



BANK ĊENTRALI TA' MALTA
EUROSISTEMA
CENTRAL BANK OF MALTA

**UNCONVENTIONAL MONETARY POLICY
IN THE EURO AREA:
MACROECONOMIC CONTEXT,
EFFECTIVENESS, UNINTENDED
CONSEQUENCES, AND
NORMALIZATION**

UNCONVENTIONAL MONETARY POLICY IN THE EURO AREA: MACROECONOMIC CONTEXT, EFFECTIVENESS, UNINTENDED CONSEQUENCES, AND NORMALIZATION¹

Dr Stefano Siviero

Introduction

It is a great pleasure and an honour for me to be given this opportunity to contribute to the series of events that have been planned to mark the fiftieth anniversary of the establishment of the Central Bank of Malta.

This is an ideal time to have a celebration of a central bank: the prominence of central banks has recently increased worldwide, given the exceptional contribution of monetary policy to the economic recovery that has followed the extraordinary crises of the last decade. Similar to other central banks, the European Central Bank (ECB) – together with the national central banks of the Eurosystem – has resorted to a number of extraordinary measures, showing a good deal of creativity, ingenuity and even courage.

The decisions of the ECB have relied on solid and timely research, which I will make frequent reference to in today's lecture.² A tribute to the research carried in euro area central banks came from the ECB's President Mario Draghi, who recently remarked that "the past ten years show how indebted the former [policymakers] are to the latter [researchers]" (Draghi, Lindau, 24 August 2017). Bank of Italy's Governor Ignazio Visco observed that conducting research in central banks was particularly challenging also because it often became a 'rush against time', as the monetary policymaker had to react quickly to unprecedented events and could not wait until sufficient information was collected (Visco, Naples, 19 December 2016).

Today I will go through the monetary policy actions resorted to by the ECB in these years and describe the motivations behind these decisions, discuss their effectiveness, go over any unintended consequences they might have had and finally conclude by discussing policy normalization – both the steps taken so far and the way forward.

The context: disinflation and its risks

Before going over the monetary policy moves conducted by the ECB, I would like to start by recalling the context in which these monetary decisions were carried out.

Following the peak reached in 2008, inflation in the euro area declined sharply in 2009; after a short-lived recovery, the decline in inflation became a rapid and apparently relentless fall starting in late 2013. Initially, some observers attributed the fall to oil price development. However, the weakness of euro area inflation pre-dated the fall in oil prices. Furthermore, the decomposition of the overall index of consumer prices shows that other factors, including a decline in the price of non-energy industrial goods, played a prominent role in driving inflation lower and lower. Another old wives' tale that does not stand the test of data is that euro area inflation was very weak

¹ Lecture delivered on 29 October 2018 by Dr Stefano Siviero, Head of the Economic Outlook and Monetary Policy Directorate within the Directorate General for Economics, Statistics and Research of the Bank of Italy, as part of a series of lectures to commemorate the fifty years since the establishment of the Central Bank of Malta.

² For an extensive survey of the research carried out at the Bank of Italy and elsewhere on the issues that are dealt with in this lecture, see Neri, S., and Siviero, S. (2018), "The non-standard monetary policy measures of the ECB: Motivations, effectiveness and risks," *Kredit und Kapital – Credit and Capital Markets*, 51, 4, pp. 513-560.

only in a few economies impacted directly by the sovereign crisis, namely, Italy, Spain, Ireland, Portugal and Greece. On the contrary, the fall in inflation was widespread: for a long stretch of time between 2013 and 2016, consumer price dynamics were either negative or very low for the vast majority of EA countries; at one point in time, in early 2015, inflation was negative for 17 out of the 19 euro area countries.

The drop in euro area inflation was widespread also across items. While in normal times around 10% of goods and services included in the consumer price index register declining prices, at some point prices were declining for one-third of the items; only for a tiny fraction of items were prices going up by more than the central bank's target; the remaining share of items recorded very moderate price increases.

