



RESEARCH BULLETIN NO. 25

The role of the ECB's asset purchases in preventing a potential de-anchoring of longer-term inflation expectations

By  [Günter Coenen](#) and  [Sebastian Schmidt](#)^[1]

Longer-term inflation expectations are generally seen to be an indicator of the credibility of central banks in achieving their price stability objectives and should, therefore, remain solidly “anchored”. In this article, we argue on the basis of counterfactual analysis that the ECB's expanded asset purchase programme has been important in preventing a potential de-anchoring of inflation expectations and a further prolongation of the period of low inflation outcomes.

Following the announcement of the ECB's expanded Asset Purchase Programme (APP) in January 2015, the downward trend in both market-based and, to a lesser extent, survey-based indicators of longer-term inflation expectations in the euro area observed during the year 2014 came to a halt.^[2] According to the signalling channel of monetary policy transmission, the announcement of the APP has most probably contributed materially to the stabilisation of longer-term inflation expectations by reinforcing the ECB's commitment to deliver on its price stability mandate to keep inflation below, but close to, 2% over the medium term. Yet how severe could the consequences of a potential de-anchoring of inflation expectations have been in the absence of the APP?

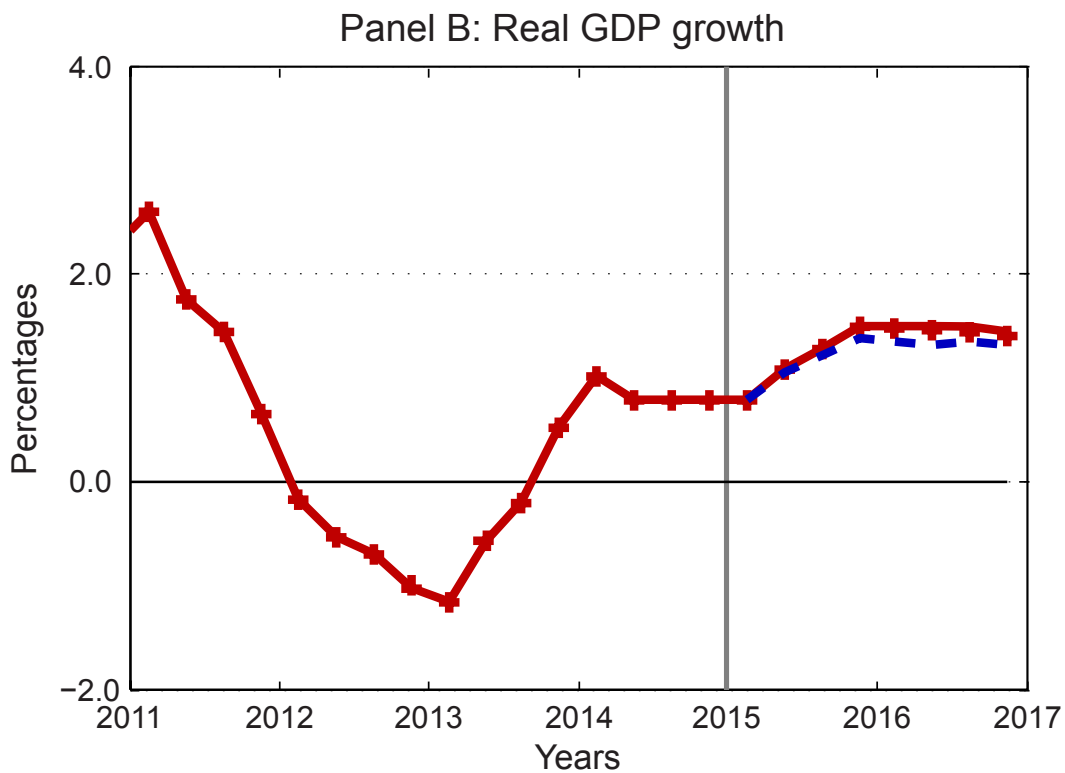
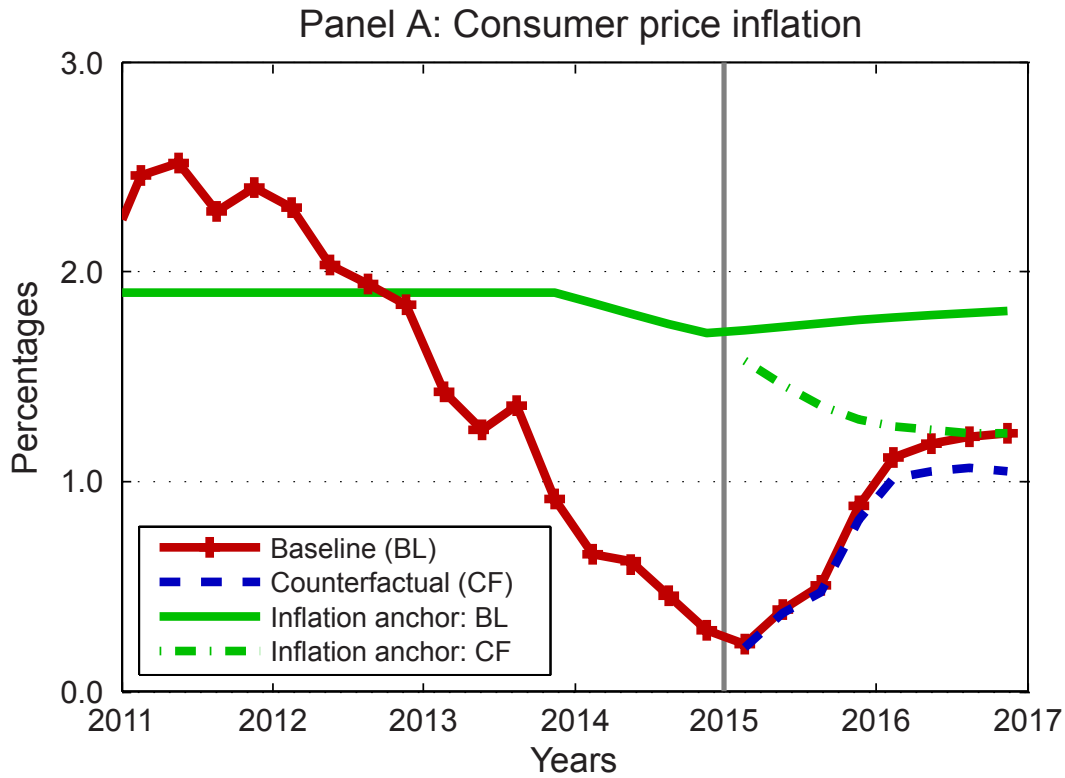
To address this question, we have employed the ECB's New Area-Wide Model (NAWM)^[3] to conduct a counterfactual simulation, with the aim of illustrating the possible impact of a further decline in longer-term inflation expectations on actual inflation outcomes. Such a decline in expectations may reflect a growing private sector concern that the central bank's ability to achieve, and commitment to achieving, its inflation objective over the medium term has weakened against the background of a prolonged period of low inflation. The counterfactual de-anchoring of longer-term expectations is modelled within the NAWM through a gradual shift in the private sector's perceptions of the central bank's inflation objective, which provides the long-run “anchor” for the formation of inflation expectations. At the same time, it is assumed that the central bank's actual inflation objective guiding its monetary policy decisions remains unchanged.

