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How to Normalize Monetary Policy in the Euro Area

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How to Normalize Monetary Policy in the Euro Area

*Guenter W. Beck and Volker Wieland**

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Abstract

Since 2014 the ECB has implemented a massive expansion of monetary policy including large-scale asset purchases and negative policy rates. As the euro area economy has improved and inflation has risen, questions concerning the future normalization of monetary policy are starting to dominate the public debate. This study argues that the ECB should develop a strategy for policy normalization and communicate it very soon to prepare the ground for subsequent steps towards tightening. It provides analysis and makes proposals concerning key aspects of this strategy. The aim is to facilitate the emergence of expectations among market participants that are consistent with a smooth process of policy normalization.

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I. Introduction

The European Central Bank has used quantitative easing as early as 2009 when it announced the first covered bond purchase program in the middle of the recession. Then, the main policy rate, the rate on its main refinancing operations (MRO rate), was still at one percent. In subsequent years, the ECB made use of long-term-refinancing operations (LTRO) extending first three and later four years in order to stimulate bank lending and increase the central bank balance sheet. Targeted long-term refinancing operations (TLTRO) have included a fixed four-year interest rate as low as -40 basis points. By January 2014, the ECB resorted to a large-scale bond purchase program comprising a variety of assets but mostly sovereign bonds.[1] As a result of quantitative easing (QE), its balance sheet has increased enormously. It is expected to reach almost four times the pre-crisis level by end of 2017 (compared with July 2007).

Whilst the euro area economy has improved and inflation has risen, the ECB has not yet presented an exit strategy, that is, a plan that provides guidance on factors determining timing and process of policy normalization. Communicating such a strategy would help build public trust in the ECB and its ability to steer this process effectively.[2] Key challenges concern the appropriate reduction in the balance sheet and market participants' fears that monetary policy making is dominated by financial and fiscal concerns. Communicating an exit strategy in a timely manner would significantly improve the prospects for a smooth normalization process. The aim of this study is to review the challenges for normalization and discuss key elements of an exit strategy.

[1] This is the "expanded asset purchase program" (EAPP). It comprises the purchase of covered bonds (CBPP3), asset-backed securities (ABSPP), public sector bonds (PSPP) and corporate sector bonds (CSPP). The CBPP3 and ABSPP had already started in October and November 2014, respectively.

[2] See, e.g., the contribution by Donald Kohn and the general discussion on this topic in Blinder et al. (2013, chapters 4 and 5) or chapter 1 of IMF (2013a) concerning the importance of central bank communication in this regard.

First, we consider the dimensions and scope of the normalization process. This includes questions concerning which measures should be phased out and which should continue to be used in the future. In this context, a key question is the appropriate size of the central bank's balance sheet. Next, we examine the link between improving macroeconomic and financial conditions and the timing of exit from quantitative measures and negative interest rates. It is by no means ensured that the overall economic environment will be benign for normalization. Rather, the exit strategy should explicitly account for challenges arising from concerns for financial, fiscal or economic stability. Market participants may need to be convinced that Member states will attend to their areas of responsibility in ensuring the stability of the financial system, the sustainability of public finances and progress with structural reform rather than relying on a continuation of extremely accommodative monetary policy and low long-term interest rates. Thus, in spelling out the details of an exit strategy we also discuss in what way the ECB could adjust its communication as regards such challenges. The paper concludes with a brief summary.

II. Dimensions and scope of normalization

A. Negative interest rates and quantitative easing

Once the MRO rate and the ECB deposit rate had been lowered to 5 basis points and -20 basis points, respectively, in the course of 2014, the ECB introduced purchase programs for covered bonds and asset-backed securities. On 22 January 2015, the ECB then initiated a large-scale purchase program for public assets (PSPP) with the stated aim of raising consumer price inflation towards its objective of below, but close to 2%. Following a large reduction in oil prices, headline HICP inflation had registered slightly below zero at the end of 2014. The combination of purchase programs (EAPP: expanded asset purchase program)

was envisaged to last until September 2016 and comprise the purchase of assets worth 1140 billion euros. It has been extended twice. In June 2016 a program for corporate bonds was added (CSPP). Currently, the EAPP is envisaged to run until end of 2017 and encompass the acquisition of bonds worth 2280 billion euros.