Very low inflation is undesirable for a number of reasons:

- Inflation is much harder to combat when it is at the lower end of the inflation distribution – Economists normally think of inflation as being a function of a small set of key determinants: past inflation, the slack in the economy, oil prices and the exchange rate. Busetti et al. (2015) used quantile regressions to probe whether and how the relationship between inflation and its determinants varies in the different regions of the inflation distribution.³ Results show that the dynamics of inflation appear to be more persistent in the lowest quantiles of the distribution; also, the inflation process seems more reactive to cyclical conditions (and thus, ultimately, to monetary policy) in the right tail of the distribution. These results indicate that inflation is much more resilient and harder to combat when it is at the lower end of the distribution.
- Low inflation affects inflation expectations negatively – Between 2013 and 2016 there were growing signs of possible de-anchoring of long-term inflation expectations from levels consistent with the definition of price stability.⁴ For instance, inflation expectations as measured by the 5-year to 10-year ahead inflation swap rate hovered around 2.3% between 2010 and 2014, but collapsed to 1.3% by end-2015. This evidence suggests a material risk of de-anchoring of inflation expectations. More solid evidence of such risk is provided in a study conducted by Natoli and Sigalotti (2017), who look at the reaction of short- and long-term inflation expectations when the former are hit by extreme negative shocks.⁵ If inflation expectations are well-anchored, shocks to short-term inflation expectations should not be followed by any significant change in long-term inflation expectations. By contrast, in case a persistently low level of price dynamics induces inflation expectations de-anchoring, a negative shock to inflation expectations in the short-term is likely to be followed by a decline in long-term inflation expectations too; this should not happen, instead, in case of positive shocks. The empirical results show a sharp increase, starting in 2014, in the co-movement of long- and short-term expectations when, and only when, shocks to the latter were negative, suggesting that there was indeed an increase in the risk of de-anchoring of inflation expectations in the euro area.

In turn, de-anchoring is undesirable for a number of reasons. Busetti et al. (2017) use a model in which agents learn from actual outcomes, and adjust their estimate of the inflation target accordingly, to explore the consequences of a de-anchoring of inflation expectations

³ See Busetti, F., Caivano, M., & Rodano, L. (2015), "On the conditional distribution of euro area inflation forecast," Working Paper No 1027, Bank of Italy, July.

⁴ De-anchoring occurs when economic agents believe that the central bank is either not able or unwilling to take inflation back to the target.

⁵ See Natoli, F., & Sigalotti, L. (2017), "An indicator of inflation expectations anchoring," Working Paper No 1103, Bank of Italy, February.

from the central bank's objective.⁶ The results suggest that, if expectations drift away from the target for too long, monetary policy becomes less effective and inflation and output take much longer to return to their equilibrium values.

- Negative cost-push shocks which normally are deemed to have a favourable effect on the economy may have undesirable effects on economic activity in certain situations – Neri and Notarpietro (2019) assess the macroeconomic consequences of a prolonged period of low and falling inflation when monetary policy is constrained by the zero lower bound (ZLB) on short-term nominal interest rates, the private sector is indebted in nominal terms (debt deflation mechanism) and nominal wages are rigid downwards.⁷ The authors show that negative cost-push shocks that in normal circumstances would reduce inflation and stimulate output may have contractionary effects on economic activity once the ZLB interacts with the debt deflation mechanism.

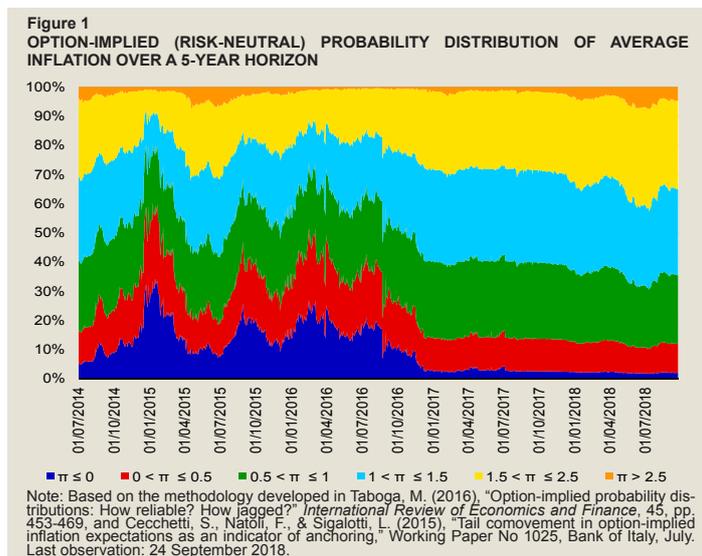
Thus, there are several reasons to believe that low inflation is a danger and should be combated with determination.

