

RECENT DEVELOPMENTS IN SELECTED MEASURES OF UNDERLYING INFLATION FOR THE EURO AREA

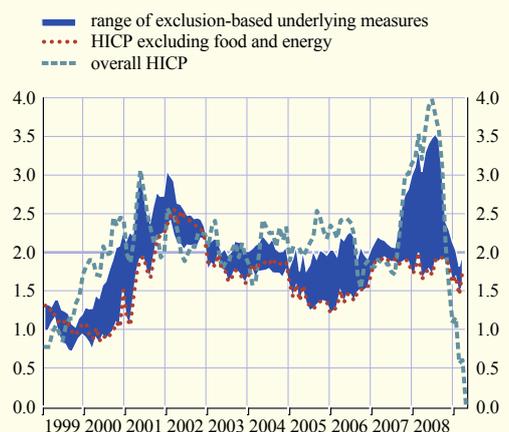
Since July 2008 the euro area has witnessed a sharp decline in the annual rate of change in the overall HICP. This decline has been driven mainly by marked falls in oil and other commodity prices. In order to look through the impact of these strong commodity price developments and focus on medium-term price trends, as well as on the nature and sources of the forces driving overall price dynamics, it is helpful to consider measures of underlying inflation. This box reviews recent developments in some commonly used measures of underlying inflation.

Various types of measures of underlying inflation have been proposed in the economic literature.¹ One frequently used set of such indicators comprises those which exclude certain HICP items. These indicators can be classified into two groups: permanent exclusion-based measures (which always exclude the same items, such as the HICP excluding food and energy) and statistical exclusion-based measures (which exclude outliers at any given point in time, such as trimmed means).²

Recently there has been significant divergence in the patterns of headline HICP inflation and exclusion-based measures of underlying inflation (see Chart A and the table). Having hit its record peak of 4.0% in July 2008, overall HICP inflation has since fallen markedly, standing at 0.6% in March and April 2009. In May 2009 it is estimated by Eurostat to have reached 0.0%. The considered measures of underlying inflation have also generally fallen from their peaks in the summer of 2008, albeit less markedly, to levels that are not particularly low from a historical

Chart A Measures of underlying inflation in the euro area

(annual percentage changes)



Sources: Eurostat and ECB calculations.

Note: The range of exclusion-based measures of underlying inflation covers the HICP excluding energy, the HICP excluding unprocessed food and energy, the HICP excluding food and energy, the 10% trimmed mean, the 30% trimmed mean and the weighted median.

1 The concept of underlying inflation, while intuitively appealing as a way to identify and illustrate longer-term price trends and the nature and sources of the forces driving headline price dynamics, has proven to be an elusive concept in practical applications. For a detailed analysis, see the article entitled "Measures of underlying inflation in the euro area" in the July 2001 issue of the Monthly Bulletin.

2 Exclusion-based measures are calculated by excluding the prices of certain individual items from the index, because they are deemed to be particularly volatile. Permanent exclusion-based measures involve the exclusion of selected HICP components, whereas statistical exclusion-based measures exclude the highest and lowest price changes. The set of goods and services prices excluded from statistical measures can therefore vary over time.

Measures of underlying inflation in the euro area

(annual percentage changes)

	2007	2008	2009 Jan.	2009 Feb.	2009 Mar.	2009 Apr.	2009 May
HICP inflation¹⁾	2.1	3.3	1.1	1.2	0.6	0.6	0.0
Selected measures of underlying inflation							
Permanent exclusion-based measures							
HICP excluding energy	1.5	2.5	1.8	1.8	1.6	1.7	.
HICP excluding unprocessed food and energy	2.0	2.4	1.8	1.7	1.5	1.7	.
HICP excluding food and energy	1.9	1.8	1.6	1.7	1.4	1.8	.
Statistical exclusion-based measures							
Trimmed mean (10%)	2.2	3.1	1.8	1.9	1.6	1.6	.
Trimmed mean (30%)	2.2	2.7	2.1	2.0	1.8	1.9	.
Weighted median	2.2	2.5	2.1	2.0	1.8	2.0	.

Sources: Eurostat and ECB calculations.

