Inflation measures in economic regulation

Information Paper

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About this document

There are different approaches to the impact of inflation on consumers used by regulators. We are considering the various approaches currently used, and whether RPI, where used, should remain an appropriate measure to be utilised by regulators and if not which alternative measure(s) would, on balance, be preferred.

The purpose of this short information paper is to provide:

- A brief consideration of inflation measures within economic regulation.
- An outline of the approaches currently utilised by UKRN members in considering the impact of inflation when setting prices.

This paper is not intended to put forward policy statements on behalf of any of the contributing regulators and if there appears to be a conflict between the material contained herein and an individual regulator's relevant policy papers then the individual regulator's own papers take precedence.

While this paper is only intended to provide information we would welcome suggestions, comments or questions. Please submit these through the Contact Us page on the UKRN website

UKRN

UKRN is a network formed by the UK's economic regulators:

- The Civil Aviation Authority (CAA)
- The Financial Conduct Authority (FCA), including the Payment Systems Regulator (PSR) [1]
- Office of Communications (Ofcom)
- Office of Gas and Electricity Markets (Ofgem)
- Water Services Regulation Authority (Ofwat)
- Office of Rail Regulation (ORR)
- Northern Ireland Authority for Utility Regulation (Utility Regulator)

Monitor, the sector regulator for health, participates in the network and its projects as appropriate. The Water Industry Commission for Scotland (WICS) and Legal Services Board (LSB) are contributing members which generally participate in projects as observers.

[1] Although it has competition and consumer protection functions, the FCA is not classed by HM Government as an economic regulator

Contributors to this paper

Contributions to this paper have been made by:

- The Civil Aviation Authority (CAA)
- Office of Communications (Ofcom)
- Office of Gas and Electricity Markets (Ofgem)
- Water Services Regulation Authority (Ofwat)
- Office of Rail and Road (ORR)

Unless explicitly mentioned any reference in this report to “the regulators”, “we” or “us” relates to the five contributors listed above.

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1. Summary

Price Controls and Inflation

1.1. An underlying premise of UK economic regulation since the 1980s was that regulated prices should be set to reflect a published inflation measure (the Retail Price Index or RPI) less an efficiency challenge (X factor) – known as the RPI-X model.

1.2. The rationale for allowing for inflation in prices was that in competitive markets inflationary cost pressure is passed on to customers, and so it is appropriate for customers to bear this risk; while companies still have to manage their actual costs. In regulation, the approach, generally, is to allocate risk to the party best placed to manage it.

A Change in Direction?

1.3. RPI ceased to be a national statistic in 2013. The Consumer Prices Index (CPI) has been used for inflation targeting by the Bank of England since 2003.

1.4. While some regulators have moved, partially or fully, away from the RPI as an inflation measure, Government, while widely using the CPI, continues to use the RPI in a number of important areas including in issuing index-linked debt and capping rail ticket prices. Additionally a significant private market in index-linked debt and derivatives utilising the RPI exists and a large number of final salary pension schemes continue to utilise the RPI in the determination of annual pension increases[2]. The context of using indexation is thus wider than as used by regulators.

1.5. In 2013, the UK Statistics Authority ("UKSA") commissioned Paul Johnson (Director of the Institute for Fiscal Studies) to review UK consumer price statistics.

1.6. Paul Johnson's report published in January 2015, recommended that the Office for National Statistics ("ONS") should move towards making "CPIH", a measure of consumer price inflation including owner occupiers' housing costs, its main measure of inflation.

1.7. The report recommended that; Government and regulators should move towards ending the use of RPI as soon as practicable and each should publicly set out reasons where they decide to keep using RPI; the UKSA should look to phase out production of RPI in consultation with users; and the UKSA and ONS should publish more information annually on prices and costs faced by particular groups of households.

1.8. In June 2015 the UKSA published a consultation 'Measuring Consumer Prices: the options for change' which considered the Johnson report's recommendations. In November 2015 the UKSA published 'Summary of Responses Measuring Consumer Prices: the options for change', in which was noted:

[2] In establishing recovery plans The Pensions Regulator advises trustees that where a defined benefit scheme only provides for CPI-linked inflation increases it is necessary for the trustees to determine the appropriate RPI assumption in order to derive the CPI assumption, because no financial instruments are available from which to derive a market related CPI assumption.

"While there is general support for a identifying a main measure of price change across the economy, respondents are split on what this measure should be. Nearly half (of respondents) feel that it should be CPIH, while others feel that it should be the RPI or even a "household inflation index" (HII) as proposed by the CPI/RPI user group and Royal Statistical Society (RSS)".