The monetary policy response of the Eurosystem and its effects on the macroeconomy

In early 2015, with policy rates close to their effective lower bound, the ECB introduced large scale asset purchases to help reignite economic activity and raise inflation back to its objective.

Although initially the asset purchase programme (APP) was met with criticism, evidence shows it was successful in helping return euro area inflation towards the ECB's definition of price stability (a year-on-year increase in the Harmonised Index of Consumer Prices for the euro area of below, but close to, 2% over the medium term), while giving a major boost to economic growth.

The best evidence of the success of the APP is that it completely dispelled deflation worries. The probability distribution of average inflation over a five-year horizon shows that in late 2014 – early 2015 markets deemed the probability of deflation to be as high as 33%; by the end of 2016 deflation worries abated, never to rise again (Figure 1). Neri and Miccoli (2018) show that the APP was also effective in reducing the sensitivity of inflation expectations to inflation surprises.⁸



⁶ See Buseti, F., Delle Monache, D., Gerali, A. & Locarno, A. (2017), "Trust, but verify. De-anchoring of inflation expectations under learning and heterogeneity," Working Paper No 1994, European Central Bank, January.

⁷ See Neri, S., & Notarpietro, A. (2018), "Collateral constraints, the zero lower bound, and the debt-deflation mechanism," *Economics Letters*, 174, pp. 144-148.

⁸ See Miccoli, M., & Neri, S., (2018), "Inflation surprises and inflation expectations in the Euro area," *Applied Economics*, 51, pp. 651-662.

Estimates by Bank of Italy staff suggest that the impact of the APP on euro area real GDP and inflation was sizeable.⁹ Interestingly, while it is estimated that the contribution to real GDP growth reached a peak in 2016 and then declined, the euro area economy has kept recovering in the last few years, indicating that it is increasingly becoming more resilient.

The APP stimulated economic activity and raised inflation through a number of channels. Through the portfolio rebalancing channel, asset purchases by the central bank led sellers of these assets to rebalance their portfolios towards other assets with higher expected returns, thereby increasing the price of a broad range of financial assets and reducing their yields. The compression of yields lowered the cost of external financing to both banks and non-financial corporations, resulting in a decline in bank lending rates. The cost of new loans has reached historical lows in all countries. Moreover, cross-country dispersion in lending rates has also declined. Italy proves to be an interesting case-study in this regard: whereas, prior to the introduction of the APP, the cost of financing was about one percentage point higher for Italian firms than for the average euro area firm, as from 2016 Italian firms have been paying much more similar rates to their European counterparts.

Another channel through which monetary policy impacts the economy is the so called credit channel. Albertazzi et al. (2016) find that a decline in interest rates will have a relatively stronger impact on banks in relatively weaker condition – that is, banks with a low deposit ratio, banks with a low Tier 1 ratio and/or banks with high sovereign exposure – leading them to relax their credit conditions to a greater extent than sounder banks.¹⁰ In contrast, the impact of unconventional monetary policy is found to be stronger for sounder banks. In other words, it is likely that the APP induced banks that are more capitalised, that have a higher deposit ratio and lower sovereign exposure, to lend more money to the economy.

The effects mentioned so far were all desirable features of the programme; but could there have been other, unintended, consequences?

Unintended consequences of unconventional monetary policies

The debate around the APP in particular and unconventional monetary policies in general often points to four main potential unintended side-effects: a) over-valuation of financial assets and excessive risk-taking, b) negative impact on bank profitability and banks' balance sheet adjustment, c) increasing inequality and d) delay of fiscal consolidation and structural reforms. I will address these concerns through the help of research work and argue that most concerns are unsubstantiated.

Over-valuation of financial assets and excessive risk-taking

Concerns are often voiced that exceptionally easy monetary conditions might favour the formation of bubbles in financial asset prices.

