

Monetary policy measures in the euro area and their effects since 2014

Magali Marx
Benoît Nguyen
Jean-Guillaume Sahuc
Monetary and Financial
Analysis Directorate

This letter presents the findings of research carried out at the Banque de France. The views expressed in this post are those of the authors and do not necessarily reflect the position of the Banque de France. Any errors or omissions are the responsibility of the authors.

Inflation in the euro area has been significantly below its target level since the end of 2013. This can be passed on to long-term inflation expectations and is a reflection of the very progressive recovery. At a time when price stability was coming under threat, the Eurosystem embarked on a new phase of monetary accommodation in the summer of 2014, marked notably by massive purchases of government securities and negative policy rates. According to Eurosystem estimates, the asset purchase programme and the other non-standard measures taken since 2014 are expected to have an effect on average annual inflation of around 0.5 percentage point over the period 2015-2018 and a cumulative effect on the economic growth of the euro area of about 1.6 percentage points by 2018.

Since 2014 the macroeconomic situation in the euro area has been characterised by increased risks threatening price stability and the anchoring of inflation expectations. Inflation has continued to fall since the beginning of 2012, reaching negative values in mid-2015 and then again in early 2016. While this trend can be attributed to a great extent to the sustained collapse in oil prices, this alone cannot explain the rate of inflation excluding energy and food (core inflation) which has also declined over the same period.

Price developments have gradually moved away from values consistent with the definition of price stability used by the ECB, i.e. a rate of inflation measured by the harmonised index of consumer prices (HICP) of below but close to 2%. The decline in inflation expectations (measured by the ECB's survey of professional forecasters – SPF – and financial market indicators) suggested a risk of unanchoring expectations and the possibility of low inflation dynamics, and even deflation. This dynamic carries a risk of a deflationary trap such as the situation experienced by Japan from 1995 to 2013, and even a risk of price depression.

The Eurosystem's threefold response

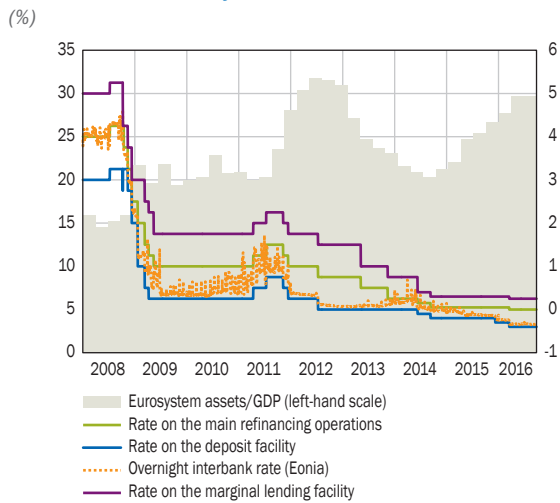
Faced with these growing risks of unanchoring expectations – in other words a loss of bearings among economic agents with regard to the value of prices denominated in euros – the Eurosystem responded by taking a number of measures, some of which are non-standard.

Negative policy rates and forward guidance

The Governing Council first lowered its policy rates in June 2014, then in September 2014 and again in March 2016 (see Chart 1). The policy rate, i.e. the main refinancing operations (MRO) rate is zero and the deposit facility rate is now set at –0.40%. The negative rate on the deposit facility puts a strain on the excess liquidity that banks deposit with the Eurosystem, which tends to encourage banks to lend to each other, thereby improving the flow of liquidity among banks in the euro area.

These rate cuts complemented the forward guidance about the future course of monetary policy already in

C1 Policy rates, Eonia and size of the Eurosystem balance sheet



Note: Policy rates in right-hand scale.
Source: ECB.

place since July 2013. This forward guidance corresponds to a commitment on the future path of interest rates, so as to influence not only the short-term rates, which have reached their lower bound, close to zero, but also longer-term rates which are largely determined by expectations of future short-term rates.

