FEATURE

Measuring inflation

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SUMMARY

Consumer price indexes measure the change in prices charged for goods and services bought for consumption by households in the UK. The Office for National Statistics publishes two main measures of consumer inflation, the consumer prices index (CPI) and the retail prices index (RPI).

The latest UK inflation figures, for May 2008, show the CPI rising by 3.3 per cent and the RPI rising by 4.3 per cent. It is clear from reports in the media that people are seeing big rises in the cost of food and fuel and are questioning the accuracy of official CPI and RPI rates. The consequence has been that newspapers are producing their own, selective, cost of living indexes, undermining confidence and trust in the official figures. This article explains how the official figures are compiled and looks at why some people think that the estimate of inflation should be higher.

The Government inflation target uses the consumer prices index (CPI); the Bank of England sets interest rates to meet the target. The CPI uses methods that are consistent across the European Union; this allows inflation comparisons to be made between European countries.

The retail prices index (RPI) is the more familiar measure of inflation. Payments such as tax allowances, state benefits and pensions, and index-linked gilts are often revised in line with this index. The RPI provides estimates of inflation from 1947 onwards, enabling analysis of price changes over a longer period of time.

There are several key differences between the CPI and the RPI:

- there are differences in the goods and services represented in the basket. For example:
  - the CPI excludes council tax and mortgage interest payments which are included in the RPI
  - the CPI includes some charges for financial services that are excluded from the RPI
- the way prices are combined using people's spending patterns are different:
  - the CPI represents a broader population than the RPI – the RPI excludes households with the top 4 per cent of income and excludes some pensioners
  - the CPI produces weights for items in the basket using a breakdown of household expenditure taken from the National Accounts. The RPI uses the Expenditure and Food Survey (EFS) to calculate weights
- different mathematical formulas are used for combining the prices collected for each item in the basket. The formula effect means that the average price for each item in the CPI is always lower than or equal to the average price for the same item within the RPI

How are the CPI and RPI calculated?

The Office for National Statistics (ONS) collects 120,000 prices each month from a wide range of shops across the UK (including those in shopping centres, out-of-town retail outlets, supermarkets and corner shops) and from the internet. These prices represent the goods and services typically bought by households. Price collectors visit shops in 141 locations to collect over 100,000 prices. This ensures that variations in price across the UK are captured.

For some goods and services, the same price is charged throughout the country, for example, TV licences and purchases from catalogues. These prices are collected centrally and account for over 12,000 prices.

The price collectors visit the same shops each month to collect the prices of identical products to ensure they are comparing like for like.

As a large number of prices are collected for each item, the sample contains a broad representation of brands. For example, over 130 prices are collected for a box of 80 tea bags and these include all the main brands as well as supermarkets' own brand tea bags.

Prices are collected for a representative basket of around 650 goods and services that households spend money on. Households spend different amounts of money on different items. For example, the spending pattern of a single pensioner may be different from that of a couple with two children. To reflect this, products are grouped together and a weight is allocated to represent the appropriate share of household expenditure.

The weights for the RPI are derived mainly from the EFS, which is conducted by ONS. The CPI weights are based on expenditure of all private households in the UK, foreign visitors to the UK and residents of communal establishments such as university halls of residence. This information is taken from household expenditure figures in the National Accounts which are also, in part, derived from the EFS.

The EFS samples over 6,000 households from all over the country. Households record every purchase they make over a fortnight. Details of major purchases are recorded over a longer period of time.

The items in the basket and their weights are reviewed and updated annually so that changes in household spending patterns are reflected.

Are the systems used to produce the CPI robust?

The systems and procedures used to produce the CPI are subject to an external audit twice a year, to ensure they are robust. These audits are carried out by the British Standards Institute. As a result of these audits, certification to the internationally recognised quality management standard ISO 9001 has been held since 2001. This certification has been awarded to reflect the robust, accurate, controlled procedures and supporting documentation used in the production of CPI estimates.

Does the CPI take account of special offers?

The CPI does take account of short-term price reductions. However, the index does not take account of temporary 'two for the price of one' offers nor does it adjust prices to take account of items temporarily bearing extra quantities (for example, 30 per cent extra free). The principle is that a single basket of goods is being measured and adjustment to price should only be made if the consumer wants, buys, and uses the additional quantity. In practice, this would be very difficult to assess, and so the additional quantity is not taken into account. This approach is consistent with international guidance on the treatment of special offers.

Why do people think inflation is higher?

People tend to notice when prices are rising; where prices are unchanged or even falling they make less of an impression. This is particularly so when prices rise for items that are bought regularly and often. For example, prices of foods such as bread, milk, eggs and butter, and petrol have risen strongly over the past year. Clothing prices are falling but purchases are likely to be more sporadic and the items are less comparable. Prices of electrical goods such as flat-screen TVs and computers are plummeting; these relatively large expenditure items are purchased infrequently.

Some media reports suggest that the cost of living is higher than the official figures. Typically they have calculated their own cost of living index using a small number of items and just a few prices for each. The particular brands selected do not always represent average price moves. For example, in one index, the price of tea bags was shown as rising by 67 per cent, whereas the official data, which is based on 130 price quotes covering 20 different brands, show a rise of less than 5 per cent.

The basket of goods and services used in the RPI and the CPI is based on the average expenditure across all households. As such, this basket does not represent any one particular household.

The official figures are based on average spending patterns, and people who spend relatively more on items with higher price increases, such as petrol, food and heating costs, will have a personal inflation rate that is higher than the CPI or RPI. Similarly, people who spend relatively more on items with lower price increases, or even price decreases, will experience a lower personal inflation rate (examples of such items include audio visual equipment and clothing).

The CPI and RPI measure the average change in expenditure by considering the change in price of an average basket of goods and services bought by households in the UK. This measure is not the same as the average of all individual inflation experienced by all households.

Personal inflation calculator

ONS has produced a personal inflation calculator, based on the RPI, which allows individuals to input their own spending on the main categories of goods and services and then it reassembles the RPI price indices using these expenditure patterns. This gives them an indication of their personal inflation rate. It allows them to gain a better understanding of how price changes affect them. It can be accessed on the ONS website at www.statistics.gov.uk/pic/

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