According to the standard definition, the fundamental value of an asset is the expectation of the present discounted value of its future cash flows. The main problem with estimating the fundamental value of an asset by using the standard definition is that there is considerable uncertainty in estimating both future cash flows and the discount factors that should be used to discount the cash flows.

⁹ Estimates are based on counterfactual simulations, which of course are model dependent; however, the estimates produced by the ECB using different models are remarkably similar.

¹⁰ See Albertazzi, U., Nobili, A., & Signoretti, F.M. (2016), "The bank lending channel of conventional and unconventional monetary policy," *Working Paper* No 1094, Bank of Italy, December.

Cecchetti and Taboga (2017) use statistical procedures that aim to take into account this uncertainty, for both stock indices and investment grade bond indices.¹¹ Similar to other studies, they find no evidence of price distortions from accommodative policies.

Negative impact on bank profitability and banks' balance sheet adjustment

On the one hand, non-standard monetary policy measures, including the negative rate on the deposit facility, are likely to result in lower net interest income amid a flattening of the yield curve. On the other hand, increases in the market value of sovereign bonds held by banks generate capital gains. In addition, the positive effects of monetary policy measures on the economic outlook contribute to increasing intermediation volumes and to improving credit quality. Overall, the impact of recent monetary policy measures on bank profitability would be expected to be broadly neutral.

Indeed, as shown by evidence published by the ECB in its November 2016 Financial Stability Review, the overall impact of unconventional monetary policy measures on bank profitability is basically negligible both in the euro area as a whole and in all major euro area economies.¹²

Increasing inequality

Another argument that received some publicity in the early stages of the APP is that unconventional monetary loosening acts as a sort of “reverse Robin Hood”. A study conducted by Casiraghi et al., (2016) analyses the distributional effects of conventional and unconventional monetary policy expansions on Italian households' income and wealth.¹³ Results show that relatively larger benefits accrue to households at the bottom of the income scale, as the indirect effects via the stimulus to economic activity and employment outweigh the direct ones via financial variables. Overall, their results suggest that the effects on inequality are negligible.

Delay of fiscal consolidation and structural reforms

It is often claimed that expansionary monetary policies relieve pressure off governments and hence discourage structural reforms and fiscal consolidation. As remarked by President Draghi, available empirical evidence suggests the opposite to be the case: “lower rates tend to promote reforms, since they lead to a better macroeconomic environment” (Draghi, Frankfurt am Main, 19 October 2017);¹⁴ this, as observed by Governor Visco, helps “the economy absorb [the] possible costs [of reforms] and maintain the necessary political drive and consensus on the need for reforming, thus making it more feasible.”¹⁵

I will now move on to how the monetary policy stance has been reshaped in the last two years and go over the normalisation process so far.

Normalization: so far

A new indicator built at the Bank of Italy by Miccoli et al. (2017) provides a synthetic measure of inflationary pressures and can be interpreted as the probability that inflation will be 1.9% or higher

¹¹ See Cecchetti, S., & Taboga, M. (2017), “Assessing the risks of asset overvaluation: models and challenges,” Working Paper No 1114, Bank of Italy, April.

¹² See ECB (2016), *Financial Stability Review*, November 2016.

¹³ See Casiraghi, M., Gaiotti, E., Rodano, L., & Secchi, A. (2016), “A ‘Reverse Robin Hood’? The Distributional Implications of Non-Standard Monetary Policy for Italian Households,” Working Paper No 1077, Bank of Italy, July.

¹⁴ This conclusion hinges on empirical evidence provided in Dias Da Silva, A., Givone, A., & Sondermann, D. (2017), “When do countries implement structural reforms?” *Working Paper* No 2078, European Central Bank, June.

¹⁵ See Visco, I. (2015), “Eurozone central bank policy challenges and risks,” *Central Banking*, 2 July.

within a given time horizon.¹⁶ Between 2013 and 2016, the indicator, which ideally should be at 50%, was as low as 20%. It has kept improving since late 2016 and currently stands at about 40%. Although there is still space for improvement, the indicator suggests that inflation pressures are gradually building up. This fact is presumably one of the arguments that the Governing Council of the ECB kept in mind when deciding to opt for monetary policy normalization.

