

Box 3

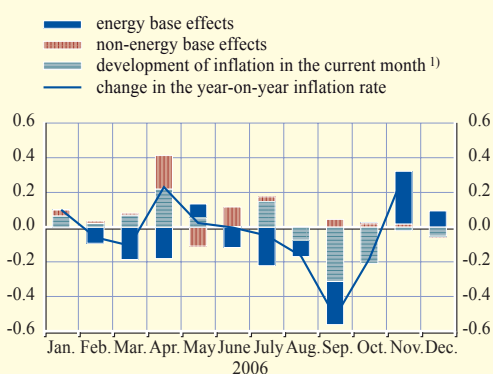
THE ROLE OF BASE EFFECTS IN DRIVING RECENT AND PROSPECTIVE DEVELOPMENTS IN HICP INFLATION

The annual rate of change in the HICP has recently shown considerable volatility: from 2.3% in August 2006, it decreased sharply to 1.7% in September and 1.6% in October, before rebounding to 1.9% in November. This profile can be largely explained by developments in energy prices, in particular oil prices. However, the changes in the annual rate of growth of the HICP in specific months have been due not only to recent short-term price developments (i.e. movements from one month to the next) but also to price volatility in the previous year, through the so-called “base effect”. The base effect can be 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 the usual seasonal pattern.¹ For some components, however, this measurement might be surrounded by some uncertainty, as their seasonal pattern may be volatile (unprocessed food prices may be influenced by weather conditions; the seasonality of package holiday prices might shift due to calendar effects), or may change over time (for instance, changes in regulations concerning discount practices during the sales period might affect the seasonal pattern of non-energy industrial goods prices in the month of January). This box reviews the role of base effects in driving the most recent HICP inflation developments and provides some insight into their prospective impact over the year 2007.

The derivation of a monthly seasonal pattern for each HICP component makes it possible to estimate the respective contributions of base effects and current developments to monthly changes in the annual rate of HICP inflation. As shown in Chart A, base effects contributed significantly to shaping HICP inflation developments in 2006.² In particular, substantial base effects, stemming from the strong energy price increases in 2005, had a favourable (downward) impact on the annual

Chart A Decomposition of the monthly changes in the year-on-year rate of change in the HICP in 2006

(annual percentage changes; percentage points)



Source: Eurostat and ECB calculations.

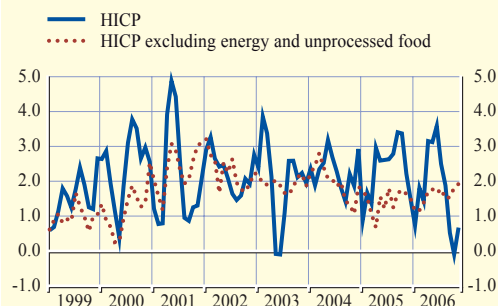
1) Calculated as the difference between the change in the year-on-year inflation rate and the combined base effects from energy and non-energy components.

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.

2 The contributions of base effects to the monthly changes in the year-on-year rate of inflation are calculated as the deviation of the (non-seasonally adjusted) month-on-month change 12 months earlier from the estimated “normal” month-on-month change. The “normal” month-on-month change is obtained by adding an estimated seasonal factor for each month to the average month-on-month change observed since January 1995.

Chart B Seasonally adjusted short-term HICP developments

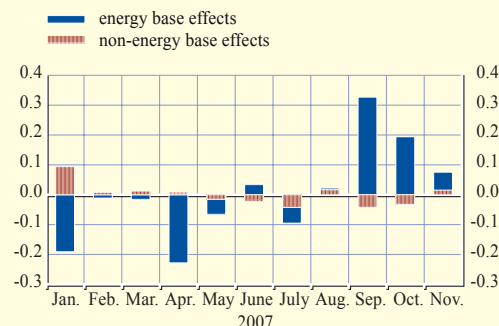
(annualised three-month percentage changes)



Sources: Eurostat and ECB calculations.
Note: The energy component is not adjusted for seasonal effects.

Chart C Contributions of base effects to the expected monthly changes in annual HICP inflation in 2007

(percentage points)



Sources: Eurostat and ECB calculations.

inflation rate for most of the year. In September, around half of the substantial decrease in annual inflation was explained by the strong increase in energy prices one year before, after hurricanes Katrina and Rita. In November, by contrast, a strong unfavourable base effect from energy prices had an upward impact on annual HICP inflation. In December, there is likely to have been a further, albeit more moderate, unfavourable base effect from energy prices. Base effects from non-energy components were, overall, relatively small in 2006, with the notable exception of the period from April to June, owing to some seasonal volatility in services prices. This was due to a shift in the timing of the spring holidays compared with the previous year, which affected package holiday prices.

To complement the analysis of annual changes in the HICP, it is useful to consider recent short-term price changes, e.g. the annualised three-month (seasonally adjusted) rate of change in the HICP.³ Chart B plots this indicator for both the overall HICP and the HICP excluding energy and unprocessed food. This measure has recently shown very pronounced volatility in the case of the overall HICP index, strongly influenced by month-on-month energy price changes. By contrast, the annualised three-month rate of change in the HICP excluding the most volatile items, energy and unprocessed food, has shown broad stability over the last two years, although it has edged up more recently.

In 2007, base effects are expected to again make a substantial contribution to inflation developments (see Chart C). The most important impact will come from the energy price developments in 2006, which will, overall, favourably influence the headline inflation rate from January to July 2007. In the second half of 2007, by contrast, the year-on-year rate of increase in the HICP will be affected by unfavourable energy base effects, which will be especially strong in September and October. Base effects from non-energy components will, on average for the year as a whole, be relatively weak in 2007. In January, however, the annual HICP inflation rate may be nudged upwards by combined base effects from non-energy industrial goods prices (reflecting deep seasonal discounting in clothing and footwear prices

³ This rate of change can be interpreted as the annual rate of increase that would result if the price increase recorded over the latest three-month period was sustained for a full year. See the box entitled "Analysis of HICP developments based on seasonally adjusted data" in the January 2001 issue of the Monthly Bulletin.

in January 2006) and services prices (notably due to transport price developments a year before). Nevertheless, the total base effect will be favourable in January, due to the above-mentioned strong downward impact of the energy base effect.

Overall, from January to November 2007, cumulated base effects will have an almost neutral impact on the change in the annual rate of increase in the HICP. Total base effects should reduce HICP inflation by 0.4 percentage point from January to July 2007, but then increase it by 0.5 percentage point from August to November 2007.

The above analysis has not only shown that base effects had a significant impact on the monthly changes in the euro area's annual inflation rates in 2006, but also indicated that such effects will also contribute to shape the pattern of headline inflation rates in 2007, when they are expected to lead to a strong upward effect, in particular towards the end of the year. The contribution of base effects to monthly changes in annual headline HICP inflation needs to be taken into account when assessing price developments and underlying inflationary pressures in the course of 2007.