quarter. Hence, the negative gap versus the EU-wide average inflation widened to -1.7 percentage points. However, June marks a turning point, the average rate being expected to witness a trend reversal once the observations impacted by the first-round effect of the 2015 and 2016 VAT rate cuts have dropped out of its calculation.

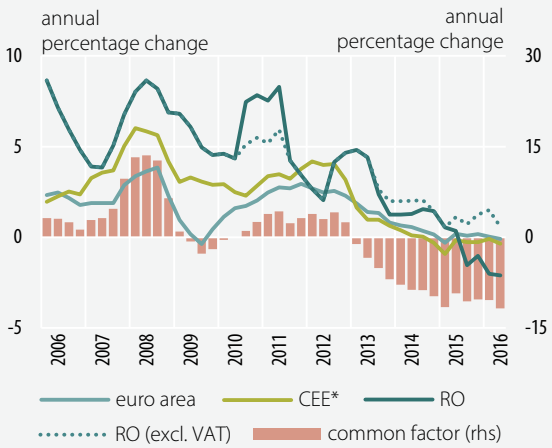
The annual rate of change of consumer prices at end-2016 Q2 stood 0.3 percentage points below the level forecasted in the May 2016 Inflation Report, basically on account of weaker-than-expected monthly changes in vegetable and fruit prices amid a plentiful supply on the EU market.

Box 1. The relevance of external factors to domestic inflation dynamics

In recent years, the international context has been marked by a steep fall in prices of main commodities to levels close to historical lows. This downtrend was relatively quickly mirrored, both directly and indirectly, by the consumer price dynamics, prompting inflation rates to decline across the board at global level. At the same time, persistently low inflation rates have raised concerns over the potential medium- and long-term effects of these shocks, given the risk of de-anchoring of economic agents' inflation expectations at this horizon.

The topic of the external environment influence on domestic developments is not new to economic literature. Specifically, the last decade saw the concept of "global inflation" taking shape against the background of globalization gradually strengthening the impact of international factors on inflation due to the growing exposure of national markets to foreign competition. This generated a vast body of literature that proves empirically that several common external factors affect inflation developments in many countries (e.g. Ciccarelli and Mojon (2005) for 22 OECD countries; Ball (2006) for the US; Mumtaz and Surico (2008) for the G7, Australia, New Zealand and Spain; Conti, Neri and Nobili (2015) and Ciccarelli (2015) for the euro area).

Chart A. Common Factor and HICP Inflation in the Euro Area and Selected CEE Countries



*) inflation in Bulgaria, Czech Republic, Hungary, Poland – aggregated based on nominal GDP

Source: Eurostat, NBR estimates and calculations

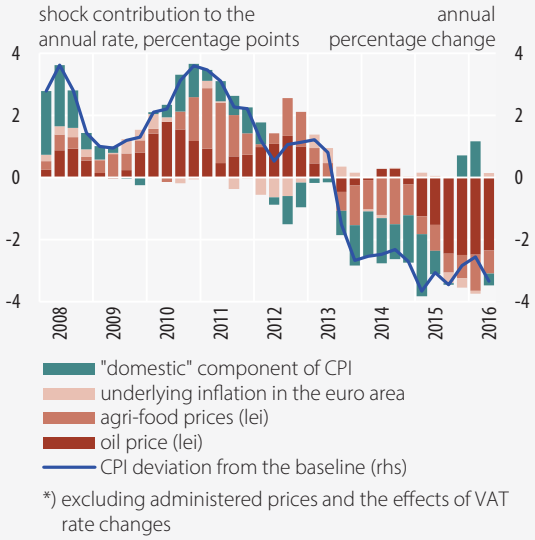
In line with the trend manifest on the international front, the annual inflation rate stood at low levels in Romania as well (even excluding the direct effects of the successive VAT rate cuts in June 2015 and January 2016), despite the significant rise in unit wage costs and the swift closing of the negative output gap in the economy. Against this background, Box 1 looks at the extent to which recent price developments in Romania owe to the direct and indirect influences of specific external shocks that have occurred in recent years.