1.9. The range of responses highlights the importance of these statistics to individuals, businesses, government and other organisations across the UK.

1.10. In determining its final proposals the UKSA has established advisory panels on which economic regulators are represented. The UKSA now expects that a final response will be issued in the first half of 2016.

Economic Regulation

1.11. Whilst the RPI-X model has evolved considerably, compensation for inflationary pressure remains a key component of price controls across a range of sectors. However the precise methodology each regulator follows has evolved along different paths alongside wider regulatory developments, including coverage of the price controls themselves.

1.12. Recognising the importance of inflation measures in price setting, we propose, as set out in Next Steps below, to publish a discussion paper in which we will consider the benefits, risks, costs and options associated with utilising a common indexation measure. If we conclude that economic regulators in general should transition to the UKSA's chosen main inflation measure, if any, or another measure, we would look to agree a set of principles to guide regulators in the usage of the agreed indexation measure, recognising that such guidelines would not fetter an individual regulator's application of indexation.

1.13. Ahead of the discussion paper we believe it useful to set out how and where each regulator uses indexation within regulated price controls. At Annex 1, we have considered a number of questions which allows a comparison of each regulator's current methodology to be considered alongside other participating regulators. We also recognise that inflation measures are used in various ways by other regulators both in the UK and overseas and expect to include within the upcoming discussion paper a comparison with other regulators both in the UK and overseas.

1.14. Questions addressed in Annex 1 are:

For each price control what is the current indexation measure (RPI, CPI or something else) utilised and over what timeframe has each measure been utilised?
What parts of a price control are indexed, what parts are not (i.e. revenue adjustment, RCV/RAB, cost of capital) and what is the basis for setting each part of the price control for example RCV, LRIC etc.?
What level of index linked debt have regulated companies entered into and what is the remaining duration of this debt (maximum and average)?
Has past consideration of alternative measures been undertaken and what reasons for changing to the current measure were given?
If there has been a move to another form of indexation, has any form of transition mechanism been used and why?
What is the current position, where public, as to consideration of alternative measures for use in future price controls?

Comments

While this paper is intended to provide information, we would welcome suggestions, comments or questions. Please submit these through the Contact Us page on the UKRN website.

Next Steps

1.15. The next stage is to:

- Consider and publish a discussion paper on the benefits, risks, costs and options associated with a common indexation measure.

- If, having considered responses to the discussion paper, regulators conclude that they should on balance seek to utilise a common indexation measure, whether the UKSA's chosen main inflation measure, if any, or another measure, agree and publish guidance for regulators in the usage of the indexation measure, recognising that such guidance would not fetter an individual regulator's use and application of indexation.

2. Annex 1

Question	Regulator	Response
For each price control what is the current indexation measure (RPI, CPI or something else) utilised and over what timeframe has each measure been utilised?	Ofgem	Ofgem has operated real terms price controls with reference to RPI since the privatisation of the energy sector (1986-91). The mainstream onshore energy networks (transmission and distribution) remain subject to real terms price control regimes under Ofgem's RIIO methodology. RPI is also used in other price control mechanisms that apply to independent and 'out-of-area' network operators (relative price controls), legacy gas metering and components of revenues of the smart metering Data Communications Company (DCC). A separate regime for offshore transmission ("OFTO") operators allows for 'biddable indexation", which means that bidders for a scheme can specify the extent to which scheme revenues are indexed with reference to RPI. Interconnectors are regulated under specific regimes which can refer to inflation indices in the country the system is connecting to.
	ORR	RPI and studies of specific input price effects.
	CAA	RPI has been used as the main inflation measure for six airport reviews (since 1986) and two airspace reviews (since 2001). HICP[1] has been used, following the legislative framework's transition from domestic to European law, in the NATS (En Route) ("NERL") price controls since RP1 of the EU Single European Sky initiative ("SES") Performance Scheme in 2012.
	Ofcom	Historically RPI was typically the default inflation index for Ofcom, and its predecessors, with departures from this made by exception, for example, the use of CPI for second class stamps and large letters. For the fixed access market and wholesale broadband access markets, Ofcom proposed in June 2013 to make CPI the preferred inflation index for these and future charge controls and confirmed this decision in June 2014. Since that time Ofcom has also set 2015 mobile call termination charge control using a CPI-X formulation and has proposed to set the leased lines charge control using a CPI-X formulation. The price control on Royal Mail 2nd class stamps also uses CPI.
	Ofwat	RPI has been used by Ofwat as its main measure of inflation since privatisation in 1989. In the most recent (2014) price control (for the period 2015-2020) the RPI-X model continues to be utilised for wholesale water and wastewater allowed revenues. However for the separate household and non-household retail price controls no indexation is used.