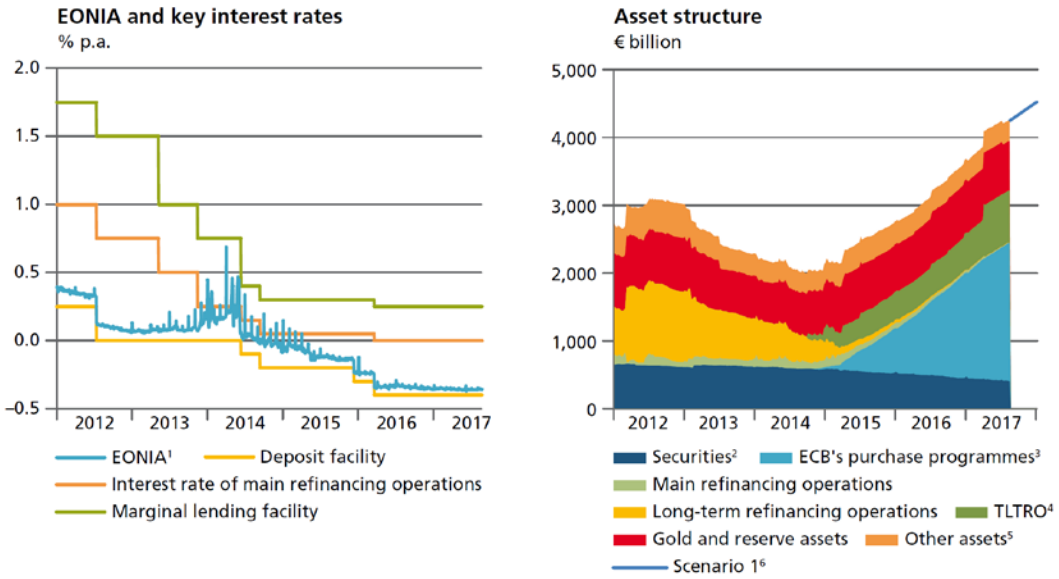

FIGURE 1. POLICY RATES AND ECB BALANCE SHEET

Notes: [1]Euro Over Night Index Average. [2]By euro area residents including purchases of government bonds (SMP, CBPP1 and 2) held for monetary policy purposes. [3]CBPP3 (3rd Covered Bond Purchase Programme), ABSPP (Asset-Backed Securities Purchase Programme) and PSPP (Public Sector Purchase Programme). [4]TLTRO I and since 29.06.2016 TLTRO II (Targeted long-term refinancing operations). [5]Including other claims on euro area credit institutions. [6]Projection assumes an increase of € 60 billion per month in purchase programmes.
Source: German Council of Economic Experts, ECB

Figure 1 shows the development of the key policy rates and the ECB balance sheet. The MRO rate has been lowered to zero percent and the rate at which banks can redeposit reserves at the ECB to – 40 basis points. The EONIA rate, which measures interbank rates, has also moved into negative territory and closely follows the ECB deposit rate.

As a consequence of the EAPP and fixed-rate TLTROs the ECB's total assets will have increased more than two and a half times by the end of 2017 compared with 2014. In comparison to the pre-crisis level in 2007 it will have almost quadrupled.

Any plan to exit from these measures that the ECB itself has classified as unconventional must address the following two questions at the outset: (i) should the central bank return to using a short-term interest rate as its primary instrument, or should it employ unconventional measures regularly in the future? (ii) should the central bank's balance sheet be returned to its pre-crisis level (relative to nominal GDP, for example) or should it remain at a much higher level, and if so, which one? A further important question that we leave for another study is whether or not existing monetary policy strategies, including inflation objectives, need to be modified.[3]

B. Current and future use of policy instruments

Before the global financial crisis, the central banks of the main industrial economies with the exception of the Bank of Japan (BoJ) relied on a short-term nominal interest rate as the main policy instrument. The BoJ had been using its balance sheet since March 2001 as its primary instrument in a low inflation environment with near zero interest rates.

Changes in the central bank rate are transmitted to medium- and longer-term nominal rates which take into account current and expected future short rates. As a result of price rigidities these changes are also transmitted to real interest rates, which in turn influence aggregate demand, for example via investment,

[3] For example, monetary policy strategies could include financial stability considerations more explicitly (see BIS, 2016 (chapter 4)) or inflation targets could be increased to leave more room for interest rate cuts in recessions (see, e.g., Blanchard et al. 2010). GCEE (2016) conclude that the ECB's current strategy offers enough flexibility to deal with current challenges.

consumption and savings motives and wealth effects. Interest rates also affect the exchange rate and thereby imports and exports. Furthermore, financial frictions imply that changes in asset prices influence the borrowing capacity of firms and the lending capacity of banks. Additionally, there is a risk-taking channel resulting from the behavior of investors and banks.

The use of short-term interest rates as the main policy tool of central banks is well understood and has been fairly effective in the past when interest rates were positive. Thus, in an economy exhibiting positive rates of economic growth and inflation, that is, in more normal times, central banks can rely again on this instrument. Importantly, open market operations conducted to change short-term nominal interest rates in money markets imply endogenous changes in the central bank balance sheet. Thus, balance sheet and interest rate are not independent instruments. Furthermore, real-balance and portfolio balance effects that remain operative with constant or zero interest rates are quantitatively small relative to the effects of balance sheet changes due to open market operations accompanied by changes in central bank rates. Thus, in a more normal environment these (independent) macroeconomic effects of quantitative measures will be swamped by the standard effects via interest rate transmission (see e.g. Orphanides and Wieland 2000, Coenen and Wieland 2004, Wieland 2010, GCEE 2016).