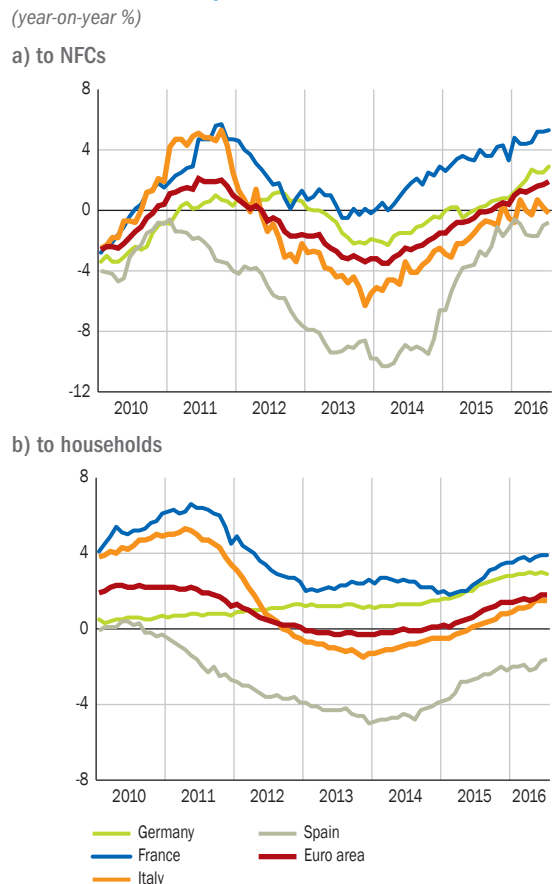
Refinancing and support for lending

In July 2014, faced with the declining volume of bank lending, the Governing Council decided to set up a new targeted longer-term refinancing operations (TLTRO) programme. The objective of TLTROs is to encourage banks to lend more to non-financial corporations (NFCs) and to households (with the exception of housing loans). The interest rates on these operations are attractive but TLTROs carry a form of conditionality. The participating banks which have not increased their credit supply to the private sector beyond a benchmark must repay the amounts borrowed and will not be eligible for the second tranche of the operation.

Public and private sector asset purchase programmes

In October 2014, the Eurosystem launched a first package of quantitative easing in the form of a dual purchase programme of private sector assets aimed at promoting high-quality securitisation and reducing the risk premium putting up the lending rates to NFCs: i) ABSPP, the asset-backed securities purchase programme; this is limited to “simple and transparent” ABS for economic

C2 Growth in outstanding loans to non-financial corporations and households



Source: ECB.

financing operations, rated at least BBB, and secured by credit claims against non-financial sector entities, such as home loans, car loans, consumer loans and business loans;¹ ii) a covered bond purchase programme (CBPP), targeting bonds mostly issued by the banking sector and secured by mortgages or loans to public sector entities.

From September 2014, ECB President Mario Draghi specified a target size for the balance sheet of the Eurosystem, indicating that the Governing Council intended to return to the levels prevailing in early 2012, i.e. a balance of EUR 3,000 billion, equivalent to around 30% of euro area GDP (against EUR 2,000 billion at the end of the third quarter of 2014).

1 These assets are considered as low-risk loans. Moreover, they were already eligible as collateral for Eurosystem refinancing operations.

In January 2015 the Governing Council decided to expand the previous asset purchase programme to include public sector securities (public sector purchase programme – PSPP). The monthly purchases of public and private sector securities under this expanded asset purchase programme (APP=PSPP+CBPP+ABSPP) were carried out between March 2015 and March 2016 for a total amount of EUR 60 billion per month. In December 2015, the adverse macroeconomic developments of 2015 led the Governing Council to recalibrate some of these measures. In particular, the deposit facility interest rate was lowered to –0.30% and the asset purchase programme was extended until at least March 2017.

In March 2016 the ECB announced a new extension of the programme. The new set of measures is fourfold: i) the interest rate on the main refinancing operations was lowered by 5 basis points to 0% and the rate on the deposit facility was lowered by 10 basis points to –0.40%; ii) the monthly amount of purchases under the asset purchase programme was increased from EUR 60 billion to EUR 80 billion; iii) investment grade bonds issued by NFCs were included in the scope of the asset purchase programme; iv) a series of four targeted longer-term refinancing operations was launched: the TLTRO II. The interest rate on these operations, each with a maturity of four years, will be fixed at the MRO rate prevailing at the time of take-up. For banks whose net lending exceeds a benchmark, the rate applied to the TLTRO II may be lower and possibly as low as the deposit facility interest rate prevailing at the time of take-up. Besides these measures, the ECB specified that the policy rates would remain at the level of April 2016, or lower, far beyond the horizon of March 2017, the current term of the asset purchase programme.

