

## Box 6

## ACCOUNTING FOR RECENT AND PROSPECTIVE MOVEMENTS IN HICP INFLATION: THE ROLE OF BASE EFFECTS

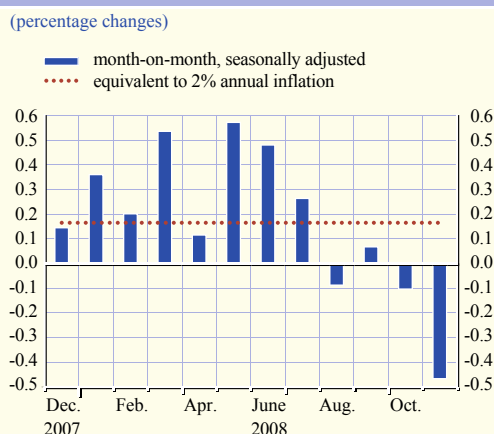
During the first half of 2008 there were strong upward movements in energy and food prices. By contrast, during the second half of the year there was a moderation in the rate of food price increases and energy prices declined substantially. These developments had a strong impact on the profile of inflation in the course of 2008, which peaked at 4.0% in June and July, before declining substantially more recently. This box illustrates to what extent, owing to so-called base effects, these developments will also affect the pattern of the annual inflation rate during 2009.

Of key importance when considering changes in annual rates of inflation from one month to the next is to what extent these changes reflect price developments in the current year (i.e. actual “news” from one month to the next) entering into the year-on-year calculation and to what extent they reflect a carry-over from price developments the previous year “dropping out” of the year-on-year rate – the so-called base effect.<sup>1</sup> There is no commonly agreed definition of a base effect. In this box a base effect is defined as the contribution to the change in the year-on-year inflation rate in a particular month that stems from a deviation of the month-on-month rate of change in the base month (i.e. the same month one year earlier) from its usual or normal pattern, taking account of seasonal fluctuations.<sup>2</sup> The contribution of such base effects to the annual headline HICP inflation rate needs to be analysed when assessing price developments and inflationary pressures.

However, identifying and interpreting base effects is not completely straightforward. It is important to note that variations in the seasonal patterns of price changes from one year to the next may induce noise in the annual rate. Furthermore, although it is possible to identify base effects in advance, current month-on-month developments can cause headline inflation to move in a different way. It should also be borne in mind that base effects do not mean that the year-on-year inflation rate is somehow distorted either upwards or downwards. The year-on-year inflation rate always correctly measures the percentage change in prices over the previous year. The base effect only helps to explain to what extent the change from one month to the next is a result of past developments dropping out of the calculation.

Looking at the recent past, Chart A shows that during the first seven months of 2008, there were strong upward pressures on inflation,

Chart A Euro area HICP inflation over the last 12 months

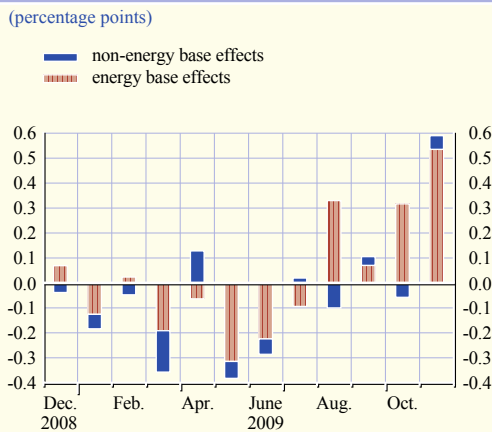


Sources: Eurostat and ECB calculations.

1 See the box entitled “Base effects and their impact on HICP inflation in early 2005” in the January 2005 issue of the Monthly Bulletin. See also the box entitled “The role of base effects in driving recent and prospective developments in HICP inflation” in the January 2007 issue of the Monthly Bulletin.

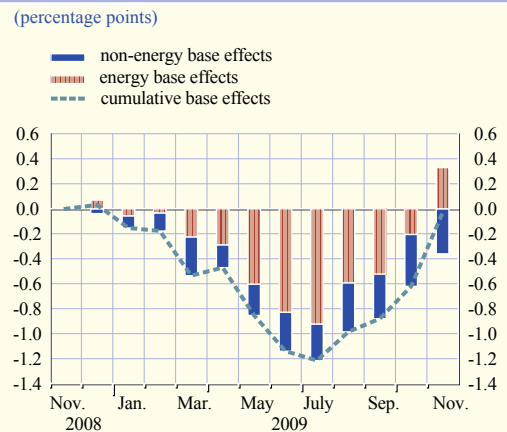
2 The method used to compute these usual or normal month-on-month changes in the HICP is clearly arbitrary. For the purposes of this box, they have been computed by taking the average (seasonally adjusted) month-on-month change for each month observed since January 1995.

**Chart B Impact of base effects on euro area HICP inflation over the next 12 months**



Sources: Eurostat and ECB calculations.

**Chart C Cumulative impact of base effects**



Sources: Eurostat and ECB calculations.

which arose mainly from developments in energy and food prices. In the second half of 2008, inflation has fallen again due to decreases in commodity prices.

### Impact of base effects on the profile of euro area inflation in 2009

Chart B shows the contribution from (energy and non-energy) base effects to the change in the annual inflation rate over the course of the next twelve months. The impact of energy base effects is strongest, although non-energy (primarily food) base effects also have an impact. Owing to the exceptionally strong increases in energy and food prices in the course of the first half of 2008 dropping out of the year-on-year rate, base effects will exert a strong downward effect in the first half of 2009 (by a cumulative 1.2 percentage points between December 2008 and July 2009 – see Chart C). Base effects will then operate in the opposite direction in the second half of 2009, exerting a cumulative 1.2 percentage point upward impact in the second half of the year up to November (owing primarily to the decline in oil prices observed in the second half of 2008). Thus, negative base effects up to the middle of next year and their subsequent reversal, in the absence of other factors, will tend to impart a U-shaped profile to the euro area inflation rate in 2009.

Overall, the extent to which these base effects will actually prevail in determining the pattern of HICP inflation in 2009 hinges crucially on a number of factors. These include developments in the more volatile components – food and energy – but also price pressures more generally. Therefore, the future path of inflation in 2009 cannot be assessed mechanically on the basis of base effects alone.