Whenever the room for lowering the short-term policy rate may be exhausted, for example in the event of a recession or deflation, longer-term refinancing operations provide a natural option for extending further policy accommodation. Furthermore, the arsenal of quantitative measures including private and public asset purchases should remain available. Empirical research of the experience

following the global financial crisis has helped reduce uncertainty about their effects, at least relative to the situation prior to the financial crisis.[4]

In making use of quantitative easing in such crisis situations it is important to consider cost-benefit tradeoffs. For example, quantitative measures are associated with risks for inflation and financial stability (see, e.g. BIS 2016, chapter 4) that may increase the longer they are employed. Furthermore, in a currency union of otherwise largely sovereign member states, moral hazard may well induce negative side effects of central bank purchases of member states' debt. Member states might reduce efforts to maintain sound public finances and remove structural barriers to competition and growth.

C. The appropriate size of the balance sheet

The balance sheet of the ECB has risen from about €1200 bn prior to the financial crisis in July 2007 to €4200 bn by August 2017. By the end of this year the size of the balance sheet will reach about €4500 bn. The €3300 bn increase is roughly equal to 30 percent of euro area GDP. Central bank balance sheets have also expanded substantially in other major industrial economies such as the United States, the United Kingdom and Japan. Currently, it is the ECB and the Bank of Japan that are contributing most to the expansion of world central bank liquidity.

An important question is whether and, if so, when, how and to which level the central balance sheet should be decreased in the context of a monetary policy normalization. The Board of Governors of the Federal Reserve System (US Fed) published "Policy Normalization Principles and Plans" in September 2014. It announced that it would decrease its balance sheet in the long run to "*hold no*

[4] See, for example, Bernanke et al. (2004), Gagnon et al. (2011) or Borio and Zabai (2016) and for recent overviews GCEE (2015, 2016).

more securities than necessary to implement monetary policy efficiently and effectively" (Board of Governors, 2014). Conceptually this would seem to be a level similar to the pre-crisis period adjusted for the increase in the demand for central bank liquidity and cash resulting from the economic growth since then. By contrast, Carney (2013) has indicated that the Bank of England might hold a systematically different level of assets in the future.

To answer whether the "new normal" size of the ECB's balance sheet should be systematically different from its "old normal", it is useful to consider the role of the balance sheet in times when the short-term interest rate is the main policy instrument. Under these circumstances, the central bank provides the amount of reserves to the banks that they demand at that rate and aims to make sure that the rate at which these reserves are exchanged between banks corresponds to the central bank's desired rate. As a consequence, the size of the central bank's balance sheet (absent any other, non-monetary policy related transactions) is determined endogenously by the liquidity needs of the banking system. By contrast, when a central bank conducts quantitative easing, it increases the volume of its assets deliberately and thus actively employs its balance sheet for monetary policy purposes.

Direct asset purchases have some consequences that are delicate from a political economy perspective (Borio and Zabai, 2016). First, holding assets directly increases financial risks for the central bank's balance sheet. Holdings of medium- to long-term bonds imply considerable interest rate risks. Moreover, there is credit risk unless purchases are limited to those government bonds that are very safe. Secondly, large-scale purchase of government bonds establishes a direct link between monetary and fiscal policy. It changes the financing conditions of governments directly. Even if conducted on secondary markets they may induce sufficient certainty for investors on the primary market to assure them of a purely intermediary role. This is of particular concern in the euro area,

because the Eurosystem is purchasing member states' debt and is prohibited from monetary financing by the Maastricht Treaty. Ultimately, blurring the line between monetary and fiscal policies threatens the independence of the central bank. Both considerations suggest that the normalization process should include a sizeable reduction in the ECB balance sheet down to levels determined by the liquidity needs of banks. New regulatory measures may well imply somewhat greater demand for central bank liquidity relative to GDP than before the crisis (see also Wyplosz 2014).

III. Timing of normalization

A. Inflation in the euro area

The Treaty on the Functioning of the European Union (TFEU, Art. 127 (I)) assigns the ECB the pursuit of price stability as its main task. A stable price level would imply zero inflation however measured. The ECB has provided a quantitative definition for the HICP (Harmonized Index of Consumer Prices) as part of its strategy. From 1998 to 2003 it aimed for an increase below 2 percent over the medium term, that is, an objective of 0 to 2 percent HICP inflation. Following its 2003 mid-term review, the ECB clarified its objective as below but close to 2 percent HICP inflation over the medium term (ECB 2003). The close to 2 percent safety margin was meant to account for measurement bias and provide room for interest rate cuts relative to an effective lower bound on nominal rates. The objective does not need to be met at each point in time. The medium term horizon is commonly understood as a period of more than one year but less than five years.

Figure 2 reports on the development of several measures of inflation: the overall HICP, core HICP (excl. food and energy), the PCE (private-consumption-expenditure) deflator and the GDP (gross-domestic product) deflator. The overall

HICP and the PCE declined towards small negative numbers in 2014, varied between 0 and 0.5 percent in 2015 and 2016, quickly rose to 2 percent at the start of 2017 and declined somewhat in the last few months. The 2013-14 decline in the HICP was largely driven by a decline in energy price inflation that was mostly due to an enormous drop in the oil price. Once the oil price stabilized, its dampening effect disappeared. The resulting path of annual energy price inflation raised overall HICP inflation quickly but temporarily to 2 percent.