Macroeconomic impact of the measures

Following the programmes launched in 2014 and 2015, the financial conditions in the euro area improved significantly. There was a noted decline in expected future short-term interest rates, an even stronger decrease in the yields on sovereign bonds issued by Member States that was passed on to bank rates, an increase in outstanding private sector loans (see Chart 2) and a depreciation of the euro.

Given that economic activity depends on a number of factors, assessing the macroeconomic impact of the Eurosystem's measures must be based on simulation exercises. To this end, macroeconomic models are used, while also trying to identify the most robust results, i.e. those which do not seem to depend on the assumptions of particular models. This type of exercise is inherently subject to different types of uncertainty.

First, from a methodological perspective, several approaches are possible: dynamic stochastic general equilibrium (DSGE) models, statistical time series models, or traditional macroeconomic forecasting models. Within each approach modelling assumptions may influence the results. Furthermore, the uncertainty is particularly high as regards the monetary easing measures in the euro area due notably to the lack of a historical and statistical perspective given that the implementation of these measures and their related transmission channels are quite recent (see Box).

To date, there are few assessments of the effects of the asset purchase programme in the euro area. Table 1 shows the estimated impacts on inflation and activity for the euro area.

T1 Available evaluations of the impact of APP measures on inflation and activity ^{a)}

(in percentage points)

Works/Approach used	Maximum impact on annual inflation	Maximum impact on the level of activity
Cova, Pagano, and Pisani (2015) Structural model, explicit breakdown of several euro area economies	≈+0.8	≈+1.4 (at the level of GDP)
Sahuc (2016) Structural model with financial frictions	≈+0.8	≈+1.3 (at the level of GDP)
Andrade, Breckenfelder, De Fiore, Karadi and Tristani (2016) Structural model	≈+0.35	≈+0.6 (at the level of GDP)
Blot, Creel, Hubert and Labondance (2015) Statistical model	≈+0.8	≈+4 (industrial production)

a) Excluding the extensions of December 2015 and March 2016.
APP: asset purchase programme.

Main transmission channels of the asset purchase programmes

The asset purchase programmes are likely to affect the economy through multiple channels (Krishnamurthy and Vissing-Jorgensen, 2011; Drumetz, Pfister and Sahuc, 2015). They can be grouped into three major classes of mechanisms: i) the quantity effect, ii) the signalling effect, iii) the effect on excess liquidity. However, these distinctions remain somewhat arbitrary as the corresponding effects are not always easy to distinguish empirically or theoretically.

i) **Quantity effect:** purchasing assets is equivalent to exchanging long-term securities against reserves, i.e. liquidity held by banks on their current account with the central bank. If these assets are not perfectly substitutable and the financial markets are subject to constraints and uncertainties, this exchange is transmitted through portfolio rebalancing to other assets and causes price movements.

ii) **Signalling effect:** with its non-standard monetary policies, the central bank tells economic players that it is determined to take the necessary steps to achieve its inflation objective. This signal can lead economic agents to revise downwards their expectations for future policy rates. This signalling effect reinforces forward guidance, i.e. the explicit communication on the path of future interest rates. Through the interplay of arbitrages, a decline in expected future policy rates causes a change in the valuation of all financial assets.

iii) **Effect on excess liquidity:** the Eurosystem liquidity allotment procedure (through its fixed-rate refinancing operations) has a significant impact on the amount of liquidity available in the interbank market. An excess of liquidity leads to a fall in interest rates on the money market. The asset purchase programme perpetuates excess liquidity and thus contributes to keeping rates low.

The ECB (2016) presents an assessment taken from the work of a Eurosystem working group based on a series of models drawn up under the different models mentioned above. The effect of the APP (excluding the extensions of December 2015 and March 2016) on inflation is estimated at half a percentage point in 2016 and a third of a percentage point in 2017. The effect on the level of GDP by 2017 is estimated at almost 1 percentage point. Draghi (2016a, 2016b) and Praet (2016) refer to another assessment which includes the extension of the measures in December 2015, where the effect on inflation is at least 0.5 point in 2016 and around 0.5 point in 2017, while the effect on the level of GDP over the period 2015-2018 is about 1.5 points. Table 2 summarises these Eurosystem assessments by showing averages over the period 2015-2018².

