Measuring Inflation as Households Experience it

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What is inflation? The famous economist Roy Harrod (1900-1978) defined it as "the name of that state of affairs in which all or most prices are continually rising".

But that doesn't tell us how to measure it. Any expert knows that there are many ways to measure it.

As some readers will know, in the 1990s John Astin – one of the authors of this paper - was in charge of the Eurostat team which was responsible for developing the EU Harmonised Indices of Consumer Prices (HICP). This was intended initially to facilitate the inflation test for countries that were candidates for the euro, so that when two countries' inflation rate was, say, 4.5%, it was clear that they were facing the same degree of inflation; they were measuring it in more or less identical ways. Later it was to become a tool for the management of the euro zone by the ECB (European Central Bank).

The UK government decided in 2003 that the HICP (now known in the UK as the CPI) should be the target inflation measure for the Bank of England - fine! At that time, the main index used for purposes such as uprating pensions, wages, and so on was the RPI (Retail Prices Index) which had originally been designed for these types of uses (as had consumer price indices in most countries). However, in 2010 the UK government decided the RPI should be replaced as the main inflation index for public sector use by the CPI (HICP). Of course John was pleased that his "baby" had achieved adulthood - but it was obviously not the best index to be used for most indexation purposes. Then, changes made to the way clothing prices were collected reacted badly with the formulae used in the RPI, which began clearly to overestimate inflation, resulting in it eventually being deprived of "national statistic" status and its use discouraged – although its use was, and is still, widely embedded in contracts. In 2030 the RPI will effectively turn into a derivative of CPI.

All of this led to both authors separately (we did not know each other at the time) working from 2014 on proposals for a new household-oriented index.

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We both felt there was a clear need for an index that measured inflation as households actually experienced it – or at least as close as possible. We realised we were both thinking along the same lines and in 2015 we joined forces to develop the ideas for what we eventually called the HII (Household Inflation Index).

It took a while for our ideas to be accepted in official circles, but the ONS decided it was useful and important, and started gradually to publish the new index (re-named HCI - Household Costs Index) on an annual experimental basis. Importantly HCIs for different household groupings – for example by income deciles or working age vs retired – were also published.

With the recent public interest in inflation measures, the ONS have announced that from around September this year they will be publishing the HCIs quarterly. Our hope and expectation is that this will become monthly, and that the HCI can eventually replace the RPI. The HCIs – and not the HICP/CPI - could – and should - be used for such things as updating pensions, wages etc. as well as being the standard national measure of inflation regarding food, clothing and all the goods and services that households buy.

So, what are the differences between the HCI and the CPI/HICP? Bear in mind that the aim of HCIs is to measure inflation as closely as possible to what households actually experience:

The HCIs :

(a) are notionally on a payments basis- although acquisition is used in practice where the two are not very different;

(b) are weighted on a household (democratic) basis, as opposed to a "plutocratic" basis – a household index should give equal weight to every household regardless of the level of income or expenditure;

(c) include interest payments (including mortgage interest);

(d) include student loan repayments (in the UK);

(e) use gross insurance premiums - rather than net premiums which exclude the value of claims paid;

(f) include all housing-related payments made by owner occupiers, including, we believe, at least some elements of capital payments;

(g) are on a "national" basis, excluding payments by foreign visitors and including, as far as possible, payments by residents when abroad. (Macroeconomic indices like the HICP are calculated on a "domestic" basis, including expenditure by foreign visitors and excluding spending by residents when abroad.)

Table 1 summarises these differences

Table 1: Differences between HCIs and CPI/HICP

	HCIs	**CPI/HICP**
Timing	Payment (in principle)	Acquisition
Weighting	Democratic (household)	Plutocratic (expenditure)
Interest payments	All included	Excluded
Student loan repayments	Included	All tuition fees included when due
Insurance premiums	Fully weighted	Net weight only
Owner occupied housing	All housing related payments (we believe this should include at least some capital payments)	Minor repairs only (net acquisition method to be added to HICPs)
National or domestic	National basis (in principle)	Domestic basis

We now turn to two other countries, who also publish household indices – Australia and New Zealand. As far as we are aware these are the only two other countries who explicitly publish household indices of the type we describe but please do let us know if there are others.

Table 2 compares the household indices of the three countries.