Note: 1: The Harmonised Index of Consumer Prices (HICP) as published by Eurostat is a consumer price index which is compiled according to a methodology that has been harmonised across EU countries. This is the same as the existing CPI in the UK.

Question	Regulator	Response
What parts of a price control are indexed, what parts are not (i.e. revenue adjustment, RCV/RAB, cost of capital) and what is the basis for setting each part of the price control for example RCV, LRIC etc.?	Ofgem	Ofgem currently uses RPI as its general inflation index. For RIIO-ED1, Ofgem recognised a structural change in the level of RPI inflation and adjusted its cost of capital and real price effect forecasts accordingly. The RIIO regime is a real terms price control framework which calculates base allowed revenues annually in constant price terms. This means that all components of the base revenue allowances, including the RAV (regulated asset value), totex and allowances for depreciation and the cost of capital, are indexed for general inflation. The cost of capital is a real-terms estimate, informed by historical levels of equity market returns and forecast interest costs after adjusting for the effects of general inflation. Totex forecasts take account of forecast 'real price effects' with reference to specific price indices to ensure totex forecasts remain consistent after applying a general inflation index.
	ORR	RPI is used to determine uplifts to Network Rail's RAB and revenue.
	CAA	The CAA currently use RPI in: • Heathrow Airport Ltd (HAL) price control to up rate prices in the RPI-X model including the up rating of certain costs that factor into the revenue cap during the control including development capex, business rates and performance bonus factor. • Gatwick Airport Ltd (GAL) price control to calculate the core yield as part of the commitments framework. • The estimation of the cost of capital (WACC) for HAL, GAL and NATS En. Route Plc (NERL). • The roll forward of the regulated asset base (RAB) for HAL and NERL. • The estimation of the shadow RAB for GAL. • The forecasting that underpins the cost inputs for the HAL, GAL and NERL controls. • The calculation of fees paid to the CAA by regulated companies. • The calculation of certain legacy financial incentives for NERL. The CAA also use HICP inflation measure in: • NERL Oceanic control for the calculation of the price cap (since 2012); and • NERL SES Performance Scheme control for the calculation of the price cap (since 2012).
	Ofcom	Ofcom sets future prices of charge controlled services based on its estimate of future costs. For each charge control Ofcom produce some form of cost model to estimate these costs. Input costs in these models may be indexed, but Ofcom takes a view on the appropriate index (if any) on a case by case basis. The exception to this is the value of BT's pre-1997 copper and duct asset which are valued on a historic cost accounting basis, but indexed forward at RPI.
	Ofwat	In wholesale water and wastewater price controls RPI is used to index both revenue and RCV. A real WACC, derived from nominal cost of debt and cost of equity components and deflated by a long-term forecast of RPI is applied to RCV.

<table>
<tr><th>Question</th><th>Regulator</th><th>Response</th></tr>
<tr><td rowspan="5">What level of index linked debt have regulated companies entered into and what is the remaining duration of this debt (maximum and average)?</td><td>Ofgem</td><td>Ofgem do not currently require separate disclosure of index-linked debt by company.
Across its RIIO-regulated network sectors, overall debt levels are in the region of £37 billion of which 25% is index-linked [2].
Most of the indexed-linked debt is publicly traded with maturities out to 2058. Approximately 30% of this debt matures within the next 10 years, a further 10% over the following 10 years and the remaining 60% matures after 20 years.</td></tr>
<tr><td>ORR</td><td>Network Rail was reclassified as a Central Government Body from 1 September 2014 and no longer issues debt in the capital markets in its own name. Around 45% of Network Rail's historic debt, including borrowings issued by the Department for Transport, is index linked, with maturities out to 2052. Excluding the DfT loan the index linked percentage rises to 54%.</td></tr>
<tr><td>CAA</td><td>Based on latest published information:
HAL (incl. Heathrow Finance plc):
£1bn in index-linked bonds representing c.10% of total secured bonds in issue.
In addition index-linked derivatives with a face value of £5.3bn have been entered which have a related £411m in associated index-linked accretion value. Index-linked derivatives represent c.48% of non-index linked.
HAL exposure to index-linked accretion is higher than its accounts state by up to £400m since the accounts do not separately identify that it has additional exposure on accretion pay downs already made.
Since December 2014 HAL has entered into more than £300m new index-linked transactions between swaps and bonds.
These two factors take our overall RPI exposure to over 50%.
HAL's index-linked debt averages 22 years with maturities ranging from 7 to 34 years.
GAL:
As at March 2015 GAL had no index-linked bonds however it had entered into £396m (notional value) in index-linked swaps which represent c.24% of total debt.
NERL:
NERL has no index linked bonds.
NERL has a RPI-swap with a notional value of £200m that matures in 2026. As at 31 March 2015, this was equivalent to 36% of NERL's net debt and had a fair value of £127m.</td></tr>
<tr><td>Ofcom</td><td>BT has issued one RPI indexed linked bond of £250 million. This bond was issued in April 2000 and matures in April 2025. For context, BT has outstanding debt in the region of £8bn.</td></tr>
<tr><td>Ofwat</td><td>As at March 2015 reported water sector debt totalled £46.8bn of which 48% was index-linked excluding swaps. Indexed linked totalled £22.5bn which has an average 24 years to maturity.
If considered separately the 8 water-only-companies indexed linked debt totalled £1.8bn out of £2.7bn or 67% of the total reflecting a proportionately higher reliance on index linked debt than the 10 water and wastewater companies.
At least one Euro denominated debt instrument linked to Eurozone CPI has been entered into by a water company the exposure to Eurozone CPI has been swapped to RPI.</td></tr>
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Note: 2: Unless specified index-linked refers to a formal linkage to RPI as published by the ONS. The exact linkage in respect of each individual debt issue or derivative to RPI will be specified in the individual transaction documentation.