The assessments referred to focus on the aggregate euro area. The effect may vary according to the country especially as a result of a more marked improvement in financing conditions in some countries, unequal spare capacity to increase production and a sectoral composition more or less exposed to international competition.

The peripheral countries, including Italy and Spain, where the sharpest declines in sovereign bond and bank lending rates were observed, probably benefited more from the measures than the core countries. The effect on France is apparently lower than that on the euro area average. Cova and Ferrero (2015) estimate the effect of the APP on inflation in Italy at 0.5 percentage point in 2015 and 0.7 point in 2016. The effect on GDP growth is 0.5 point in 2015 and 0.8 point in 2016. In France, according to an Insee study (Heam, Lee, Marc and Pak, 2015) the impact on 10-year sovereign bond yields is estimated at -0.8 point and the effect of the APP on GDP growth is 0.4 point in 2015.

Given, in particular, the recent nature of the experiences of non-standard monetary policy measures, there remains great uncertainty with regard to the magnitude and timeframe of their impact. The available assessments indicate, however, that they have contributed to sustaining growth and inflation in the euro area.

² In his press conference of 20 October 2016, Mario Draghi presented an estimate of the effects, for the 2016-2018 period, of all the measures taken between 2014 and March 2016. This estimate is consistent with those presented in Table 2, which include, *inter alia*, the effects on 2015.

T2 Eurosystem evaluation of the impact of non-standard measures in the euro area*(in percentage points)*

Source/Measures evaluated	Impact on average annual inflation 2015-2018	Impact on cumulative GDP growth 2015-2017 (or 2018 *)
ECB (2016) APP	≈+0.3	≈+1.0
Praet (2016) APP including the extension of December 2015	≈+0.4	≈+1.3*
Praet (2016) and Draghi (2016b) APP including the extension of December 2015 and TLTRO	≈+0.5	≈+1.6*

References**Andrade (P.), Breckenfelder (J.), De Fiore (F.), Karadi (P.) and Tristani (O.) (2016)**

“The ECB’s asset purchase programme: an early assessment”, *Working Papers Series*, No. 1956, ECB, September.

Blot (C.), Creel (C.), Hubert (P.) and Labondance (F.) (2015)

“Que peut-on attendre de l’assouplissement quantitatif de la BCE ?”, *Revue de l’OFCE*, No. 138, pp. 1-26, April.

Cova (P.), Pagano (P.) and Pisani (M.) (2015)

“Domestic and international macroeconomic effects of the Eurosystem expanded asset purchase programme”, *Temi di Discussione*, No. 1036, Bank of Italy, September.

Cova (P.) and Ferrero (G.) (2015)

“The Eurosystem’s asset purchase programmes for monetary policy purposes”, *Questioni di Economia e Finanza*, No. 270, Bank of Italy, April.

Draghi (M.) (2016a)

Foreword, *Annual Report 2015*, ECB.

Draghi (M.) (2016b)

Press conference (with questions and answers), ECB, 21 April 2016. <http://www.ecb.europa.eu/press/pressconf/2016/html/is160421.en.html>

Drumetz (F.), Pfister (C.) and Sahuc (J.-G.) (2015)

Politique monétaire, De Boeck.

European Central Bank (2016)

Annual Report 2015.

Krishnamurthy (A.) and Vissing-Jorgensen (A.) (2011)

“The effects of quantitative easing on interest rates: channels and implications for policy”, *Brookings Papers on Economic Activity*, Fall 2011, pp. 215-265.

Praet (P.) (2016)

“The ECB’s monetary policy response to disinflationary pressures”, Speech forum “ECB and its watchers XVII”, Center for Financial Studies, Frankfurt, 7 April.

Sahuc (J.-G.) (2016)

“The ECB’s asset purchase programme: a model-based evaluation”, *Economics Letters*, Vol. 145(c), pp. 136-140, September.

Published by

Banque de France

Managing Editor

Marc-Olivier STRAUSS-KAHN

Editor-in-Chief

Françoise DRUMETZ

Production

Press and Communication Department

October 2016

www.banque-france.fr