%)



Source: Historical data from Datastream: forecasts from HM Treasury (2009), 'Forecasts for the UK Economy: a Comparison of Independent Forecasts', May.

Figure 2 Inflation volatility (standard deviation) (%)



Note: One-year rolling standard deviation based on monthly data.
Source: Datastream and Oxera calculations.

surrounding the outlook for inflation compared with previous periods. Rising uncertainty may be due to several factors, including the uncertainty surrounding future energy prices, the uncertainty over the length and severity of the economic downturn, and the extent to which government interventions—such as quantitative easing—will translate into future price increases. The implications of indices decoupling and increased inflation volatility are discussed next.

Implications for utilities

In a general setting, inflation may have an impact on the purchasing power of capital providers. Financial capital maintenance (FCM) principles are designed to preserve the purchasing power of shareholders' funds invested in an asset. A regulatory regime can be designed in such a way as to be consistent with FCM principles by adjusting for inflation while remaining neutral in net present value (NPV) terms.[2] This can be achieved by one of the following general mechanisms:

- compensate for inflation through the return on capital (ie, the nominal cost of capital);
- adjust asset value by inflation—this underpins the approach used by several regulators, including Ofgem, the GB energy regulator, Ofwat and the UK Civil Aviation Authority;
- combine key features of these two approaches (ie, nominal cost of capital and asset indexation) with appropriate adjustments to avoid double-counting—this approach is most common in the telecoms sectors.

Any of these mechanisms can be designed to protect against inflation risk over the life of a utility's assets. However, over shorter periods, general inflation and changes in input prices may affect the cash flow generated by regulated utilities. The implications of the current inflation outlook for utilities with respect to the ability to raise finance, the inflation risk premium (IRP), and operating and capital expenditure (OPEX and CAPEX) are discussed below.

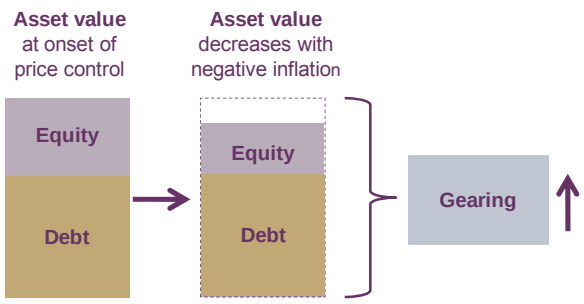
Ability to raise finance

The issue of whether the current regulatory asset base/weighted average cost of capital (RAB/WACC) model of regulation leads to financeability concerns has, to date, been discussed in an environment of low and stable inflation. In the 2006 Financing Networks paper, Ofgem and Ofwat argued that, while being neutral in NPV terms, the existing mechanism for dealing with inflation generated a mismatch between the profile of allowed revenue and that of financial charges to both debt and equity capital providers.[3] These timing differences, in turn, could create short-term cash-flow pressures and lead to difficulties in accessing capital markets to fund required CAPEX.

These cash-flow gaps are proportional to the absolute size of inflation, all else being equal. In a world of uncertain inflation outlook, the probability of more extreme future values of inflation (both high and low) is higher, as a reflection of the wider confidence interval. Therefore, the financeability concern is expected to become more important so long as future inflation remains highly uncertain. In addition to amplifying short-term cash-flow gaps, other implications of high and low inflation include the following.

- **Other impacts of high inflation**: the financeability impact of high inflation depends to a great extent on the main drivers of high inflation. Cash flow could be negatively affected if, for instance, commodity prices and labour costs were to rise by more than the index used to inflate CAPEX and OPEX projections, respectively (discussed below). Any such systematic difference could potentially lead to a deterioration in a company's financial position and restrict its ability to access capital markets on reasonable terms.
- **Other impacts of low inflation**: the recent RPI deflation has caused concern about certain utilities breaching their debt covenants as gearing was expected to rise (see Figure 3 below). Increases in gearing may impose restrictions on the actions of borrowers as existing debt covenants become more constraining. This may also be accompanied by credit rating downgrades, in which case companies would face a higher cost of debt, and reduced access to debt markets for refinancing and the financing of incremental CAPEX. Downgrades would also be expected to lead to a rise in the cost of equity. The impact of low inflation on financeability (from a

