GAD Comment

March 2017

Measuring price inflation

John Pullinger, the National Statistician, issued a statement in November 2016 concerning the future of consumer price inflation statistics in the UK. In his statement, Mr Pullinger confirmed that the Consumer Prices Index measure including owner occupiers' housing costs (CPIH) would be the Office for National Statistics' preferred measure of consumer price inflation from March 2017.

This article explains the main price inflation indices currently in use and the differences between them. It also discusses the implications of John Pullinger's announcement.

Why is measuring inflation so complicated?

Price inflation refers to the increase in the price of goods and services over time. The intention is to come up with a single figure representing the increase in prices across the economy. But each household consumes different goods and services. The complexity therefore arises from:

- Deciding which goods and services to include in the measure; and
- The formula used to combine different prices into a single measure.

Current indices

Without question, price inflation indices are of vital importance. Their uses are widespread, including to determine monetary policy, to calculate annual pension and benefit increases, and to calculate interest payments. The main indices used currently are:

- CPI, the Consumer Prices Index: This is currently the headline measure of price inflation, having first been published in 1996 as the Harmonised Index of Consumer Prices (HICP) to measure inflation consistently across all European Union states. CPI is the inflation measure used by the government in its price inflation target.

- CPIH is a variant of CPI including owner occupiers' housing costs (OOH): CPIH was introduced in 2013 to address the absence of owner occupiers' housing costs in CPI. The official National Statistics status of CPIH was suspended in 2014 due to quality issues with the owner occupiers' housing costs and this status has yet to be regained.

- RPI, the Retail Prices Index: RPI was first calculated in 1947 and was, for many years, the headline measure of price inflation. It is still widely used but is no longer classified as an official National Statistic due to shortcomings in its composition.

Examples of current uses:

CPI	RPI
Pension schemes – Public sector pension increases and as statutory minimum pension revaluation and indexation	Pension scheme increases where rules explicitly refer to RPI
BoE inflation target	Index-linked gilt payments
Some increases to social security benefits	Regulated rail fares

A fourth index, RPIJ, is also produced, but will cease to be published from March 2017 and is therefore not considered further in this article. In addition to these aggregate indices, the ONS publishes a number of component indices, showing movements in food prices, clothing prices, etc.

Allowing for housing costs

CPI is used as the UK's Harmonised Index of Consumer Prices (HICP).This means that it meets a set of minimum standards used across EU member states in order to facilitate the comparison of price inflation in different countries. There has not yet been agreement on a suitable approach for including housing costs across all EU member states and so many owner occupiers' housing costs are excluded from CPI.

The ONS has therefore introduced the CPIH index, a variant of CPI including owner occupiers' housing costs. These owner occupiers' housing costs currently make up 16.5% of CPIH. In CPIH, such costs are measured using an approach known as 'rental equivalence', whereby the rent paid for an equivalent house rented in the private sector is used as a proxy for the costs faced by an owner occupier. In other words, owner occupiers' housing costs are assessed by answering the question: "how much would I have to pay in rent to live in a house like mine?". The rationale provided by the ONS for this approach is that "…rental equivalence allows us to address the problem that a house is both an asset and a place to live. This approach essentially allows us to separate the 'housing services' element of a house, as measured by the equivalent rent, from its asset price. We can then focus measures of inflation on the changing price of those 'housing services'."

While RPI also includes housing costs, it incorporates them using a different method, referred to as a payments approach. Another significant difference between RPI and CPI (and CPIH) is the formula used to combine prices. The weighted prices are combined in CPI and CPIH predominantly using a geometric mean (with some use of the arithmetic mean) whereas the RPI uses the arithmetic mean to combine prices at the first stage of aggregation. Even if everything else was identical this would cause the different indices to produce different results.