In-house estimates confirm the existence of a common factor, which basically accounts for the similar paths of inflation in Romania, the euro area, as well as other new Member States (Bulgaria, Hungary, Poland, and the Czech Republic). Hence, the dynamics of this "common component"[7] explain approximately 60 percent of the change in the inflation rate in the countries under review. Consistent with expectations, the change in this "common factor" is highly correlated with that in commodity prices (oil price in particular). As shown in Chart A, the contribution of this common component to the slowdown in consumer price dynamics on the domestic front has gradually increased recently.

7 Calculated based on the principal component analysis.

The decomposition of the external factor's impact by shock sources and transmission channels[8] reveals a high short-term sensitivity of price changes in Romania to developments in oil and other commodity prices. Thus, the inflation rate has systematically run at lower values[9] under the unanticipated occurrence of these external influences (Chart B). The large adjustment of crude oil prices on international markets as of 2014 H2 was rapidly and strongly reflected by the CPI inflation excluding administered prices (CORE1), particularly via the fuel component. There were, however, substantial indirect effects that were passed through to adjusted CORE2 inflation via energy and transportation costs (Chart C). At the same time, an additional negative shock prompting a steeper inflation decline in the period under review stemmed from agri-food commodity prices, while the subdued core inflation in the euro area, largely associated with the persistent negative output gap, proved to make a less significant contribution to this downtrend. What is not clearly formalised in the model employed can be put down to the "domestic" inflation component, which results from idiosyncratic demand- and supply-side shocks. Hence, recent developments in this component's contribution to core inflation[10] seem consistent with the NBR's assessment of the cyclical position of the economy, namely the closing of the negative output gap in the first part of 2016.

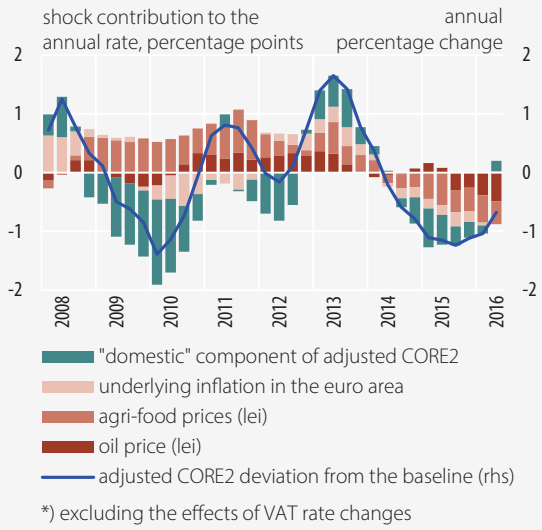
Chart B. Historical Decomposition of CPI Annual Dynamics*



*) excluding administered prices and the effects of VAT rate changes

Source: Eurostat, IMF, NIS, NBR estimates and calculations

Chart C. Historical Decomposition of Adjusted CORE2 Annual Dynamics*



*) excluding the effects of VAT rate changes

Source: Eurostat, IMF, NIS, NBR estimates and calculations

Moreover, the accuracy of core inflation forecasts included in the sample analysed[11] was tested using the VAR methodology. For the post-crisis period, forecasts were successively conditioned on the actual values of variables associated with the domestic real economy, on variables related to the external environment, and, respectively, on a set of financial conditions reflecting mainly credit cost elements. The results pointed to the model's improved predictive power as of 2014, conditioning on developments in the external environment to the detriment of other factors related to the domestic setting.

The higher relative importance of external factors in determining the path of the inflation rate in recent periods was also confirmed by a series of recursive estimates of the hybrid neo-Keynesian Phillips

8 The tool employed is a VAR model highlighting the interaction between developments in domestic prices, global commodity prices (oil and agri-food commodities), as well as a measure of underlying inflation in the euro area (HICP excluding energy, food items, tobacco and alcohol). The model was initially estimated for CPI inflation (excluding administered prices), in order to quantify the total (direct and indirect) impact, and then for adjusted CORE2 inflation, so as to identify the indirect impact of the above-mentioned shocks.

