Initial consideration of break-even inflation for price control purposes

A note prepared for the ENA

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Ofgem has stated that in the event it does not opt for Options 1 and 2 to address the leverage effect, it would "*review the long run assumption to consider whether there is a more appropriate measure of long-term inflation expectations priced into debt*".[1]

Following this, we understand that Ofgem has indicated that it could use break-even inflation as the relevant long-term assumption.[2] Prior to 2030, Ofgem notes that break-even inflation is aligned to RPI therefore a RPI/CPIH wedge would need to be applied, to express break-even inflation in CPIH-real terms. Beyond 2030 however, Ofgem considers that a "*direct reading*" could be taken.[3]

As we set out below, we consider that Ofgem's assessment of potential future reliance on break-even inflation for regulatory purposes is flawed and its analysis of the issue incomplete. In particular, we consider that:

- Ofgem has not defined the meaning of an "appropriate" measure of long-term inflation;
- Ofgem has not been clear why it is necessary to review the long-run inflation assumption and what is wrong with the long-term OBR forecast currently used at RIIO-2;
- Ofgem has not considered other potential alternatives for long-term inflation assumptions; and
- Ofgem has not shown evidence to suggest that break-even inflation is a superior measure of long-run inflation when compared to alternatives including OBR forecasts.

We explain a range of concerns that would arise from the use of the break-even inflation as a long-run assumption for price control purposes, both in principle and in practice. In particular we highlight evidence that the break-even curve may currently contain pricing components unrelated to inflation expectations, which require further investigation and bring into question its reliability.

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[1] Ofgem (2024) RIIO-3 Sector Specific Methodology Consultation – Finance Annex, paragraph 2.39.

[2] Ofgem (2024) RIIO-3 Sector Specific Methodology Consultation – Finance Annex, paragraph 2.40.

[3] Ofgem (2024) RIIO-3 Sector Specific Methodology Consultation – Finance Annex, paragraph 2.40.

Ofgem hasn't defined the meaning of an "appropriate" measure of long-term inflation

Ofgem has only discussed the use of break-even inflation in a narrow context, specifically, in the context of addressing the so-called leverage effect. However, Ofgem must first set out "what good looks like", and the associated case for change. It should not simply jump to a solution without due assessment.

Given that Ofgem is administering a CPIH-real price control, the objective in this case must be to select an inflation forecast/expectation which closely matches the CPIH measure. Although currently the Office of Budget Responsibility's (OBR's) does not directly forecast CPIH, its CPI forecast is widely regarded as a highly reputable among the set of publicly available sources. To move away from the OBR forecast, Ofgem must do both of the following:

- demonstrate clearly the problem with the OBR forecast; and
- show that an alternative source is better, in particular that it has proven better at predicting inflation.[4]

It is not sufficient to simply point to the past few years of extremely high inflation and say that past OBR forecasts proved to be inaccurate over this time period. No forecast can predict extreme and sudden events like this, and we believe Ofgem will not find any other source of inflation prediction that would have accurately predicted, well in advance, the high inflation that started in late 2021. By that reasoning, if Ofgem has set out to find an alternative inflation forecast that can better predict unpredictably high/low inflation arising from economic shocks in the future then that endeavour is likely to fail.

Ofgem is not clear on why OBR is no longer fit for purpose

Ofgem also needs to be clear as to its intent in seeking an alternative inflation forecast given that it has hitherto relied on a highly credible source and will continue to do so during RIIO-2. This has not been clearly articulated by Ofgem, apart from the objective to make the mechanism "*fairer for consumers*" by in its view somehow better addressing the [leverage] effect.[5]

4 Specifically, the relevant inflation measure which is used in the price control

5 Ofgem (2024) RIIO-3 Sector Specific Methodology Consultation – Finance Annex, paragraph 2.42. In any case, we consider that Ofgem's assessment of the leverage effect does not accurately describe the impact of such effect on each licensee, as Ofgem's quantitative assessment is conducted based on the notional company structure. Ofgem is therefore undertaking a systemic change to the price control based on a narrow assessment which may not even reflect the actual quantum of the leverage effect on licensees.