Table 2: Household indices of UK, Australia and New Zealand

	UK	**Australia**	**New Zealand**
	Household Costs Indices (HCIs)	**Selected Living Costs Indexes (SLCIs)**	**Household living-costs price indexes (HLPIs)**
Household groups	19 groups plus total	4/5 groups only	13 groups and total
Timing basis	Payment	Payment	Payment
Weighting	Democratic	Plutocratic	Democratic
Interest payments	Mostly included (all in principle)	All included	All included
Insurance weights	Gross	Gross	Gross
Owner occupier costs	Mortgage interest, all payments other than capital costs*	Mortgage interest	Mortgage interest payments indexed by house prices
Taxes related to properties	Included	Included	Included

* The current plan is to include these in a separate derivative index

All three countries use a payments approach, at least in principle. Two use democratic (that is household) weighting.

All three countries include interest payments made by households while insurance premiums have full weight. Importantly we all develop these indices for different groups of households since the experience of different household types is a key reason for developing household indices.

So while we all developed these indices separately, there is a lot of consensus between us on how a household index differs from a standard consumer price index. The fact that we ended up with so much similarity of approaches is telling.

One area we do not – or not yet – have an agreed approach on is the vexed issue of owner occupied housing. Although we all include mortgage interest payments, the authors believe that at least some part of capital payments needs to be included. The arguments for this are set out fully in our recent paper listed in the references.

But now let's turn to the question of why we need household indices. These charts (which currently only go up to the end of 2021) give one answer.

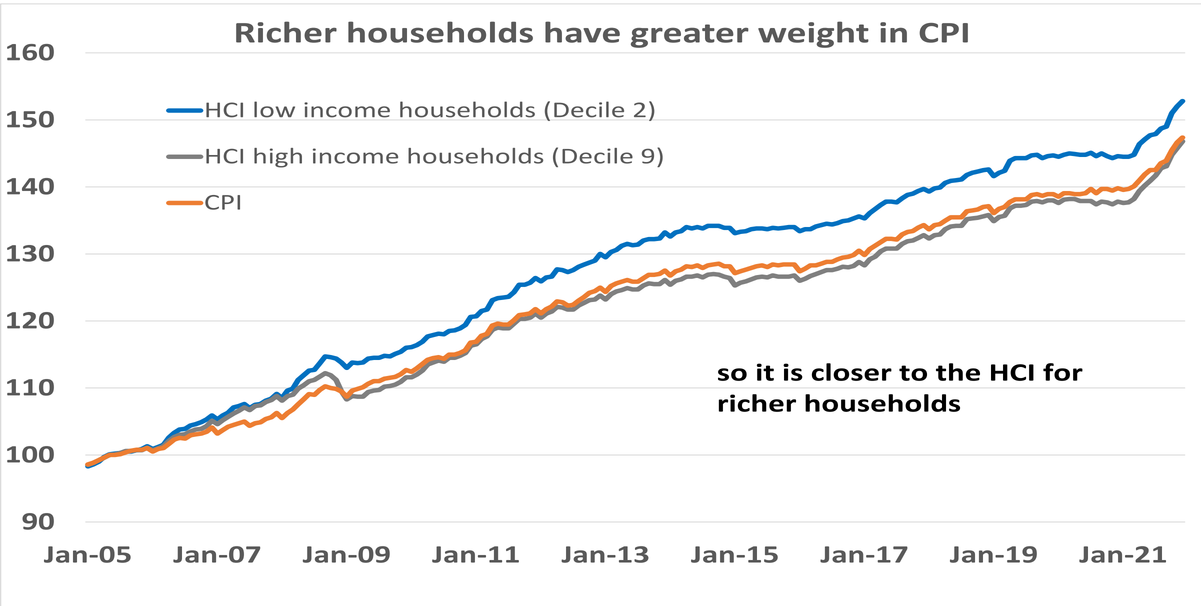
In 2022 and, currently, in 2023 we have had very high inflation in the UK. Of course, we are not alone in that. Food and energy prices in particular have increased rapidly. You do not need to think very hard to realise that in these circumstances lower income households will be particularly affected due to the high proportion of energy and food costs in their overall expenditure.

But what happened in the past when inflation was modest?

The chart below shows that lower income households (we are using those in the second decile), represented by the blue line, have experienced a higher rate of inflation over the period shown than richer households - those in the 9th decile – represented by the grey line. Specifically this happened over the period 2008 to 2014 – it can be seen that the gap widened then and was then broadly stable for the next few years.

Next, consider the CPI/HICP, represented by the orange line. It can be seen that this is very close to the line for richer households and below that for poorer households.