Question	Regulator	Response
Has past consideration of alternative measures been undertaken and what reasons for changing to the current measure were given?	Ofgem	Ofgem consider their analysis of the effects of a structural change in RPI in their RIIO-ED1 review provides a template for how they would treat any other change in the inflation index they use for RIIO. As referred to below, Ofgem are consulting on the potential investor concerns arising from a change to different indices in their OFTO regime.
	ORR	Network Rail's customers (train operators) are considered averse to changes to the funding regime and a lot of Network Rail's debt is RPI-linked. As such there has not been any real appetite to move away from RPI which would be an arguably unnecessary complication for the industry. The ORR in its PR13 publications set out their considerations about whether to stay with RPI or move to an alternative measure.
	CAA	The CAA was required to change approach to indexation and switch from RPI to CPI (HICP) for the CP3/RP1 charge control for NERL. There is no discussion on whether the CAA would have made this decision absent legislative change. In the recent airport controls the CAA did not make adjustment from RPI for differing construction inflation as it had done so in prior reviews. The CAA considered that any additions to RPI based on current COPI forecasts would over remunerate the airport for this risk and in a competitive market it would be expected that an airport could negotiate sufficiently such that construction prices do not exceed general inflationary measures.
	Ofcom	Ofcom set out its framework for considering the appropriate inflation index for a charge control in the 2014 Fair Access Market Review Statement. This framework included the following factors: • Official status of the index – is the index compiled by a recognised independent body? • Cost causality – to what extent do the costs of the regulated firm move with the index in question? • Exogeneity – is the index beyond the control of the regulated firm? • Availability of independent forecasts – since charge controls are set over a period of a few years, are independent forecasts available for that period? • Regulatory predictability – is the choice of index clearly reasoned? Ofcom considered that RPI and CPI were of similar quality when judged against most of these factors apart from the official status of the index. On the official status, Ofcom believed that CPI was a superior index because it was recognised as a national statistic. On this basis Ofcom switched to using a CPI-X control.
	Ofwat	Alternative measures of inflation in the regulatory framework were considered and published in a report from UKWIR conducted in 2011. UKWIR Report Ref No 12/RG/07/24. In its July 2015 consultation "Towards Water 2020 – policy issues: regulating monopolies" Ofwat noted in a report by Paul Johnson (in January 2015) of the Institute of Fiscal Studies (IFS) for the UKSA stated that RPI is "no longer fit for purpose" and recommended that government and regulators should switch to using the CPIH (Consumer Price Index plus Housing) measure of inflation. Ofwat recognised in its July consultation the need to consider whether indexing the RCV by RPI remains appropriate for future price control periods, particularly given the importance of reliable indexation in maintaining the trust and confidence of investors. Ofwat will also need to consider which parts of the value chain need to be indexed. When considering the appropriateness of RPI indexation in the future they are mindful of a number of issues, discussed in the consultation, which will need to be resolved. Further to the July 2015 consultation Ofwat, in December 2015, published "Water 2020: Regulatory framework for wholesale markets and the 2019 price review" which includes proposals to change the approach to allowing for inflation in cost recovery. In particular, Ofwat proposed to use CPI for indexing both the RCV and revenues (and therefore prices). To help companies manage this change Ofwat propose to apply a transition mechanism from 2020 that ensures half of the RCV continues to be indexed by RPI. This will provide time for existing RPI linked debt to unwind and avoid undue risks to companies and customers in the transition to CPI.