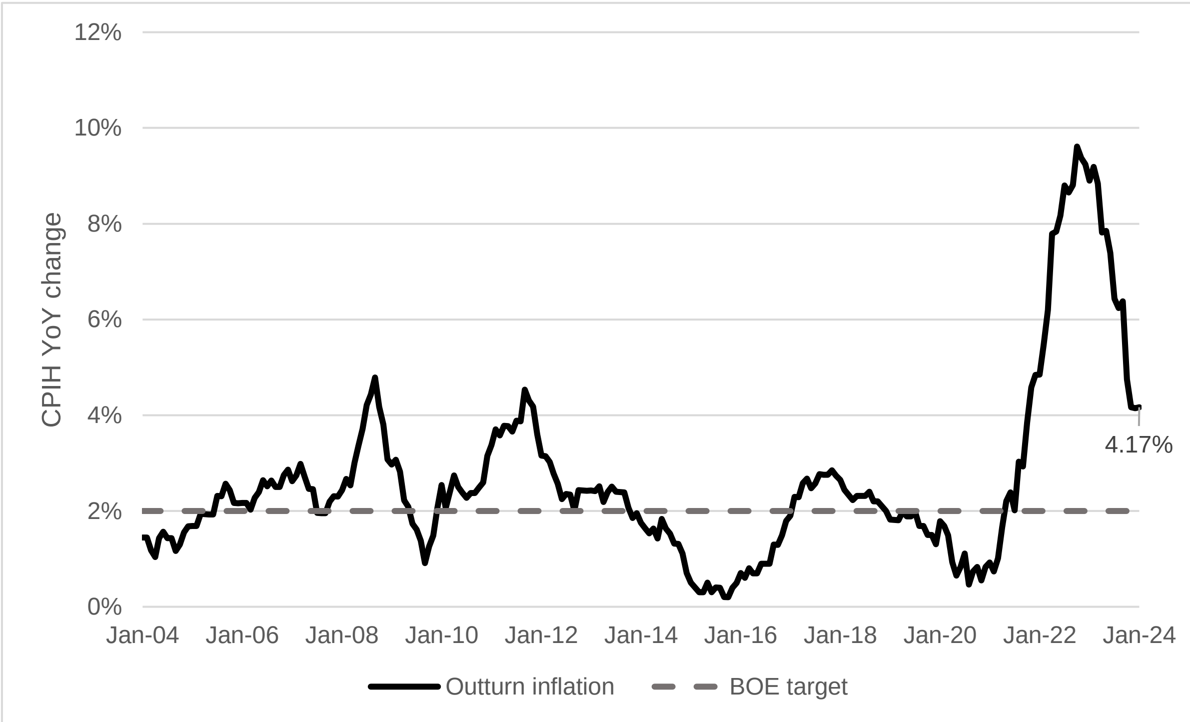
- Is the underlying intent to simply find a higher forecast, because in Ofgem's view high inflation in the past few years has produced extra returns for some companies as a result of the leverage effect, which must now be offset? We would consider this a mis-characterisation of events, because any alleged leverage effect would be a transfer of value from debt holders to equity holders.
- Or is the intent to find a better forecast, because as a result of the OBR failing to predict in advance the full effect of a range of global shocks, Ofgem now believes that OBR forecasts will no longer be reliable (e.g. because Ofgem believes that the long term inflation will be now higher going forward and that the OBR would systematically fail to forecast that?)

If Ofgem's motivation is the former, then that would amount to de facto retrospective confiscation, a step that Ofgem has already explicitly ruled out following its inflation Call for Input (CFI). This point has been extensively debated in our response to the CFI on the inflation leverage effect in the summer of 2023, and Ofgem itself has recognised the harm that such an action would impose onto the sector and consumers.

If it's the latter, Ofgem needs to show analysis to prove that the OBR forecast is not fit for purpose going forward, and demonstrate the superiority of any alternative measures it may consider instead in predicting inflation. More specifically, Ofgem needs to demonstrate that its chosen alternative will perform better at forecasting inflation, including capturing (ahead of time) unpredictable inflation events.

If Ofgem's justification for changing the inflation assumption to something higher (such as break-even inflation) is the belief that inflation is going to be structurally higher in the future than it has been in the past, for example as a consequence of the recent episode of high inflation we have just experienced, it may help to look at the longer term historic average of CPIH inflation, in order to put recent high inflation spike into context.

Figure 1 Comparison of outturn inflation to BOE target



Source: ONS, BoE

The chart shows that outturn CPIH inflation has actually been stable over a long period of time, oscillating around the 2% BoE target for CPI for the majority of the period since the BoE became independent in 1998. Taking a long run average, from 1998 to the present day, the average level is 2.4%[6]. But this of course includes the recent period of unusually high inflation. Excluding this period, the average since 1998 is actually remarkably close to 2%.