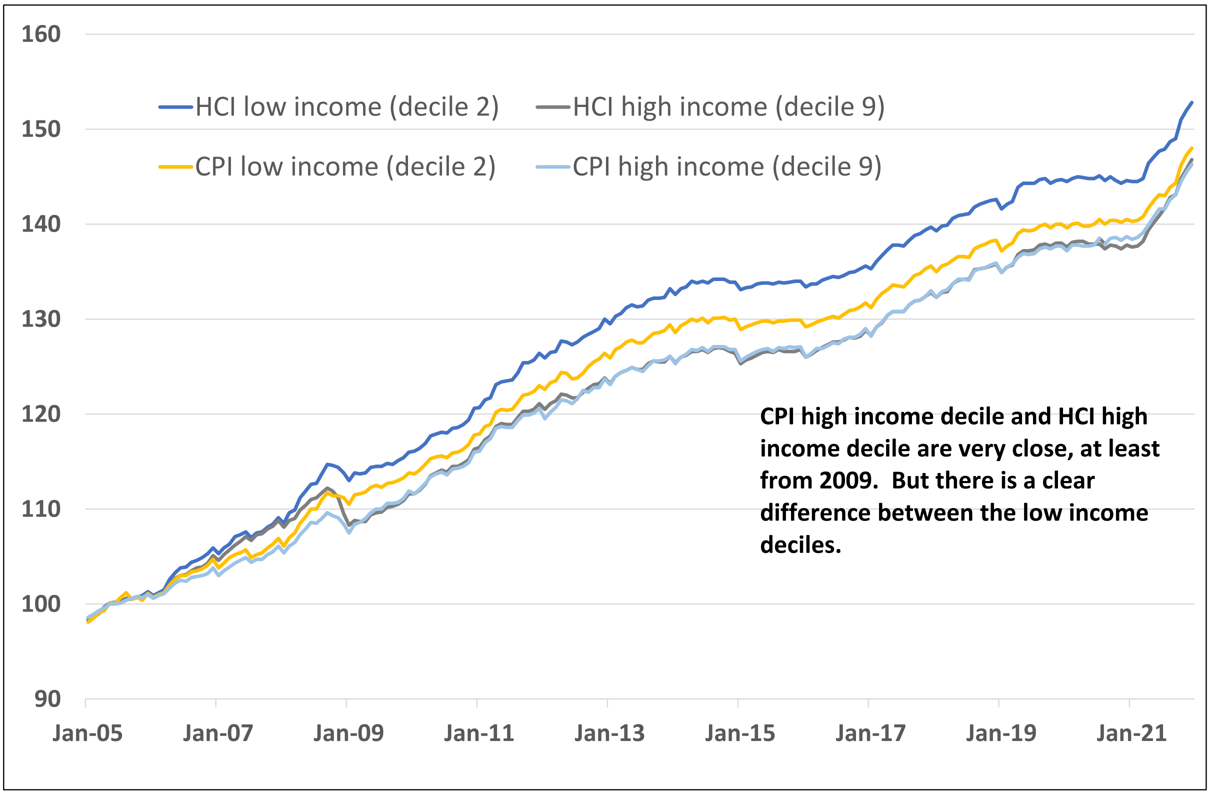
Chart 1: CPI/HICP vs HCIs for High income and Low income households
(indices, 2005 = 100)



Source: ONS

Could the CPI if available for income deciles show this? As it happens the ONS has also periodically published CPI broken down by income deciles. Consider the following chart.

Chart 2: CPI/HICP and HCI for low and high income deciles (indices, 2005=100)



Source: ONS

For most of this period the high income decile lines for CPI – light blue – and the HCI – grey are so close they can hardly be distinguished. But the lines for CPI low income decile - orange – and HCI low income decile – dark blue - are clearly different.

For policy makers who need to understand, in particular, the pressures low income households are experiencing, this insight is helpful. For households living close to the edge a small difference between the rise in prices and the rise in incomes can cause real hardship.

We hope that this paper gives an idea of what household indices are and why they are needed. The original purpose of many consumer price indices was primarily for use in wage bargaining. Then the rise of inflation targeting in the

1990s required a series focused on that need. But it is important – indeed crucial – that household experience is not neglected.

There remain some points where further development or discussion is needed. How to deal with owner occupier housing costs is one. Longer term questions include dealing with quality change – is it right to aim to measure all items at constant quality even when the unimproved product is no longer available? Another point is to look not just at the weights that are appropriate to different household groupings but at the different brands they might be more or less likely to buy or which outlets they are more likely to shop at.

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