By contrast, core HICP and GDP deflator inflation, which are much less affected by movements in energy prices, had not experienced similar declines in 2013 and 2014. Core inflation has been quite stable, somewhat above 1 percent between 2010 and 2013 and a little below 1 percent between 2014 and 2016. Recently, it has been rising above 1 percent again. The GDP deflator, which measures inflation for all goods and services produced in the euro area, has also been fairly stable for the past 10 years. During some years it was a little above and during others a little below 1 percent.

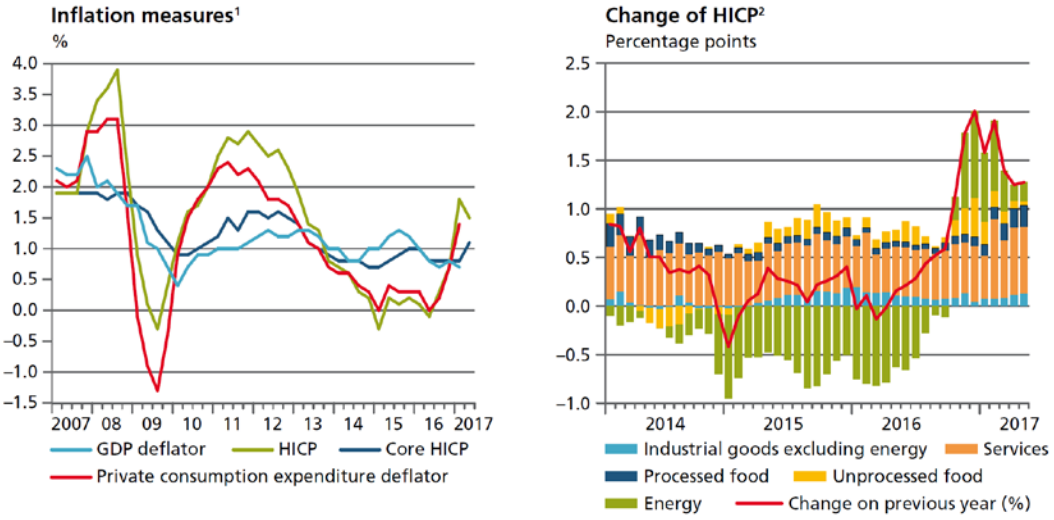

FIGURE 2. INFLATION MEASURES AND DECOMPOSITION OF THE HICP INFLATION RATE

Notes: [1]Change of the respective index on previous year. [2]Overall index (HICP) and the contributions of subindices, seasonally adjusted.
Source: German Council of Economic Experts, own calculations, ECB, Eurostat

The June 2017 ECB staff forecast anticipates core HICP (overall HICP) to reach 1.4 percent (1.3 percent) in 2018 and 1.7 (1.6) percent in 2019. The ECB Survey of Professional Forecasters has core HICP (overall HICP) at 1.3 (1.4) percent in 2018 and 1.5 (1.6) percent in 2019. Arguably, this could be summarized as consumer price inflation being below but close to 2 percent over the medium term – or at least not far from that point. A recent empirical estimate puts the ECB's point target at 1.72 percent on the basis of an interest rate reaction function that fits ECB interest rate decisions quite well (see Bletzinger and Wieland 2017).

B. Economic recovery in the euro area

The euro area has experienced a steady economic recovery which started already in the course of 2013 (see **Figure 3**). GDP growth has been around 2 percent since 2015, which is well above the European Commission's estimate of potential growth of around 1 percent. Euro area GDP surpassed the pre-crisis level in 2015 and stands almost 4 percent higher by the second quarter 2017. According to estimates of the GCEE the gap between actual and potential output is being closed in the course of 2017 (GCEE 2016). Actual GDP growth is expected to continue outstripping potential growth such that the output gap will increase and add inflationary pressure.

The decomposition of euro area GDP growth indicates that it is mostly driven by household consumption and private sector investment. Along with the improvement in economic output, there has been a sizeable decrease in aggregate unemployment. It has declined from a record level around 12 percent in 2013 to 9.1 percent in June 2017.

Despite the significant improvement in euro area aggregates several factors remain that raise concerns about the robustness of the economic recovery. First,

there are substantial differences across euro area member states. While GDP in Germany in 2017 exceeds the pre-crisis level by about 10 percent, Italian GDP remains about 8 percent below the level before the crisis. By contrast, Spanish GDP has increased by more than 10 percent and returned to pre-crisis level in just about three years.