The counterfactual de-anchoring simulation is conducted relative to a baseline which represents actual economic developments until the end of 2014 and economic predictions for the following years, incorporating the anticipated effects of the APP announcement in January 2015 and its subsequent implementation. In the baseline, the gradual decline in inflation expectations observed in 2014 is captured in a stylised way by an exogenous commensurate downward shift in the inflation anchor of 0.2 percentage point. In contrast, the announcement and implementation of the APP is assumed to re-anchor longer-term inflation expectations. Accordingly, in the baseline, the fall in the inflation anchor comes to a halt at the end of 2014 and it gradually recovers towards levels closer to 2% over the following years. In the counterfactual simulation, the evolution of the inflation anchor from the beginning of 2015 onwards is instead determined endogenously. Specifically, the inflation anchor is assumed to respond in an adaptive manner to developments in inflation outcomes which run persistently below the perceived inflation objective over the simulation horizon.^[4]

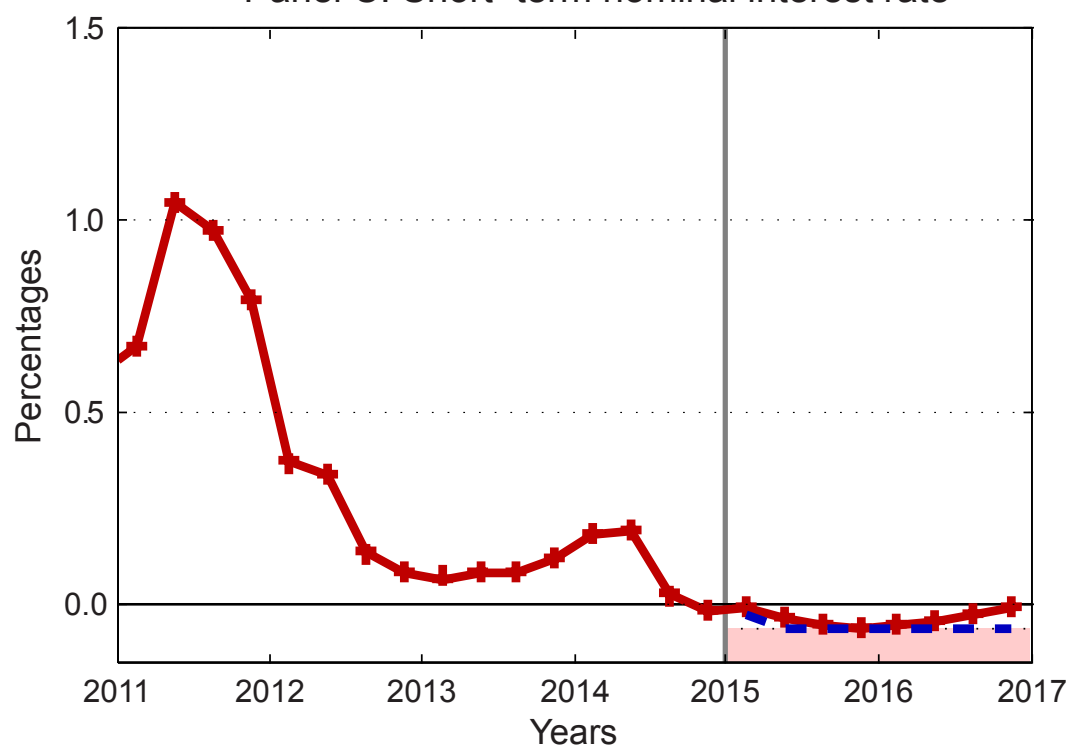
The three panels in the chart below portray the adverse consequences of the counterfactual de-anchoring of longer-term inflation expectations in comparison with the baseline paths for consumer price inflation, real GDP growth and the short-term nominal interest rate. These baseline paths were extended beyond

