

Inflation in Spain – proxied by the growth rate of the consumer price index (CPI) – has quickened notably in recent months. Specifically, in February 2017 it stood at 3%, up 4.1 pp on the April 2016 figure, the minimum rate for last year, and significantly higher than the averages for the last three years, in which the CPI posted negative rates of change.

To analyse inflation in recent years it is worth making an accounting decomposition of the annual CPI rate, distinguishing between the contributions to the overall index of, on one hand, the prices of energy products and, on the other, the contribution of other goods and services. As can be seen in Chart 1, the negative rate of change of the overall index from December 2014 to August 2016 is due, above all, to the downward trajectory of the energy component, while the contribution of the other products is positive. In this respect, the change in the overall index excluding energy moved on a slightly rising trajectory in recent years, posting increases of 0.7% and 0.9% on average in 2015 and 2016, respectively, and of 1.3% in February 2017.

The path of oil prices over the course of 2016, which feeds into the energy component of the CPI, largely helps explain the increase observed in the year-on-year rate of the overall CPI in the opening

months of 2017, and why a subsequent slowdown over the rest of the year is expected. As Chart 2 shows, the level of oil prices touched bottom in the opening months of 2016, increasing thereafter, in particular in the closing months of the year, following the agreement by OPEC and other producers to reduce supply. However, based on futures market prices, oil is expected to stabilise at levels similar to current ones over the rest of 2017 (dotted line in Chart 2). This price pattern makes for a path of year-on-year rates in 2017 that peaks early in the year, and slows substantially in the following months (see Chart 2 once again), depicting what is known as a comparison effect<sup>1</sup> (or base effect). Given the high speed of transmission of crude oil price movements to those of oil derivatives, such as petrol and diesel, this moderation would likewise affect the year-on-year change in the energy component of the CPI. The overall index, meanwhile, also ultimately follows this profile.

Chart 3 shows a decomposition of the year-on-year rate of the overall CPI which highlights the significance of the comparison

1 Banco de España (2016) “The recent rise in inflation in Spain and the short-term outlook”. Box 3. *Quarterly report on the Spanish economy*. December.

Chart 1  
CONTRIBUTIONS TO THE YEAR-ON-YEAR RATE OF THE OVERALL CPI

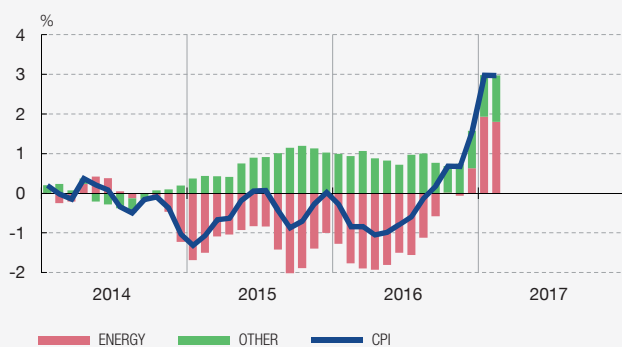


Chart 2  
OIL PRICE (a)  
Euro/barrel

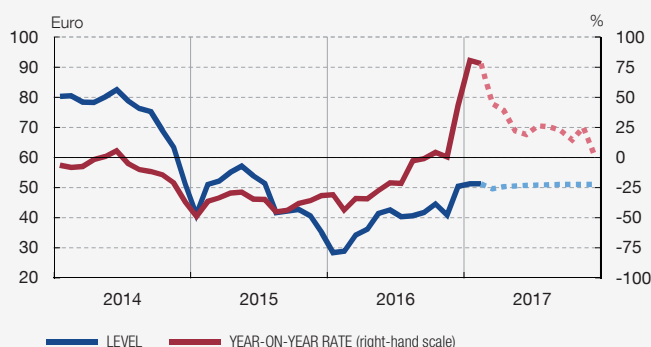


Chart 3  
CURRENT AND BASE EFFECTS ON THE YEAR-ON-YEAR RATE OF THE CPI (a)

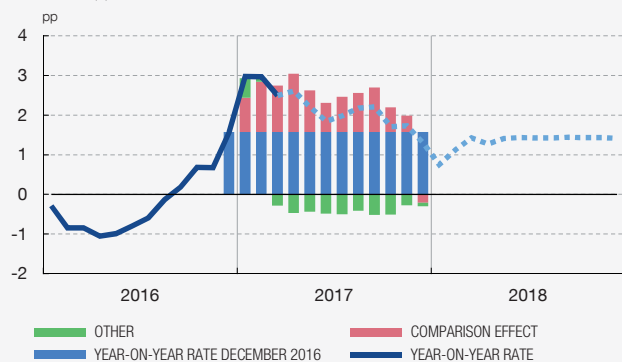
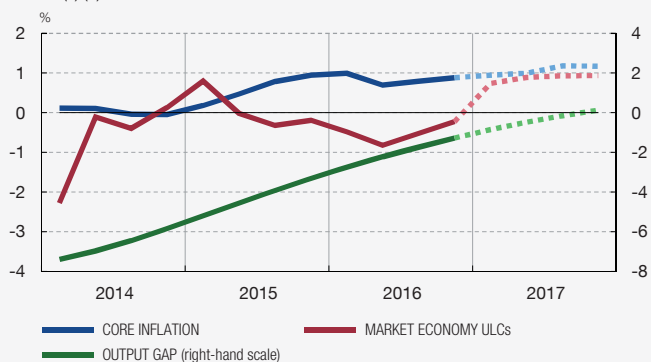