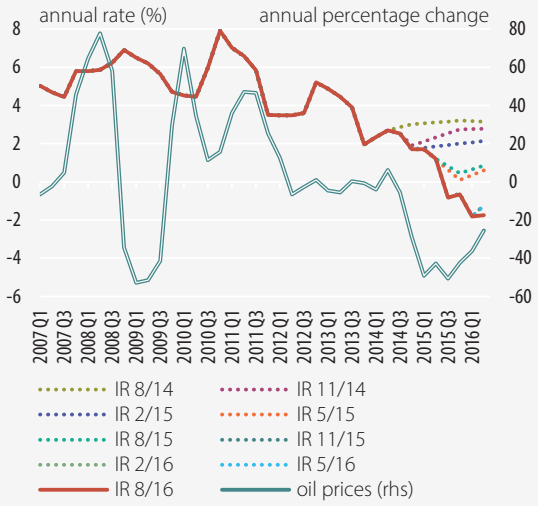
9 Compared to the trajectory projected by the model in the absence of shocks (baseline).

10 The adjusted CORE2 index reflects to a larger extent the impact of aggregate demand shocks, unlike the aggregate consumer price index, whose dynamics are often affected by severe supply-side shocks and the like (changes in excise duties, significant changes in the supply of vegetables and fruits on the domestic market, discretionary adjustments in administered prices).

11 The total sample included in the analysis covers the period from 2004 Q1 to 2016 Q2.

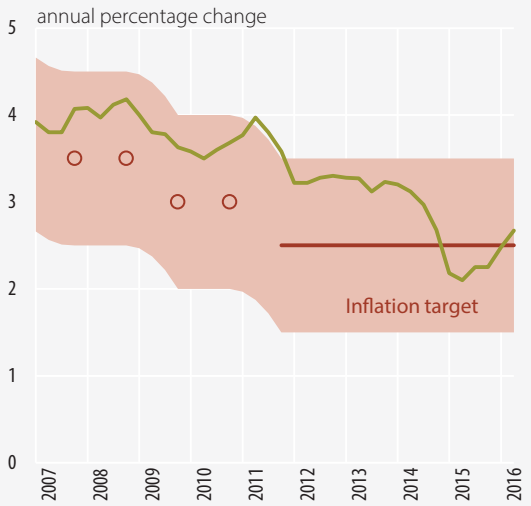
curve[12], adapted to an open economy. In analysing how the relation between inflation and its underlying factors has changed in recent years, various measures were used to reflect inflationary pressures coming from domestic aggregate demand[13] (the output gap, the gap of ILO unemployment rate, unit labour costs), as well as those stemming from the external environment (the dynamics of the unit value index of consumer goods imports, excluding fuels and motor vehicles, adjusted for the nominal EUR/RON exchange rate dynamics, the euro area export deflator dynamics or the effective external inflation).

Chart D. Inflation Expectations and Oil Price



Source: NBR survey among financial analysts, Bloomberg, NBR calculations

Chart E. Inflation Expectations 2 Years Ahead



Source: NBR survey among financial analysts

Apart from the above-mentioned direct and indirect first-round effects, the impact of the decline in commodity prices on economic agents' inflation expectations cannot be overlooked. The recurrent supply-side shocks (linked to the fall in oil, metal and agri-food commodity prices) have intensified starting with 2014 H2, favouring persistently low inflation rates and leading to the downward revision, between successive projection rounds, of the economic agents' inflation expectations, especially on the short term (Chart D). However, there are no signs that a de-anchoring of medium-term inflation expectations might occur, given that, over the 2-year horizon, these have remained inside the variation band of the inflation target since 2012 and have recently converged towards the mid-point of the target (Chart E).

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[12] Compared to the original form of the neo-Keynesian Phillips curve, the hybrid version additionally incorporates a degree of persistence based, at microeconomic level, on price adjustments linked to the inflation rate in previous periods.

[13] Using alternative measures to estimate domestic inflationary pressures gives robustness to the results. This aim was to avoid reaching conclusions solely based on the output gap, which – although an unobservable variable and, therefore, inherently subject to measurement errors – is the indicator most commonly used by the central banks to capture inflationary pressures.