the year 2014 using Consensus Forecasts surveyed from financial and economic forecasters as well as market-based interest rate expectations. They are represented by the red solid lines with plus markers, while the model-based outcomes of the counterfactual de-anchoring simulation are indicated by the blue dashed lines. The green solid and dash-dotted lines in panel A depict the baseline and counterfactual paths of the inflation anchor respectively.

Chart: Consequences of a counterfactual de-anchoring of longer-term inflation expectations



Panel C: Short-term nominal interest rate



Note: The chart shows the results of a counterfactual simulation with the NAWM. In the baseline (BL), the model assumes an exogenous path for the inflation anchor, which falls 0.2 percentage point below the central bank's inflation objective of 1.9% during the year 2014, before gradually recovering thereafter. In the counterfactual (CF) simulation, the inflation anchor is obtained endogenously from a simple adaptive scheme, with the weight on lagged consumer price inflation set equal to 0.1. Consumer price inflation (measured in terms of the private consumption deflator) and real GDP growth are expressed in year-on-year percentage changes, and the short-term nominal interest rate (corresponding to EONIA) is expressed in annualised percentages. The effective lower bound on the short-term nominal interest rate is imposed at an interest rate level of -6.5 basis points (set equal to the minimum of the EONIA forward curve over the extended baseline horizon).

In the counterfactual simulation, the persistently low inflation outcomes recorded over the simulation horizon lead to a sizeable additional downward shift in longer-term inflation expectations. The forward-looking private sector responds to the decline in expected inflation rates by further reducing prices and wages, giving rise to self-reinforcing second-round effects. The resulting moderate but lasting slowing of price and wage inflation towards levels consistent with the lower inflation anchor is exacerbated by the binding effective lower bound on nominal interest rates (marked by the pink shaded area in panel C), which prevents the central bank from offsetting the further decline in inflation by lowering its policy rate. As a consequence, the real interest rate rises (and the real effective exchange rate of the euro appreciates), so aggregate demand is dampened and real GDP grows more slowly than in the baseline. Over and above the direct effects resulting from expectations, the emerging slack lowers price pressures and further hampers the adjustment in inflation towards levels closer to 2%.

All in all, the counterfactual simulation clearly illustrates the important role of the APP in forestalling a potential de-anchoring of inflation expectations by means of credibly signalling the ECB's commitment to deliver on its price stability mandate. This, in turn, is vital in order to prevent a further prolongation of the period of low inflation outcomes through second-round effects.

References

Christoffel, K., Coenen, G. and Warne, A. (2008), [The New Area-Wide Model of the euro area: a micro-founded open-economy model for forecasting and policy analysis](#), *ECB Working Paper Series*, No 944.

Gürkaynak, R., Levin, A., Marder, A. and Swanson, E. (2007), [Inflation targeting and the anchoring of inflation expectations in the Western Hemisphere](#), *Federal Reserve Bank of San Francisco Economic Review*, pp. 25-47.

^[1]Disclaimer: This article was written by Günter Coenen (Head of Division, Directorate General Research, Monetary Policy Research Division) and Sebastian Schmidt (Economist, Directorate General Research, Monetary Policy Research Division). The views expressed here are those of the authors and do not necessarily represent the views of the European Central Bank and the Eurosystem.

^[2]See the box entitled [Developments in longer-term inflation expectations in the euro area](#), *Economic Bulletin*, Issue 3, ECB, 2015.

^[3]For a description of the NAWM, see Christoffel, Coenen and Warne (2008).

^[4]For details on modelling the de-anchoring of inflation expectations using such an adaptive expectations scheme, see Gürkaynak, Levin, Marder and Swanson (2007).

European Central Bank

Directorate General Communications

Sonnemannstrasse 20, 60314 Frankfurt am Main, Germany

Tel.: +49 69 1344 7455, E-mail: media@ecb.europa.eu

Website: www.ecb.europa.eu

Reproduction is permitted provided that the source is acknowledged.

> Media contacts

Copyright 2017, European Central Bank