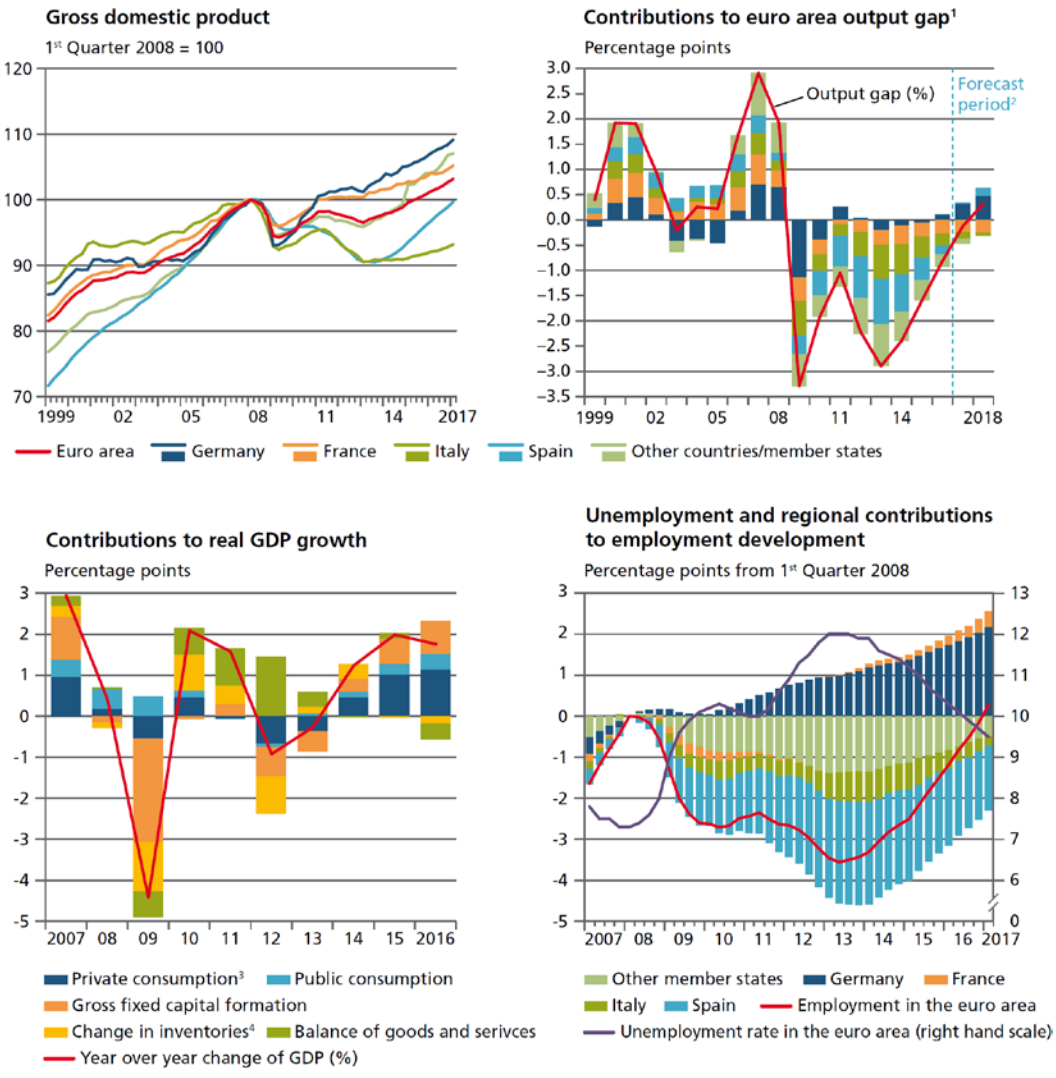

FIGURE 3. GDP AND (UN-)EMPLOYMENT IN THE EURO AREA

Notes: [1]Real GDP less potential GDP relative to potential GDP. [2]Forecast of the German Council of Economic Experts. [3]Households and nonprofit institutions serving households. [4]Including net acquisition of valuables.
Source: German Council of Economic Experts, own calculations, ECB, Eurostat

The European Commission estimates quite differential potential growth rates. For example, its estimate for Germany is near 2 percent, for France near 1 percent and about zero percent for Italy. The unemployment rate in Germany has declined well below the pre-crisis level, while in France it is still somewhat above that rate. In Italy and Spain, however, it remains substantially higher than before the crisis, though Spain at least shows a significant rate of improvement.

Secondly, the heterogeneous development of member states faced with the same monetary policy suggests that structural, supply-side factors are causing low potential growth and high structural unemployment. Indeed, a variety of indicators suggest the existence of structural deficiencies to different degrees. To give an example, ease of doing business indicators vary substantially across the euro area with Germany and Ireland fairly high, Spain in the middle, and Italy and Greece towards the bottom of the scale (see Draghi 2016). Thus, there exist enormous obstacles for opening new businesses in many euro area countries.

Thirdly, banking sectors remain weak while the sustainability of public finances is questionable in several member states of the euro area. These member states remain vulnerable to instability as discussed later on.