Another argument in favour of policy normalization is the fact that, as mentioned earlier, growth is increasingly becoming self-sustained. Economic policies (specifically, the persistence of very favourable monetary and financial conditions and the moderately expansive fiscal stance) continue to contribute significantly to economic activity. However, as from 2017, growth seems to be progressively less reliant on this form of support. This is certainly the case for Italy but holds for other economies as well.¹⁷

Given this evidence, in December 2016, the Governing Council of the ECB decided to start normalising policy, that is, coming back from an abnormal situation and going gradually back to a more normal set-up of monetary policy, although the so called “new normal” does not need to be the same as the monetary policy set-up before the crisis.

Concerns are often voiced that, once monetary policy is normalised, this may hurt a number of economies. However, monetary policy normalization is not a binary process; rather, it is a gradual one, which has actually been on-going in the euro area for almost two years now, with no major unfavourable impact on financial markets and the macroeconomy.

The first step in monetary policy normalization was the ECB’s announcement, in December 2016, to scale back the amount of bonds it buys every month from €80 billion to €60 billion, starting April 2017. A number of other adjustments were carried out over time, including the removal of the easing bias on policy rates in June 2017, when a statement referencing further rate cuts if needed was removed from the Bank’s communique, suggesting that rate cuts were no longer a possibility. In October 2017, monthly net purchases were scaled down further from €60 billion to €30 billion (starting January 2018). In June 2018 the Governing Council stated that it will reduce monthly purchases to €15 billion per month until the end of December 2018, when net purchases are anticipated to come to an end.

Amid these fine-tunings of the monetary policy stance, the official wording of the ECB has remained very cautious. It has been stated over and over again that “an ample degree of monetary accommodation is still necessary;” although net purchases are likely to come to an end in December 2018, other tools will be used to keep an expansionary monetary policy. President Draghi has repeatedly emphasised that “[f]or ... a rising inflation path to materialise, we need to remain patient, prudent and persistent” (Draghi, European Parliament, 24 September 2018).

While monetary policy normalization may become a tough ride at times,¹⁸ it has been a smooth process in the euro area so far. Developments in the differential between the euro area ten-year yield and three month interest rate – which in effect is the overall slope of the yield curve – show that market reactions have remained muted following monetary policy announcements. While

¹⁶ Miccoli, M., Riggi, M., Rodano, L., & Sigalotti, L. (2017), “A composite index of inflation tendencies in the euro area,” *Occasional Paper* No 395, Bank of Italy, September.

¹⁷ See Bank of Italy (2018), *Annual Report – 2017*, May.

¹⁸ This was the case in the United States in May 2013, when Federal Reserve Chairman Ben Bernanke announced that the Fed would no longer be purchasing bonds: mass global panic ensued, resulting in the famous “taper tantrum” episode.

some big movements in the slope of the yield curve were indeed observed in the last two years (when, for example, turmoil in the financial markets in the United States reverberated in the euro area), monetary policy itself did not induce any of those large swings. For instance, upon the announcement that monthly purchases were to be lowered from €80 billion to €60 billion in December 2016, the increase in the slope amounted to merely 4 basis points. Nothing happened in June 2017 when the easing bias on policy rates was removed, despite fears that the news would be badly received by the markets and fuel expectations that monetary policy normalisation would proceed faster than previously thought. Changes in the slope of the yield curve were again negligible with the reduction from €60 billion to €30 billion in purchases, with the removal of the easing bias on purchases and with the last two decisions on net asset purchases taken in 2018. Thus, movements have always been well manageable whenever the ECB has announced and taken important monetary policy decisions. This is an indication that ECB communication was effective, and that monetary policy moves were deemed consistent with the overall evolution of the macroeconomic and financial outlook.

Where do we go next?

Going forward, a risk management approach arguably remains preferable, as the risks of normalising too fast are much bigger than the risks of normalising too slow. A number of factors lead to this view, including the following:

- High uncertainty surrounds a number of key, yet unobservable, factors (for example, the level of the natural rate of interest and the size of the output gap), which makes it harder to develop robust policy advice based on these figures.
- There is a material risk of undermining the on-going economic upswing, which could easily happen if a hasty exit from the expansionary stance backfires and eventually requires reverting to a more accommodative stance; this would dent a monetary policymaker's most valuable asset, that is, her/his credibility.
- In the current circumstances, tackling upward price pressures in case exit is delayed is arguably easier than combating the eventuality of renewed downward inflationary pressures in case exit happens to be premature.
- Local financial imbalances can be tackled by means of local macro prudential policies, and should not *per se* command a change in the monetary policy stance.