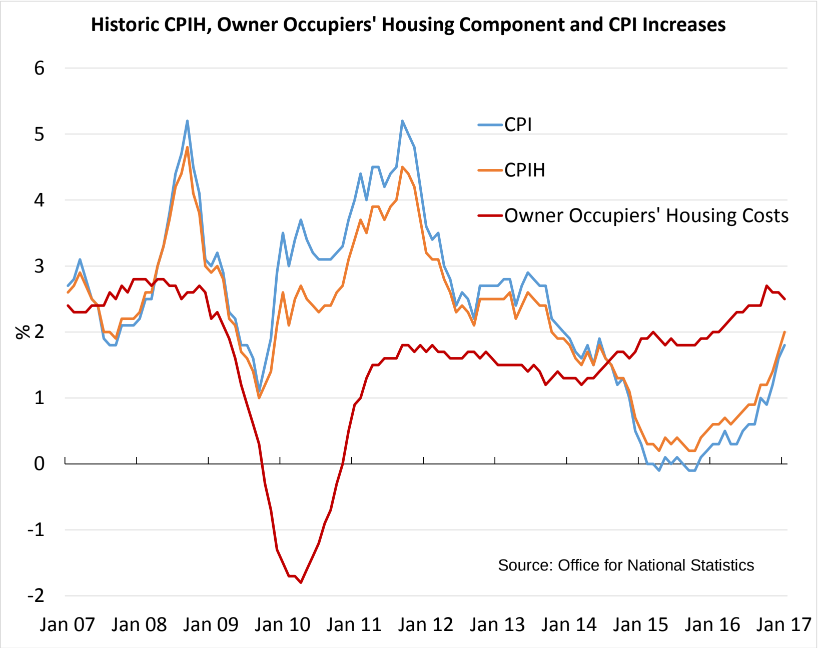
Future inflation expectations

As there is no single measure of price inflation, when considering likely future increases in prices, it is necessary to be clear about which index is being modelled. The government's price inflation target of 2% a year is by reference to the CPI measure.

GAD's long-term view is that RPI will exceed CPI by 1.15% a year on average. This is a neutral assumption, i.e. an assumption with no deliberate bias added, where it is intended that the chance of our assumption ultimately being too low is the same as the chance of it being too high. Broadly speaking, around 0.9% a year of this difference is due to the different formulae used in the composition of the indices and around 0.25% a year is due to other differences, including the different treatment of housing costs.

Therefore, if the government price inflation target of 2% a year on a CPI basis were to be borne out in practice over the long-term, we would expect RPI increases to average 3.15% a year. This view considers the expected average position over the long term. Over specific periods the differences will vary, with CPI increases sometimes exceeding RPI increases.

Considering how CPIH and CPI will move relative to one another is perhaps more challenging. In the long term one might assume that, as with higher expected house price growth in RPI, rental price growth may cause CPIH to exceed CPI. However, there is uncertainty as to how this new rental price index will behave and historically it has shown lower growth than that which might have been expected from sources such as the Family Resources Survey. Although currently CPIH inflation is higher than CPI, low rental price growth or high general price inflation (perhaps driven by the depreciation in sterling) could see CPIH fall below CPI. The graph to the right shows how CPI and CPIH have increased over the last ten years.



Use of the indices

Many commentators have speculated about possible consequences of the National Statistician's November 2016 statement, including whether the government's inflation target and social security benefit upratings may in future change to CPIH.

The November 2016 statement was a continuation of previous related developments. The review of UK consumer price statistics by Paul Johnson published in January 2015 concluded that: "CPIH provides a good estimate of price changes across the economy. It should be the main headline index produced by ONS." A 2015 consultation on consumer prices by the UK Statistics Authority and John Pullinger's public letter to the Chair of the UK Statistics Authority in March 2016 signalled these changes also.

However, CPIH is not without its critics. The differences between inflation indices described earlier in this article mean that it is necessary to consider which index is most appropriate for the specific purpose under consideration - different indices make different assumptions about the consumption of goods and services. For these reasons the ONS is also continuing to look at developing an "Index of Household Payments" which would better reflect costs as understood and experienced by the household. They are continuing to develop their work in this area with the first experimental publication of an index due by the end of 2017.

In some cases, the requirement to use CPI is set out in legislation and therefore cannot be changed without the approval of Parliament. The fact that RPI is still widely used despite it no longer being classified as a National Statistic demonstrates the extent to which specific indices can be required to be used in a wide range of contexts.

Recent developments do, however, provide an indication that over time, greater weight might be placed on CPIH or other indices than is currently the case. It also provides a reminder that, over time, the composition and calculation of price inflation indices do change.

In summary, when considering the outlook for future price inflation, it is necessary to take into account which specific index is being referred to, and to recognise the potential uncertainty in the future calculation of these indices, as well as in the underlying inflation being measured.

If you would like to discuss any of these issues in more detail or have any questions please email christopher.bull@gad.gov.uk or get in touch with your usual GAD contact.

Email: enquiries@gad.gov.uk Telephone: 020 7211 2601
For details of our management team and office address please visit: www.gov.uk/gad

Any material or information in this document is based on sources believed to be reliable, however we cannot warrant accuracy, completeness or otherwise, or accept responsibility for any error, omission or other inaccuracy, or for any consequences arising from any reliance upon such information. The facts and data contained are not intended to be a substitute for commercial judgement or professional or legal advice, and you should not act in reliance upon any of the facts and data contained, without first obtaining professional advice relevant to your circumstances. Expressions of opinion do not necessarily represent the views of other government departments and may be subject to change without notice.

QAS Institute and Faculty of Actuaries Quality Assurance Scheme