Figure 3 Impact of negative inflation on gearing



Source: Oxera.

cash-flow perspective) would be somewhat mitigated if companies can refinance debt at lower nominal interest rates that fully reflect lower inflation expectations. In the current capital markets environment, the problem is that it may not be possible to refinance at lower nominal interest rates.

Compensation for inflation risk premium

Rising inflation volatility has a direct impact on the magnitude of IRP. When investing in an asset, investors not only expect to be compensated for the inflation they anticipate, but also for the risk that inflation is significantly different from their expectation (ie, highly volatile) during their investment horizon.

In any given year, a utility's cash flow can be attributed to its various capital providers. Debt holders receive an interest payment, which includes compensation for expected default, and, in the case of fixed coupon bonds, compensation for expected inflation and inflation risk. Providers of equity capital have a claim on the residual cash flow (net of taxes), which results from the regulatory mechanisms in place.

As discussed, the regime ensures NPV-neutrality over the life of the assets, but cash-flow gaps may occur in any given year. Therefore, equity investors may be exposed to inflation risk, and require a compensation for IRP, unless their investment horizon exactly matches the utility's asset life.

In the case of most utilities (except telecoms), the allowed return on capital is based on a real WACC. This WACC may not include a component to compensate for the IRP, depending on how its parameters are estimated. In cases where the real risk-free rate is estimated from the yields on index-linked gilts, the resulting real WACC will not include an IRP component (see Figure 4). This is because investors in these gilts are protected from changes in the rate of inflation, and hence yields on index-linked gilts will not reflect an IRP. Therefore, investors' required compensation for inflation risk may not be incorporated into the structure of 'nominal RAB/real WACC' regulatory regimes in the absence of explicit adjustments.

IRP has not been completely overlooked in previous regulatory determinations. For example, in 2003 Oftel, the UK telecommunications regulator, stated that no adjustment was made for the IRP, on the basis that it was 'not significantly different from zero'.[4] Recent estimates of the IRP range from as low as 3 basis points (bp) in the USA to 50bp in the UK.[5]

Despite the difficulties in estimating the precise level of IRP, the sharp rise in inflation volatility over the last few months (see Figure 2 above) is likely to have translated into a corresponding rise in IRP. Accordingly, explicit compensation for IRP may become necessary going forward.

Compensation for OPEX and CAPEX

One way to ensure that investors recover the full amount of inflation in OPEX and CAPEX would be to conduct an ex post assessment of actual increases in input costs. However, this would considerably reduce a company's incentives to control costs and seek efficiency improvements. A balance between protecting companies against unforeseen cost increases and maintaining efficiency incentives must therefore be achieved.

If investors are to be remunerated for cost increases, remuneration for OPEX needs to be linked to a rate of inflation that is relevant. Cost categories that are likely

Figure 4 Decomposition of nominal risk-free rate

Source: Oxera.

to be more relevant to utilities' OPEX include labour, energy and business rates.

To the extent that the rate of inflation for the 'basket' of inputs for a utility is systematically different to the rate of inflation based on the RPI, companies will be over- or under-compensated for inflation. Even if there is no systematic difference, the company will face the risk that the rates of inflation based on these two different baskets—and hence costs and allowed revenues—will diverge from each other.

To compensate for expected CAPEX inflation, asset-specific inflation forecasts are required. The COPI is often used by regulators to forecast the rate of inflation relevant to CAPEX. One approach (used by Ofwat and by the Competition Commission in cases concerning the London airports) is to forecast RPI and then apply an adjustment based on historical differentials between the RPI and COPI.[6]

Regardless of the index used, the method presents challenges for both OPEX and CAPEX. The high volatility and cyclicality of inflation indices, including the COPI, can make inflation difficult to forecast accurately. To address the probability that the selected index diverges from the actual input price inflation (but only that which is outside the control of the company), alternative indices might be considered. However, an index customised to reflect changes in specific input prices would be less transparent than a widely used index such as the RPI or the COPI.