An initial review of this evidence shows that the BoE can and has kept inflation around its 2% target in normal times and over a long period of time. Only in the face of extreme and unpredictable events has inflation temporarily risen materially above the BoE's target, after which rapid corrective action has been taken to quickly lower inflation back towards policy target. CPI inflation is currently around 4%, far below recent highs, and it is therefore reasonable to believe that going forward the BoE will achieve its stated objective of returning inflation to its target 2%, in line with the OBR's latest forecast. It does not appear to us that there is a structural reason why inflation should be expected to be more than 2%, and the BoE has consistently signalled its intent to return inflation back to its 2% target.

6 https://www.historyandpolicy.org/policy-papers/papers/reforming-the-bank-of-england-to-tame-inflation-and-boost-financial-stability-lessons-from-two-centuries-of-british-financial-history

If Ofgem picks a different long-term inflation assumption, not backed up by a reputable forecast such as the OBR, then Ofgem is effectively stating that the forecasting institutions are wrong and the BoE will also fail to perform against its primary duty in the long term future. Substantial evidence and analysis would be required to back this up. Just because break-even inflation suggests a different number, does not justify making such a claim. As we explain later, break-even inflation contains price information of more than just inflation expectations.

Ofgem suggested break-even inflation without having considered other alternative inflation forecasts

We note that in addition to the OBR forecast, there are other ways to form inflation expectations that Ofgem did not discuss/evaluate in its SSMC. These are also based on forecast CPI and/or CPIH, which would avoid the need to rely on market pricing of different assets with and without inflation indexation, when as explained below, those prices may be influenced by a range of other factors, not solely inflation expectations.

First, a composite index which contains both short- and long-term inflation expectations could be looked at as a candidate. In fact, Ofgem had previously considered such an approach in ED2 (although this was in the context of the RPI-CPI wedge in this instance).[7]

To construct a 20-year geometric average, Ofgem would consider short-term forecasts from e.g. OBR or HMT which cover the next 5 years. For the remaining 15 years, one could assume that inflation will remain around 2%, in line with the BoE's target and long term forecasts, and in line with the long run evidence on outturn inflation. CPI inflation has indeed been on average, 2%.[8]

In using such a composite index, Ofgem will be able to give the appropriate weight to both short and long-term forecasts in a way which is consistent with economic reasoning.

Other credible forecasts are also available and could be used as a cross-check to the OBR CPI forecast. HM Treasury (HMT) for example collates and publishes inflation forecasts from a range of credible parties, to develop a consensus view.[9]

Also, since the BoE's main responsibility is to target CPI inflation to 2%, we consider that this target of 2% ought to be regarded as a highly reasonable long-term inflation expectation. Reliance on anything other than 2%, would require one to explain why it is considered more

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7 Ofgem (2022) RIIO-ED2 Draft Determinations – Finance Annex , paragraph 3.16; and Ofgem (2022) RIIO-ED2 Final Determinations Finance Annex, paragraph 3.11

8 For the period 1997 – 2021.

9 See for example https://assets.publishing.service.gov.uk/media/6555e714046ed4000d8b99da/November_Forecomp_-_For_Publishing.pdf

likely that the BoE will fail to perform one of its primary duties, i.e. to maintain inflation in line with its stated target in the long term.

Concerns regarding break-even inflation as a long-term inflation assumption

To move from OBR forecast to break-even inflation, Ofgem would need to show clear superiority of break-even inflation as a better forecast for future inflation than the OBR forecast. We are not aware of any current analysis presented by Ofgem that serves that purpose. In fact, we note that Ofgem itself has moved away from break-even inflation used in RIIO-1 and previous price controls in favour of OBR, since its establishment in 2010.

We set out below in principle and in practice concerns that would stem from use of break-even inflation, arising from the current Bank of England break-even inflation curve.

The nature of break-even inflation

Break-even inflation is derived from the market price differential between a nominal government bond and an RPI-linked government bond. The demand and supply of both are subject to a host of underlying economic factors -- RPI inflation expectations are one of those factors, but by no means the only one. Other factors that may affect bond pricing could include: inflation risk premium, liquidity premium, potential additional convenience premium brought by ILG over nominal gilt, and supply and demand dynamics in general which are unrelated to inflation expectations (e.g. some institutional investors are obliged to hold ILG to match their liability). The only relevant part of this differential is the inflation expectation, and it will be difficult to disentangle this element alone. It is certainly not clear why this market measure should be preferred over highly reputable economic forecasts of the kind produced by the OBR forecast.

Furthermore, if one looks back at the time when the OBR did not predict the onset of the relatively high inflation, it would appear that the contemporaneous break-even inflation was also unresponsive to these circumstances. In that regard, break-even inflation did not do a materially better job of predicting abnormal and unanticipated inflation events than the OBR, it simply produces a higher number, most likely as a result of a range of other irrelevant factors. This is not a valid justification for it to become a candidate to replace the OBR forecast. Much more work would be needed to assess the past performance of alternative sources of forecast before a case could be made to move away from OBR.