Question	Regulator	Response
If there has been a move to another form of indexation, has any form of transition mechanism been used and why?	Ofgem	Not applicable.
	ORR	Not applicable.
	CAA	For the transition from RPI to CPI for NERL the CAA imposed some transitional arrangements. In their decision report the CAA stated: "The revised Charging Regulation requires prices to be set in accordance with determined costs calculated in real terms using the CPI measure of inflation. For CP3 the CAA adopted a transitional approach to adjust projected costs based on RPI to a CPI basis of inflation. In addition, the CAA has allowed a hedging cost for the unanticipated variance between the CPI and RPI. However, for future control periods the CAA anticipates that NERL will need to recognise the CPI basis of SES arrangements and draw up its business plan and where possible amend its business arrangements accordingly. In these circumstances the CAA would not expect to provide an inflation hedging allowance." – CAA (2010) NATS (En Route) Plc CP3 Price Control Review 2011-2014 CAA Decision Annex 2: Statement of Regulatory Policy, p23 pp 32, December. The SES required charges to be presented in nominal terms for a transition period. The CAA up rated the forecasts by RPI and then deflated them by CPI. The CAA continues to up rate the RAB and calculate WACC on an RPI basis.
	Ofcom	Where Ofcom has moved from using RPI indexed controls to using CPI indexed control, it has not used any explicit transition mechanism. Ofcom considered that either a CPI-X or a RPI-X control would produce very similar outcomes in terms of nominal price (since the value of X in each formula would be different where the RPI and CPI forecasts differed) and so no transition mechanism was necessary.
	Ofwat	Not applicable.

Question	Regulator	Response
What is the current position, where public, as to consideration of alternative measures for use in future price controls?	Ofgem	Ofgem's position is that they will consider alternative measures of inflation only after due consultation. In October 2015 Ofgem published an open letter seeking views on moving from RPI to CPI as an index applicable for future OFTO and interconnector licences. The purpose of this open letter was not to review indexation policy on any existing revenue arrangements (RIIO-1 which runs to 2021, 2023 for electricity distribution, or existing OFTOs or interconnectors, including those for which Ofgem have selected preferred bidders or granted C&F arrangements). However, Ofgem do anticipate considering indexation as part of its strategy for RIIO-2 at the relevant time in the future.
	ORR	ORR has no public position or current plans to move away from RPI.
	CAA	The CAA has not (currently)made a formal position statement on inflation but considers the following issues important for consideration of the financeability of the regulated companies: • The liquidity of the markets for RPI index linked financial instruments as opposed to the liquidity of CPI index linked financial instruments. Including the relative size of these potential markets; • The regulated companies current exposure to RPI-index linked financial instruments; • The contracting and negotiating behaviour of the regulated companies with regards to unions and suppliers, which characterise its cost-base increase in RPI terms; • The presentational aspects of any transitional change where RPI-0% becomes CPI+1% control.
	Ofcom	Ofcom consider the appropriate index for each charge control on the merits for that particular case. However, it has sought to use the same framework that it developed in the 2014 FAMR (discussed above) when considering which inflation index is appropriate. Since the 2014 FAMR, it has indexed the formula for each charge control using the CPI.
	Ofwat	RPI indexation has been used since privatisation. In July 2015 Ofwat published a consultation "Towards Water 2020 – policy issues: regulating monopolies" which addressed some of the key questions for the future regulation of the water sector in England and Wales. One aspect under consideration, following the Johnson report, was whether RPI indexation remains appropriate. Ofwat also stated in the consultation that "the choice of indexation method should not impact on the total level of returns earned by investors. In determining real costs and the real allowed cost of capital, we would use a consistent approach to the level of inflation. For example, if CPI was used rather than RPI, then the cost allowances and the cost of capital would also be determined using CPI rather than RPI". Further to the July 2015 consultation Ofwat, in December 2015, published "Water 2020: Regulatory framework for wholesale markets and the 2019 price review" which includes proposals to change the approach to allowing for inflation in cost recovery. In particular, Ofwat propose to use CPI, rather than RPI, for indexing both the RCV and revenues (and therefore prices). To help companies manage this change, at the start of the next control period (in 2020) Ofwat propose to apply a transition mechanism that ensures that half of the RCV continues to be indexed by RPI. This will provide time for existing RPI linked debt to unwind and avoid undue risks to companies and customers in the transition to CPI.