Note: Statistical exclusion-based measures exclude a stipulated portion of percentage changes in prices that rank among the smallest and largest changes for the month (in numerical terms); for example, the 10% trimmed mean excludes the smallest 5% and largest 5% of price changes from the weighted distribution of HICP items.

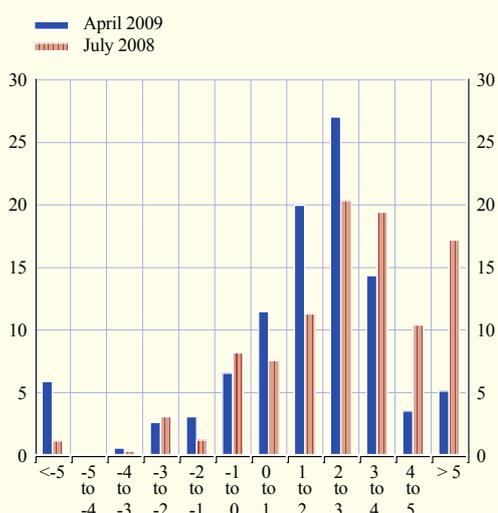
1) HICP inflation in May 2009 refers to Eurostat's flash estimate.

perspective. In April 2009 they stood within a narrow range of between 1.6% and 2.0%, thus significantly above the overall HICP inflation rate. Such a large negative gap between headline inflation and measures of underlying inflation has not been observed in the past and can be attributed to the rather unusual developments in specific components and items of the HICP, such as food and energy.

The special role of the energy and food components is best illustrated by analysing developments in the annual rate of change in the HICP excluding energy and total food (both unprocessed and processed). This measure of underlying inflation has generally marked the lower bound of the range of underlying measures of inflation. Over the course of 2007 and 2008, it was rather stable and therefore did not follow the trend of other measures of underlying inflation. This highlights the important role in overall HICP developments played by movements in processed food prices, in addition to those in energy prices. The rather similar levels of HICP inflation excluding either i) energy or ii) unprocessed food and energy or iii) all food and energy that have been observed over more recent months indicate that food price developments are currently not one of the main drivers of short-term dynamics in annual inflation but that energy prices continue to play an important role, due partly also to base effects.

Chart B Distribution of the annual rates of change of HICP items

(percentages)



Sources: Eurostat and ECB calculations.

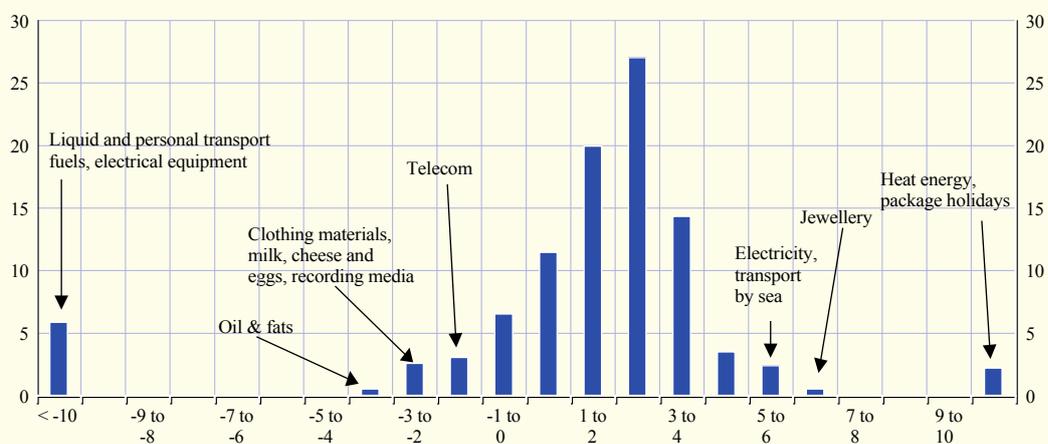
Notes: The chart shows the distribution of the annual price change in the 93 HICP items, weighted according to their expenditure share, for July 2008 and April 2009. Each bar reports the share of HICP items whose annual rates of change fall within the respective range.

