

The role of energy base effects in short-term inflation developments

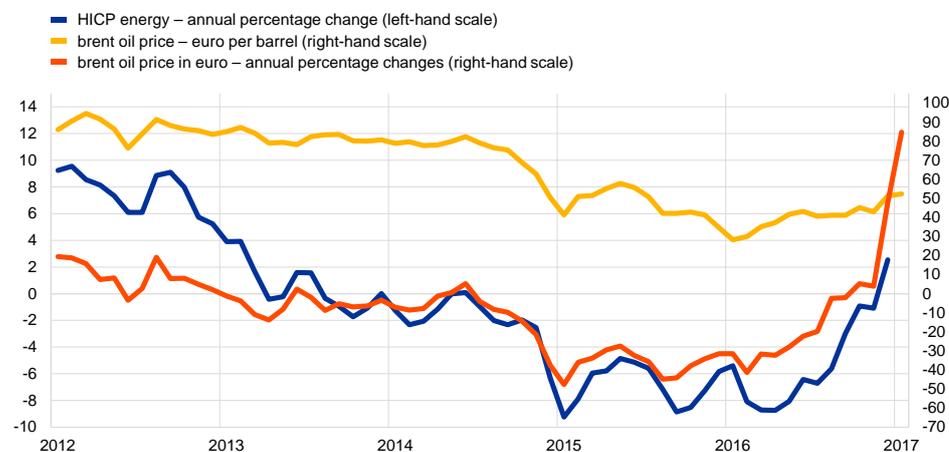
The current increase in headline HICP inflation is largely due to higher energy price inflation. HICP inflation increased to 1.1% in December 2016 from 0.6% in the previous month. This was largely due to an almost four percentage point surge in energy price inflation between November and December 2016. This surge reflected two factors: a strong month-on-month increase in energy prices and a sizeable upward base effect. This box shows that base effects will also play an important role in driving HICP inflation at the start of 2017.

The recent decision by oil producing countries to reduce supply has led to a surge in the price of oil.²⁸ Between November and December oil prices increased by about 20% in euro terms, and this was quickly transmitted to the fuel components of HICP energy inflation (see Chart A). However, most of the increase in the annual rate of change in energy prices in December 2016 came from an upward base effect. Base effects are the extent to which the change from one month to the next in the year-on-year rate of inflation can be explained by the “dropping out” from the price index of an atypical month-on-month change 12 months earlier, in this case in December 2015.

Chart A

Oil prices and HICP energy inflation

(EUR per barrel and annual percentage changes)



Sources: Bloomberg and Eurostat.

Energy base effects will have a strong impact on the development of HICP inflation in the coming months. The quantification of base effects is subject to a degree of uncertainty, as there is no single way to compute the impact of an atypical month-on-month change. In past analyses reported in the ECB’s Economic Bulletin or Monthly Bulletin, this impact has been computed by subtracting the actual month-on-month change from the typical movement (i.e. an estimated seasonal effect and a

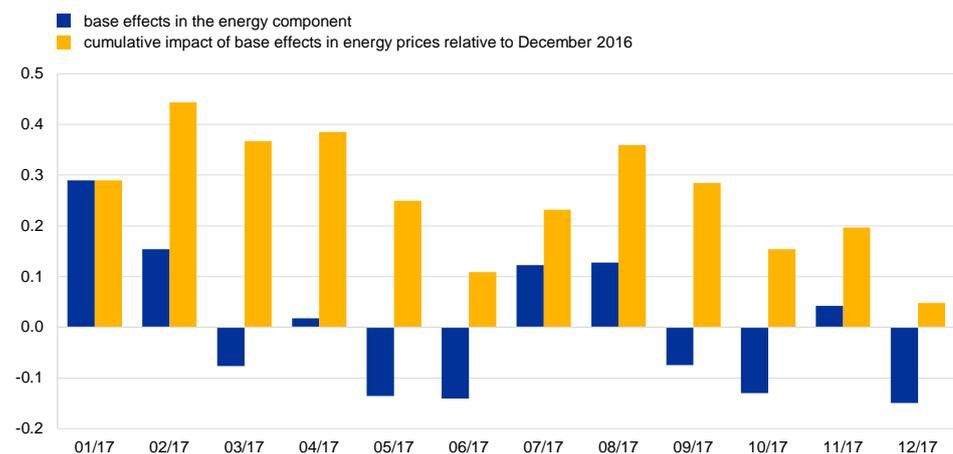
²⁸ See the box entitled “Impact of the November 2016 OPEC agreement on the oil market”, *Economic Bulletin*, Issue 8, ECB, 2016.

“trend”, quantified as the average month-on-month change since the mid-1990s).²⁹ Chart B shows the estimated contribution of base effects from the energy component to the change in the annual HICP inflation rate from one month to the next which will occur in 2017. It is estimated that this contribution will be positive up to February 2017, rather muted in March and April and negative in May and June. The second half of 2017 will also be characterised by a succession of positive and negative base effects. The cumulative impact on overall HICP inflation of base effects in energy inflation is always shown relative to a specific reference month. For example, relative to the annual headline inflation rate in December 2016, the cumulative impact on headline HICP inflation of energy base effects will amount to over 0.4 percentage point in February 2017. However, as base effects will be predominantly negative in the following months, the cumulative impact on headline HICP inflation will be negligible by December 2017.

Chart B

Contribution of energy price base effects to developments in HICP inflation

(percentage point contributions)



Source: ECB calculations.

However, when assessing the impact of base effects on likely outcomes of energy and headline HICP inflation in the period ahead, it must also be borne in mind that future annual rates of inflation will, of course, also depend on actual month-on-month changes in energy prices in the intervening period, which will, in turn, largely reflect developments in crude oil prices at the time. Clearly, the strong increase in oil and energy prices since December 2016 will have an upward impact on changes in HICP inflation in early 2017 in addition to the cumulative impact of energy base effects of over 0.4 percentage point by February 2017.

²⁹ See, for instance, the box entitled “Base effects from the volatile components of the HICP and their impact on HICP inflation in 2014”, *Monthly Bulletin*, ECB, February 2014.