These concerns need to be addressed in the context of an exit strategy from quantitative easing. However, they cannot be resolved by monetary policy. Rather, they require action by the governments of member states. Unfortunately, however, the pace of reform has slowed in recent years as indicated by the share of implemented "Going for Growth" recommendations by the OECD in the member states (see OECD 2016). The reform fatigue has arisen at the same time accommodative monetary policy continued to support aggregate demand in euro area countries. While some argue that this environment supports governments' reform efforts, others suspect that moral hazard leads governments to postpone unpopular reforms (see GCEE 2016, for example).

C. Symmetric policy versus "lower for longer"

Central bank interest rate policy is typically described quite well by interest rate reaction functions that capture the policy response to inflation deviations from target and economic activity relative to potential. Such reaction functions imply that policy accommodation is removed step by step as inflation increases and economic activity improves. Accordingly, the extent of quantitative easing should be adjusted along with price developments and the recovery in the euro area.

There is a line of research that suggests that deflation risk introduces an important asymmetry because of increased uncertainty about policy effectiveness at the lower bound on interest rates. Accordingly, a "lower for longer" approach to policy accommodation is recommended (Reifschneider and Williams 2000, Orphanides and Wieland 2000, Auerbach and Obstfeld 2005, Evans et al 2015). Additionally, it is argued that an exit from quantitative easing requires the absence of financial stability concerns (Kohn 2013, IMF 2013b).

By contrast, others point to increasing risk of financial instability the longer the central bank sticks to quantitative easing (BIS 2016). Balancing these concerns may well lead to recommending a symmetric approach to policy accommodation in a low inflation environment (see GCEE 2015 for a discussion). In any case, in designing the normalization, careful attention needs to be given to maintaining a robust financial sector and sustainable public finances.

At this point, the ECB is still expanding its balance sheet further and thereby increasing monetary policy accommodation. Yet, inflation and GDP growth have been improving since 2014. This suggests that ECB policy is better described as a "lower for longer" approach at the effective lower bound than as a symmetric reaction to inflation and economic activity.

This conclusion is supported by comparisons with two simple interest rate rules in **Figure 4**. The interest rate band from the first-difference or change rule of

Orphanides and Wieland (2013) fits past ECB decisions quite well, yet it did not call for massive easing from 2014 onwards. This rule is based on SPF forecasts of inflation and output growth. Recent estimates of such a reaction function by Bletzinger and Wieland (2017) also suggest that the ECB pursues a "lower for longer" approach. By comparison, the instantaneous forward rates from the yield curve have declined significantly. They provide a possible indication of the near-term interest rate impact of the on-going government debt purchases.

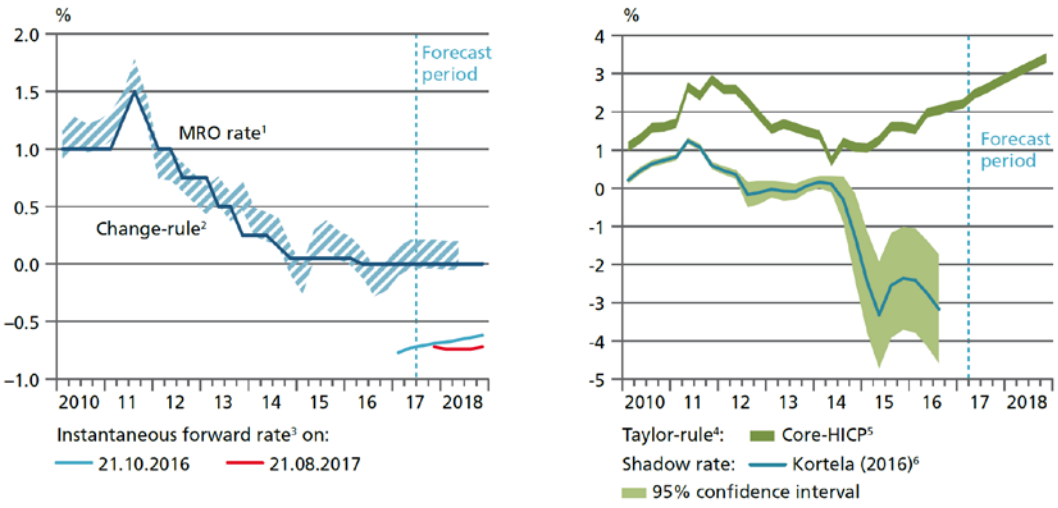

FIGURE 4. INTEREST RATE RULES INDICATING A "LOWER FOR LONGER" APPROACH

Notes: [1]Interest rate on main refinancing operations. [2]Equation: $i_t = i_{t-1} + 0.5(\pi^F - \pi^*) + 0.5(\Delta q^F - \Delta q^*)$. i_t denotes the estimated ECB's MRO rate, it depends on the MRO rate of the previous period, i_{t-1}, on the deviation of the inflation forecast, π^F, from the central bank's inflation target, π^*, and on the deviation of the growth forecast, Δq^F, from the estimated growth potential, Δq^*. The estimates of growth potential are based on realtime data from the European Commission. The forecasts are based on data of the Survey of Professional Forecasters: for inflation it is the forecast for three quarters ahead, for growth it is the forecast for two quarters ahead. [3]Instantaneous forward rates based on euro area AAArated government bonds with maturity of 3 months and longer. [4]Equation: $i = 2 + \pi + 0.5(\pi - \pi^*) + 0.5(y)$. i denotes the estimated money market interest rate; it depends on the long-term real equilibrium interest rate (estimated to be 2 %), on the current inflation rate, π, in deviation from the central bank's target, π^*, and on the output gap, y. [5]Based on ECB's real-time database and AMECO. [6]Updated estimates for Kortela (2016).
Source: German Council of Economic Experts, calculations based on data from the European Commission and the ECB