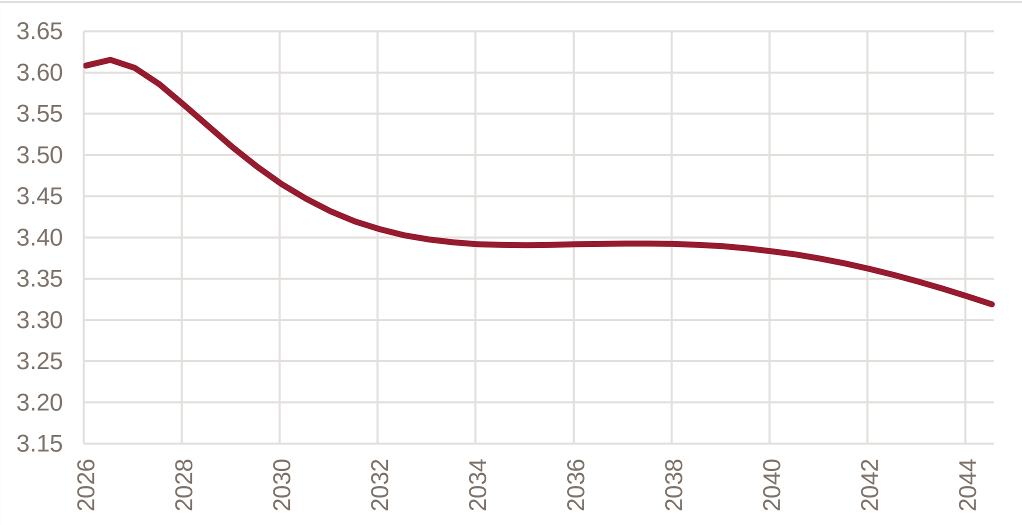
The current break-even data exhibits anomalies that undermine its reliability

In addition to the above in-principle arguments, there are also reasons to believe that currently the break-even inflation curve may not be pricing in inflation expectations accurately. We have conducted a high level analysis of the break-even inflation data available from the BoE, and our findings indicate that Ofgem should approach break-even inflation with caution.

Our analysis focuses on a natural experiment related to the RPI reform set to take place in 2030 by the national statistic authorities. The ONS has stated that as of 2030, the calculation of the RPI index will be brought in line with that of the CPIH. This would imply that the RPI figure post reform should be about 1 percentage point lower than pre-reform, reflecting the approximate wedge between RPI and CPI. This natural experiment allows us to test whether the BoE break-even inflation data accurately reflect this event.

The figure below shows the spot break-even inflation curve for various maturities.

Figure 2 Break-even inflation spot curve, 31st January 2024



Source: Frontier Analysis, Bank of England

At first glance, the break-even curve is very smooth and does not provide evidence to suggest it appropriately embodies the RPI reform in 2030. However, this may be due to the fact that these are long-dated instruments, so the effect may have been averaged out. To evaluate whether break-even inflation is pricing in RPI-reform as expected, we then examine forward implied break-even inflation. The implied rate essentially allows us to interpolate across different maturities to infer what the 1-year break-even inflation would be in each year ahead.[10] This is shown in the figure below.

Figure 3 Forward implied break-even inflation, based on break-even inflation at 31st January 2024

Source: Frontier analysis, BoE

It is clear from the chart that the forward implied break-even inflation does not show a sharp drop around the 2030 time, as one would expect given the planned RPI index reform. Forward rates do drop *before* the reform, but i) those drops cannot be attributable to the reform, and b) the drop is also not nearly large enough to reflect the circa 1% wedge between RPI and CPI.

This evidence suggests that the underlying data from which the BoE break-even inflation curve is derived contains unexplained anomalies, and should not be relied on.

10 Assuming markets are liquid, there is perfect information and there aren't any opportunities for arbitrage.

Further research is needed on the most appropriate long-term inflation assumption

Summarising the points made in this paper, it is not clear why Ofgem needs to find an alternative source for long run inflation assumptions. Particularly in relation to adopting break-even inflation, we consider Ofgem would be moving backwards towards an inferior measure of inflation expectations, that has been rejected in the past, not least because it reflects the pricing of two assets, when it is known that those prices will embody many more factors than just inflation expectations.

To properly appraise the pros and cons of the OBR forecast and of any alternative assumptions, much more work is needed, in particular to assess the reliability of inflation forecasts from the potential candidates.