

Box 6

BASE EFFECTS FROM THE VOLATILE COMPONENTS OF THE HICP AND THEIR IMPACT ON HICP INFLATION IN 2014

The energy and food components are the most volatile in the HICP basket of goods and services, as energy and food prices react quickly and strongly to commodity price and other supply-side shocks. Indeed, looking beyond any regular seasonality, the volatility of the month-on-month changes in energy prices, as measured by the standard deviation, is fifteen times higher than that in all items excluding food and energy, while that in food prices is twice as high (see Chart A). This box discusses how the changes in energy and food prices in 2013 may influence the path of the annual HICP inflation rate in 2014 through so-called base effects.

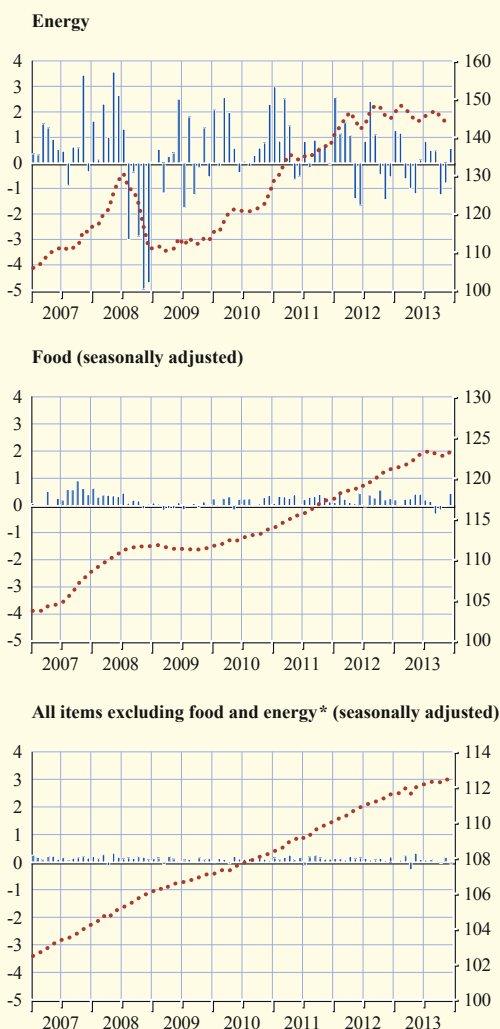
Base effects occur when variations in the annual growth rate of an economic indicator, in this case the HICP, are attributable to an atypical movement in the index 12 months earlier as a result of significant changes in commodity prices, for instance.¹ More specifically, they explain the extent to which 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. When analysing developments in the annual inflation rate, it is important to distinguish the effects of these unusual month-on-month changes that occurred 12 months earlier from those that occurred in the latest month (i.e. the actual monthly “news”).

Chart B shows the estimated contribution of base effects from the energy and food components of the HICP to the change in the annual inflation rate from one month to the next over the period from January

Chart A HICP components

(monthly percentage changes; index: 2005 = 100)

— month-on-month changes (left-hand scale)
..... index level (right-hand scale)

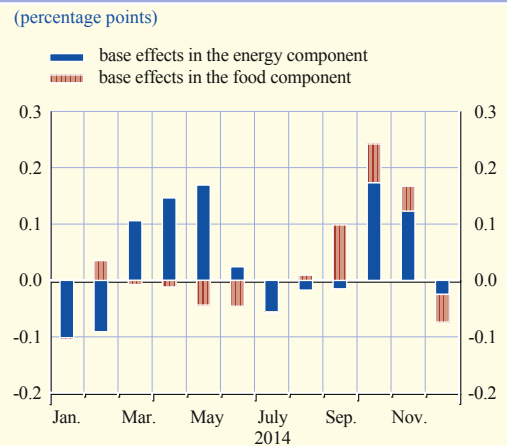


Sources: Eurostat and ECB calculations.
* Comprises the services and non-energy industrial goods components of the HICP.

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” and the references therein, *Monthly Bulletin*, ECB, December 2008.

to December 2014.² The contribution of base effects stemming from energy prices is estimated to be negative in the first two months of the year, before turning positive and remaining so in the majority of the remaining months. The base effects stemming from food prices are estimated to be considerably more modest than those stemming from energy prices, with the exception of the relatively stronger upward base effects that will materialise in September and October 2014, reflecting the sharp decrease in the prices of fruit and vegetables in the same months of 2013. In absolute terms, the average impact of the base effects for 2014 is slightly lower than in the past two years and below the average since 1999.

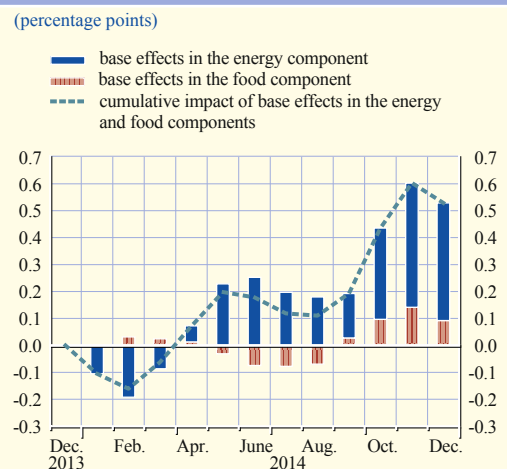
Chart B Contribution of base effects in the energy and food components to the monthly change in annual HICP inflation in 2014



Sources: Eurostat and ECB calculations.

Chart C shows the cumulative impacts of base effects on the changes in the annual growth rates of the HICP over the 12 months starting from December 2013. It is estimated that these base effects will have a cumulative upward impact of around 0.5 percentage point on annual HICP inflation over the period from December 2013 to December 2014. This will mostly reflect the contribution of the base effects stemming from energy prices, as that from food prices will remain modest in absolute terms. The impact of base effects in 2014 is factored into the Eurosystem/ECB staff macroeconomic projections for the level and pattern of HICP inflation during the year.

Chart C Cumulative impact of base effects in the energy and food components in 2014



Sources: Eurostat and ECB calculations.

Overall, upward base effects stemming from past changes in energy and food prices are one factor that will influence the profile of HICP inflation over the coming months. Additional mechanical impacts include those associated with developments in indirect tax rates that increase price levels on a one-off basis and thus drop out of the annual inflation rate after 12 months. Assuming full and immediate pass-through, changes in indirect tax rates in some euro area countries had, for instance, an upward impact on HICP inflation of, on average, 0.3 percentage point in 2013. Such increases in indirect tax rates will most likely also play a role in 2014, adding to the base effects stemming from energy and food prices. As a result of the tax impacts still at work from measures introduced in 2013, together with

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.

those from measures announced for 2014, the mechanical upward impact for 2014 is estimated to be, on average, 0.2 percentage point. Looking at the monthly profile, it is expected to be slightly stronger in the first three quarters of the year than in the last quarter, as the effects of the increase in the value added tax rate in Italy in October 2013 will drop out. However, these mechanical impacts are likely to represent an upper bound, with actual impacts depending, among other things, on firms' pricing strategies and the strength of consumer demand. In any case, beyond such mechanical impacts, future inflation developments will, of course, also depend on other factors, such as the strength of consumer demand and different cost pressures.