Interest rate prescriptions from a version of the famous Taylor (1993) rule using euro area output gap and core HICP inflation have been rising for some time. Currently they stand at approximately 2 percent. By comparison, estimates of shadow interest rates that are meant to summarize the impact of ECB asset

purchases on the yield curve in a short-term nominal rate are between -2 and -4 percent according to Kortela (2016). Thus, the ECB is keeping policy much more accommodative than suggested by the Taylor rule. Even if one were to use recent estimates of medium-term equilibrium real rates of near zero percent (see Holston, Laubach and Williams 2017, Beyer and Wieland 2017) instead of Taylor's long-run equilibrium real rate of 2 percent the resulting prescription remains much higher than the shadow rates. Importantly, if one uses medium-run equilibrium rate estimates in the Taylor rule together with the consistent medium-run output gap, the interest rate prescriptions turn out a good bit higher and closer to 2 percent than to zero percent (see Michaelis and Wieland 2017).

One could argue that there has already been a tightening via the exchange rate. Indeed, the nominal trade-weighted exchange rate has risen about 5½ percent between beginning of January and end of August 2017. Yet, this may simply be an adjustment to the recovery of the euro area and the anticipation of an exit from quantitative easing. Still, the trade-weighted exchange rate remains about 4 ¾ percent below the latest peak in spring 2014.

Of course, there is continued debate about whether the ECB should stop asset purchases this year or whether it should continue its quantitative easing for quite a bit longer. However, it should be possible to agree across a large spectrum that macroeconomic developments call for formulating and communicating an exit strategy now, that is, ahead of a first policy tightening. In this context, it is important to consider the potential impact on the financial system and government finances.

D. Resilience and stability of the financial system

The ECB has identified four major sources of risks to financial stability in the euro area. These stem from global risk repricing, adverse feedback loops between

week bank profitability and low nominal growth, re-emerging sovereign and private-sector debt sustainability concerns and prospective stress in the recently strongly expanded investment fund sector (see Table 1 of ECB, 2016). It also strongly emphasizes the important role of nominal growth (or its absence) in muting (amplifying) these risks. The IMF also emphasizes that the prolonged low-growth, low-interest rate period imposes considerable challenges for the medium-run solvency of insurance companies and pension funds (IMF, 2016b). While the ongoing economic recovery in the euro area counteracts these risks to some extent, the divergence in national growth rates indicates that significant relief depends on governments implementing market- and growth-oriented structural reforms. Moreover, the IMF (2016b, 2017) points to weaknesses in the euro area banking sector which a cyclical recovery alone would not overcome.

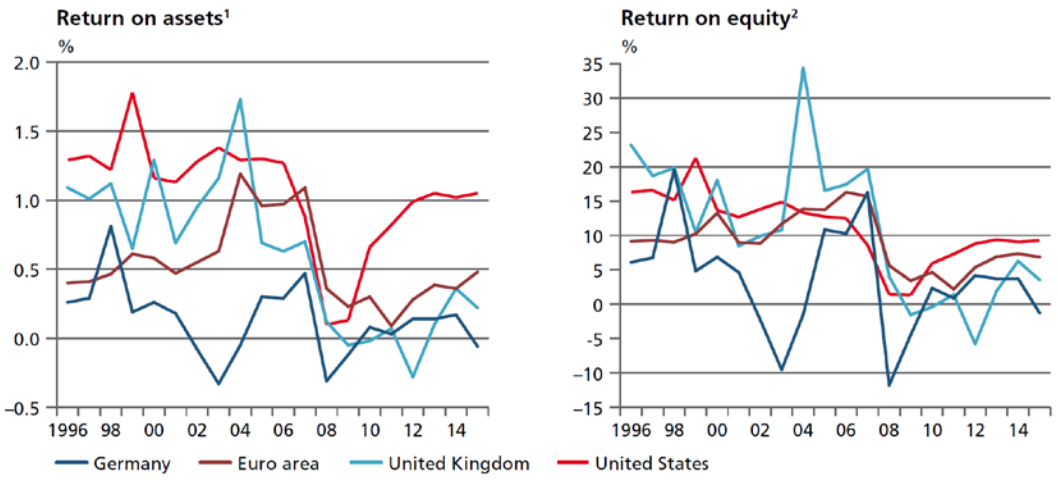

FIGURE 5. PROFITABILITY OF EURO AREA BANKS

Notes: [1]Ratio of after-tax net income to total assets. [2]Ratio of after-tax net income to book capital.
Source: German Council of Economic Experts, World Bank

As shown in **Figure 5** the profitability of European banks has declined substantially following the global financial crisis and has not recovered since then. Banks' profits directly influence their ability to raise capital as a buffer

against negative shocks. Moreover, higher profitability improves banks' ability to extend loans and thereby supports the economic recovery.