Following the end of the APP, there will be two monetary policy tools (or levers) left to the monetary policymaker in the euro area – policy rates and reinvestment.

With regard to policy rates, the market does not expect them to rise anytime soon and only envisages a rise in rates in late 2019.

As to reinvestment, President Draghi recently stated that the ECB's intention is “to reinvest the principal payments from maturing securities purchased under the APP for an extended period of time after the end of our net purchases, and in any case for as long as necessary to maintain favourable liquidity conditions and an ample degree of monetary accommodation” (Draghi, European Central Bank, 25 October 2018). Virtually all analysts interviewed by Bloomberg expect reinvestment to continue for at least two years and possibly even further. It is likely that the

Governing Council of the ECB will soon give more indications regarding reinvestment. To the extent that the experience of the US Federal Reserve may provide some guidance, comparing the stock of purchases by the Fed with that of the ECB, three main points stand out:

- The size of the programme (as a percentage of GDP) pursued by the ECB was not as sizeable as that of the Fed.
- The programme lasted between five and six years in the United States but was shorter in the euro area (less than four years).
- In the United States, full reinvestment lasted for approximately four years; furthermore, the decline in the stock, which started in 2017, is being carried out at a very slow pace. Thus, a long phase of reinvestment in the euro area would not be anomalous.

As QE (quantitative easing) measures are gradually unwound in both the United States and the euro area, the correlation between interest rates in Europe and in the United States, which is already very high, is likely to increase, especially for long-term rates. One risk following the removal of the QE stimulus is, therefore, that the euro area will be more open to shocks coming to long term rates from the United States. However, I think that the risk that the increase in yields may bring havoc in some countries is overstated. Taking the case of Italy, even if interest rates were to increase very fast, the debt to GDP ratio would still decline, provided growth continues and fiscal discipline is not unduly relaxed. *Per se*, an increase in yields is unlikely to be a significant source of risk.

Finally, there is the case of emerging market economies. Until recently, stress in emerging market economies was limited. Although it has risen sharply in the last few weeks it cannot be compared with the abrupt corrections in capital flows and asset prices experienced at the time of the “taper tantrum” in the United States. However, experience teaches that the situation can change rapidly and should therefore be constantly monitored.

Envoi: challenges ahead

Going forward, a number of key questions need to be tackled:

- Shall we go back to monetary policy exactly as it was prior to the crisis, with the interest rate targeting inflation below, but close to, 2%? Or should there be a change in the monetary policy strategy, considering that the natural rate of interest may remain persistently low?
- Which instruments should be retained and what would be their optimal mix?
- Which operational target(s) and framework should be pursued?
- Should the central bank balance sheet go back to the level viewed as normal in the decades before the crisis?

As a general remark, in the last few years, the macroeconomic, financial and regulatory environments have undergone major changes: this *per se* suggests that monetary policy does not necessarily need to go back exactly to where it was.

One important change in the economic environment is the decline in the natural real rate of interest. Estimates for the euro area and the United States suggest a trend decrease since the 1980s and point toward negative values in recent years. If indeed the real natural rate of interest were to remain around zero, the ECB main nominal policy rate should be around 2% in steady state, when inflation is at a level consistent with the definition of price stability. This may not give enough leeway to cut policy rates in response to future recessions. In such an environment, asset purchases may become one of the main ways to provide monetary policy accommodation. This would be a strong argument in favour of permanently holding asset purchases as an item in the monetary policy toolbox.

It is clear that adjusting the monetary policy set-up to this and other possible structural changes is a very complicated task, which can be successfully tackled only if solid research is available. So, to conclude where I started, let me go back to the words with which President Draghi praised the contribution of researchers to policy in the last ten years: I surmise that, given the many and challenging issues ahead, the contribution of research to policy will most likely remain just as relevant in the next ten years as well.