Statistical exclusion-based measures symmetrically remove extreme values from the cross-sectional distribution of the HICP items. Hence, the observed decline in these measures since mid-2008, in line with that in the permanent exclusion-based measures, suggests that the cross-sectional distribution of the HICP has shifted to the left, i.e. towards lower rates of inflation. This disinflation process is evident from a comparison of the weighted distribution of the annual rates of change in all 93 HICP items in July 2008 with that in April 2009 (see Chart B). In July 2008, when the commodity price shock had its greatest impact on headline inflation, the bulk of the distribution (almost 70%) exhibited annual rates of change above 2%, with 17% running at rates above 5%. By contrast, about 14% of the weighted items exhibited rates below 0%. For the 30% trimmed mean, which excludes the largest 15% and smallest 15% of price changes from the weighted distribution, this implies that items with rates of change above 5% and all items with negative rates of change were omitted from the calculation. In April 2009 only half of the HICP items (weighted according to their expenditure share) recorded annual rates of change above 2%, with only 5% running at rates above 5%, while about 18.5% recorded rates of change below 0%. Consequently, the 30% trimmed mean for April 2009 excluded neither all items with negative rates at the lower tail of the distribution nor all items with rates above 3% at the upper tail of the distribution. Although the share of items with negative annual rates of change is currently higher than the historical average share of about 13% seen over the period 1999-2008, there is no indication of generalised price declines.

The observed shift in the distribution towards a lower inflation outcome reflects primarily the reversal of the direct impact of the past commodity price increases, as well as the gradual fading out of related indirect effects. In other words, the shift in the distribution is attributable mainly to the waning impact of relative price movements in some specific goods. A closer look at the cross-sectional distribution in April 2009 (see Chart C) reveals that the items with strongly negative annual rates of change were mainly those directly related to oil price developments (liquid fuels, which cover domestic heating oil and fuels for personal transportation). Some food items (oil and fats, milk, eggs and cheese) were also among those with annual rates of change below 0%, owing to the correction of previous increases in agricultural commodity prices and related base

Chart C Cross-sectional distribution of the annual rates of change of HICP items in April 2009

(percentages)



Sources: Eurostat and ECB calculations.

Notes: The chart shows the distribution of the annual price change in the 93 HICP items, weighted according to their expenditure share, for April 2009. Each bar reports the share of HICP items whose annual rates of change fall within the respective range.

effects. In addition, certain items, such as personal computers (PCs), audio and photo equipment (summarised as “electrical” equipment) and recording media were at the lower tail of the distribution. These items are subject to strong competition, as well as significant technical progress and quality improvements, and this is reflected in a persistent fall in relative prices. The upper tail of the distribution in April 2009 included items still affected by past increases in commodity prices, such as heat energy and electricity, as well as jewellery. However, this static analysis focusing on the April 2009 data conceals the fact that the annual rates of change in these items have declined gradually over recent months on account of easing supply chain pressure. By contrast, the outlier position of package holidays reflects only an idiosyncratic calendar effect that is related to the late timing of Easter 2009 (and the associated peak in holiday-related business) as compared with 2008. This had an upward impact on the year-on-year comparison of the prices of package holidays in April 2009. It is noteworthy that the largest part of the distribution (more than 70%) recorded values between 0% and 4% in April.

Summing up, over recent months, commonly used measures of underlying inflation have remained at levels which suggest that medium-term trends in HICP inflation are broadly consistent with the Governing Council’s objective of keeping HICP inflation rates at levels below, but close to, 2% over the medium term. Over the same period, the very low headline inflation was driven largely by the abatement of the impact of relative price movements in some specific goods. However, measures of underlying inflation cannot provide a comprehensive picture of medium-term inflationary pressures and need to be supplemented with other available data. Furthermore, they do not necessarily predict future inflation trends. Nevertheless, the fact that they currently stand at levels significantly above overall HICP inflation gives little indication of emerging generalised price declines. This is also confirmed by the distribution of the annual rates of change in the 93 HICP items for April, weighted according to their expenditure share, which shows that annual price declines are rather concentrated in some well identified groups – namely oil-related items or certain types of IT goods.