Box 5

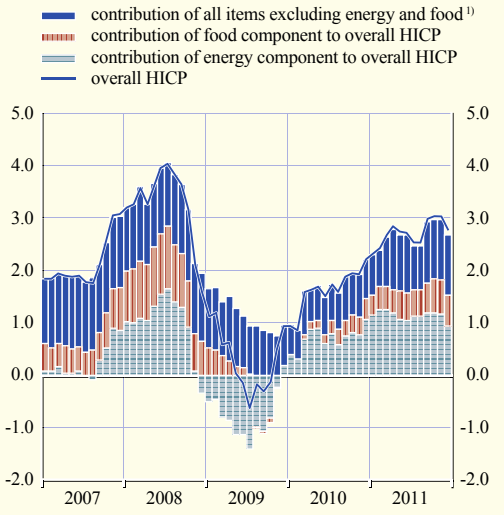
BASE EFFECTS AND THEIR IMPACT ON HICP INFLATION IN 2012

Euro area HICP inflation increased significantly in the first part of 2011 and remained at elevated levels for the rest of the year. This development largely reflected strong contributions from energy and, to a lesser extent, food prices (see Chart A). This box discusses the so-called base effects that were generated by the strong increases in energy and food prices in 2011 and how

they will affect the path of the annual inflation rate during 2012.

Base effects occur when variations in the annual growth rate of an economic indicator, in this case the HICP, are attributable to an atypical movement in the index 12 months earlier owing, for instance, to strong changes in commodity prices.[1] More specifically, they explain to what extent the change from one month to the next in the year-on-year rate of inflation results from the "dropping out" of an unusual month-on-month change from the price index 12 months earlier. In analysing developments in the annual inflation rate, it is important to distinguish the effects of these unusual month-on-month changes that took place 12 months earlier from those that occurred in the latest month (i.e. the actual "news").

Chart A Contributions to annual HICP inflation from January 2007



Sources: Eurostat and ECB calculations.
1) Includes HICP services and non-energy industrial goods.

In the light of the strong increases in energy and food prices in early 2011, base effects are expected to have a strong downward influence on the path of headline inflation in 2012. Chart B shows the expected contribution of base effects from the energy and food components to the change in the annual inflation rate from one month to the next in the period from January to December 2012.[2] In particular, it shows that the contribution of base effects stemming from energy prices is estimated to be negative in most months and particularly strong in the first four months of the year, as the sharp increases in energy prices recorded a year earlier drop out of the annual comparison. Likewise, the contribution of base effects stemming from food prices is estimated to be mostly negative throughout 2012, but in general of a smaller scale.

The cumulative impact of these base effects will influence the profile of HICP developments in 2012. Taking the base effects from the energy and food components together, it is estimated that by April the downward impact will have reached around 0.7 percentage point and will hover around this magnitude for the remainder of 2012 (see Chart C). The contribution of the base effects from food prices remains modest in absolute size, but its relevance increases over the year compared with that from energy prices.

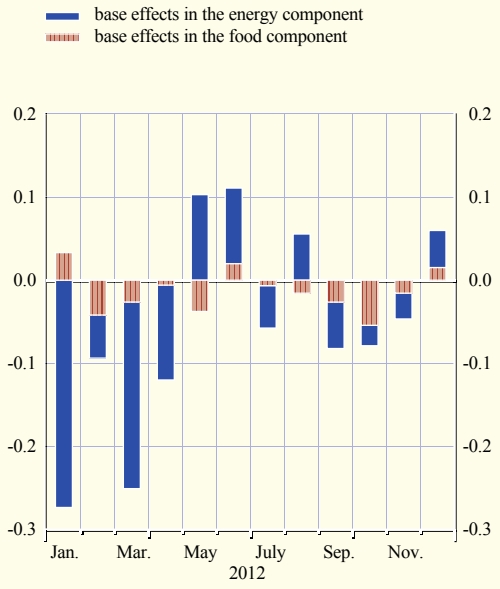
Overall, downward base effects stemming mostly from past changes in energy prices are expected to result in a downward profile of annual HICP inflation over the coming months. This assumes that there will be no strong increases in energy and food prices in 2012, which is in

1 Technically, a 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 in 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 into account seasonal fluctuations. For further details, see the box entitled "Accounting for recent and prospective movements in HICP inflation: the role of base effects", *Monthly Bulletin*, ECB, December 2008.

2 Identifying and estimating base effects is not a straightforward task. Defining a base effect as stemming from atypical influences affecting the price index 12 months earlier involves calculating the deviation in the month-on-month rate of change in the base period from its usual pattern. There is no commonly agreed way of identifying such atypical influences on inflation. For the purposes of this box, the usual pattern of month-on-month changes in the HICP is computed for each month by adding an estimated seasonal effect to the average month-on-month change observed since January 1995.

Chart B Contribution of base effects in the energy and food components to the monthly change in annual HICP inflation in 2012

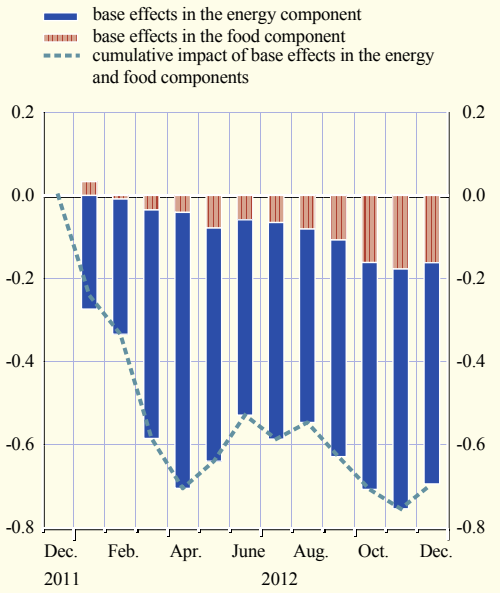
(percentage points)



Sources: Eurostat and ECB calculations.

Chart C Cumulative impact of base effects in the energy and food components in 2012

(percentage points)



Sources: Eurostat and ECB calculations.

line with the current broadly flat profile of oil future prices in the coming months. However, the profile of the annual growth rate of the HICP will also depend on the impact of changes in economic fundamentals, such as the strength of consumer demand and labour cost growth, as well as developments in indirect taxes and administered prices. This implies that it cannot be assessed mechanically on the basis of base effects alone.