Having recognised these limitations, some regulators have adopted measures to mitigate these risks. In its consultation for the fifth Distribution Price Control Review of electricity companies (DPCR5), Ofgem explored the possibility of a trigger/indexation mechanism based on steel and copper prices or a more general index. Ofgem mentions the British Electrotechnical and Allied Manufacturers' Association (BEAMA) index, which is an electrical equipment price index.[7] Separately, Ofwat allows for interim determinations to be triggered on the basis of certain notified items and relevant changes of circumstance (RCCs). One such RCC allows three companies (Anglian Water, United Utilities and Yorkshire Water) to trigger an interim determination if the difference between the COPI and RPI inflation is significant.[8] Ofwat is expected to change the notified index to the infrastructure output price index (IOPI), a sub-set of COPI, for the next price control period, on the basis that it is more reflective of capital price inflation in the water industry than the COPI.[9]

In summary, utilities may bear some additional risk if the indexation of their allowed OPEX and CAPEX does not perfectly cover real price effects. This risk is expected to increase as indices become more volatile and larger discrepancies arise.

Conclusions

The new economic environment will test the mechanism for dealing with inflation in regulated utilities, and it might be that investors are not entirely immune from real price effects. Exposure to inflation risk is expected to increase unless inflation becomes relatively stable and predictable with a certain degree of accuracy. This raises several challenging questions regarding the way in which different stakeholders and regulators might seek to mitigate that risk.

- Will investors react to the risk by increasing their required return expectations, which would have effects on market valuation?
- Might companies respond by increasing the mix of index-linked securities in their financing structure?
- Could regulators decide to implement specific risk mitigation mechanisms, or perhaps even favour the unlikely trade-off of some of the increased risk against a reduction in efficiency incentives?

[1] Quoted in *Utility Week* (2009), 'Price Deflation Threat to Highly Geared Utility Holdcos', March 19th.
[2] In its latest accounting guidelines, Ofwat explicitly considered the compatibility of its regulatory regime with FCM principles. See Ofwat (2007), 'Regulatory Accounting Guideline 1.04', February.
[3] Ofwat, Ofgem (2006), 'Financing Networks: A Discussion Paper', February.
[4] Oftel (2003), 'Wholesale Mobile Voice Call Termination: Proposals for the Identification and Analysis of Markets, Determination of Market Power and Setting of SMP Conditions', Annex E, Cost of Capital, December 19th, para E.20.
[5] US estimate obtained from data covering 1952–2006, UK estimate obtained from a ten-year period. Sources: Ravenna, F. and Seppala, J. (2007), 'Monetary Policy, Expected Inflation, and Inflation Risk Premia', *Journal of Economic Literature*, August; Joyce, M., Lildholdt, P. and Sorensen, S. (2009), 'Extracting Inflation Expectations and Inflation Risk Premia from the Term Structure: a Joint Model of the UK Nominal and Real Yield Curves', Bank of England working paper No.360.
[6] For Stansted Airport, the Competition Commission assumed RPI + 0.75 for 2009–14. In comparison, inflation based on the COPI is currently lower than inflation based on RPI.
[7] Ofgem (2009), 'Electricity Distribution Price Control Review Methodology and Initial Results Paper', May 8th, para 10.31.
[8] Ofwat (2004), 'Future Water and Sewerage Charges 2005-10: Final Determinations', Chapter 16.
[9] Ofwat (2009), 'Setting Price Limits for 2010-15: Framework and Approach'.

If you have any questions regarding the issues raised in this article, please contact the editor, Derek Holt: tel +44 (0) 1865 253 000 or email d_holt@oxera.com

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