Chart 4  
CORE INFLATION, OUTPUT GAP AND MARKET ECONOMY UNIT LABOUR COSTS (a) (b)



SOURCES: INE, Reuters and Banco de España.

a The dotted lines depict the forecasts.  
b CORE INFLATION: CPI excluding energy and unprocessed food. OUTPUT GAP: percentage difference between actual and potential GDP. ULCs: unit labour costs.

effect when explaining the rise witnessed in January-February, along with the subsequent slowdown projected for the rest of 2017. In 2018, once this effect has petered out, the overall CPI is expected to stand below 1.5%.

Beyond these significant direct effects that crude oil price dynamics exert on the overall CPI, the evidence available to date for the Spanish economy suggests that their possible pass-through to the prices of non-energy products, i.e. indirect<sup>2</sup> and second-round<sup>3</sup> effects, would be limited.<sup>4</sup> In the specific case of wages, the risk of an increase in oil prices giving rise to second-round effects might be limited at this point in time. In particular, on the evidence provided by the ESCB Wage Dynamics Network<sup>5</sup>, the number of firms with indexation clauses in their collective bargaining agreements has fallen during the crisis. Similarly, the proportion of workers covered by this type of clause in agreements signed in 2016 stood at 20%<sup>6</sup>, compared with figures of close to 70% ten years ago.

In any event, although the empirical evidence to date does not reveal notable indirect and second-round effects, it cannot be

2 Indirect effects are those induced by changes in firms' marginal costs owing to a change in oil prices.

3 Consumer price changes derived from direct and indirect effects may entail revisions of agents' inflation expectations, which feed through to final prices, as a result of the determination of margins or wage bargaining.

4 In this respect, the simulations conducted with the Quarterly Macroeconomic Model of the Banco de España (MTBE) show that the influence on core inflation of changes in oil prices is very limited, which is consistent with modest indirect effects of crude oil price changes on inflation. For a fuller description of the evidence available, see Álvarez, L.J.; S. Hurtado; I. Sánchez and C. Thomas (2011), "The impact of oil price changes on Spanish and euro area consumer price inflation" in *Economic Modelling* 28 (1-2) pp. 422-431, and Hurtado, S.; P. Manzano, E. Ortega and A. Urtasun (2014), "Update and re-estimation of the Quarterly Model of Banco de España" in Occasional Paper No. 1403, Banco de España.

5 See [http://www.ecb.europa.eu/pub/economic-research/research-networks/html/researcher\\_wdn.en.html](http://www.ecb.europa.eu/pub/economic-research/research-networks/html/researcher_wdn.en.html).

6 In the first two months of 2017, the cumulative figure would be 26.8%.

ruled out that these may arise at some point, especially if there are further upward oil price shocks. In this respect, since Spain is a net oil importer, a rise in price for this commodity represents an income transfer from Spanish households and firms to foreign producers. Accordingly, any attempt through price and wage increases to avoid the adjustment to real incomes that the higher oil price entails will lead to persistently higher inflation rates, with the subsequent loss of competitiveness, employment and activity.

Against this background, the consumer price differential between Spain and the euro area has widened recently, turning positive since December last year. This differential increases in tandem with oil prices as a result of two factors. First, oil derivatives have a greater weight in the Spanish household consumption basket relative to the related products in the euro area. And further, the tax burden of oil derivatives is less in Spain than in the euro area, essentially because of the lower specific duties involved, which are of a fixed amount. This means that, in the face of a given change in the cost of this commodity, public sale prices of oil products react to a greater extent in Spain than in the euro area.

Finally, Chart 4 shows forecasts for core inflation (CPI excluding energy and unprocessed food)<sup>7</sup> for the coming months, which suggest a continuation of the very gradual growing trend of recovery posted by this indicator in the most recent period. This would be consistent with the continuation of the upturn in the Spanish economy, which would entail a progressive closing of the output gap and a reduction in unemployment during 2017, and with a modest increase in unit labour costs, under the assumption that indirect and second-round effects are moderate, in step with past patterns.

7 The CPI forecasting procedures used are described in L. J. Álvarez and I. Sánchez (2017), "A suite of inflation forecasting models", Occasional Paper No. 1703, Banco de España.

NOTE: This box was published on the Banco de España website on 30 March 2017.