One reason for low profitability is high operational cost due to extensive branch networks. Another one is the high proportion of non-performing loans particularly in crisis countries (ECB 2015, 2017, IMF 2016b, 2017, GCEE 2016). Among the large euro area economies Italy stands out with a high share (**see Figure 6**). Profits are depressed due to provision costs and the ability of banks to extend loans declines. Last but by no means least, monetary policy itself contributes to low bank profitability to the extent that the low interest rate environment is caused by ECB asset purchases, TLTROs and negative deposit rates.

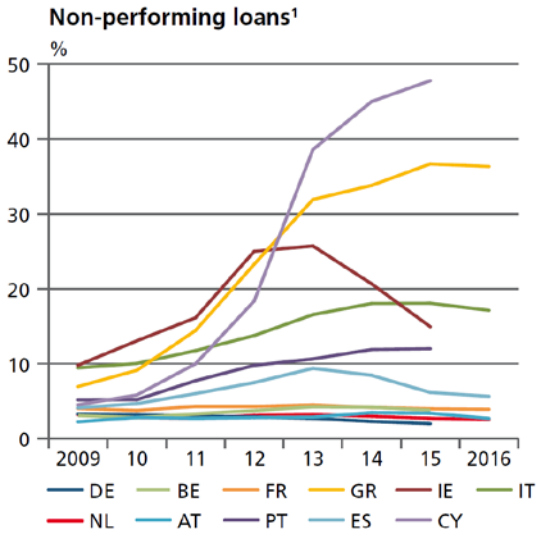

FIGURE 6. NON-PERFORMING LOANS

Notes: [1]AT-Austria, BE-Belgium, CY-Cyprus, DE-Germany, ES-Spain, FR-France, GR-Greece, IE-Ireland, IT-Italy, NL-Netherlands, PT-Portugal.
Source: German Council of Economic Experts, World Bank

Simulation exercises by the IMF indicate that a cyclical recovery would only partly mitigate the profitability of euro area banks (see IMF 2016a, 2017) leaving assets worth around $8.5 trillion in weak shape. Policymakers need to address

non-performing loans, low operational efficiency, weak business models and overcapacities. This should be done within the rules of banking union including bail-in of bank creditors rather than relying on exceptions for more tax payer funded bailouts. Yet, the low interest rate environment contributes to the phenomenon of "evergreening", that is, revolving non-performing loans to avoid credit default and thus preventing a necessary clean-up in the banking sector.

The share of long-term low interest rate loans is increasing. The longer the low interest rate environment persists, the greater the build-up of interest rate risk within the banking system. Germany is a good example. Low interest rates induce search-for-yield and higher risk taking by banks, (see Borio and Zhu 2012, Rajan 2005, Adrian and Shin 2010 and Jimenez et al. 2014).The longer the ECB waits with an exit from quantitative easing and negative deposit rates, the more difficult and potentially damaging to financial stability such an exit may become.

E. Sustainability of public finances

Currently, euro area governments are able to refinance their debt at extremely low interest rates. Yet, long-term interest rates may rise substantially once the ECB stops government debt purchases. Indeed, even the anticipation of a future end of purchases may already trigger such an increase. Not all member states appear to be prepared for such a development.

The sustainability of a given debt level depends on current and future primary deficits, interest rates as well as current and expected future GDP growth. Should growth rates exceed interest rates, a given debt level may be sustainable even with a lasting primary deficit. Otherwise, the sustainability of current debt requires future surpluses. For example, with a constant deficit ratio, interest rate and growth rate, the primary surplus and/or real growth rate need to be larger the

higher the current debt level. An increase in the real interest rate then requires a greater future surplus or growth rate.

Debt-to-GDP ratios of most euro area member states remain far above the 60 percent maximum once enshrined in the Maastricht Treaty except for countries such as the Netherlands or Germany. In France and Spain the ratio is only a little below 100 percent of GDP, while in Greece, Portugal and Italy it lies far above it. The above considerations imply that fiscal sustainability requires higher primary surpluses for given higher initial debt levels. Except for Italy, high debt levels remain associated with current deficits rather than surpluses. Unfortunately, growth rates are quite low for most high debt countries. Among large economies, Italy is of particular concern because it has barely exited stagnation, but also France is far from being a major growth engine. More detailed analysis by the European Commission also suggests that there exist considerable risks for fiscal sustainability in a number of euro area counties (European Commission 2016).

Euro area members undertook considerable efforts in order to stabilize government finances between 2011 and 2014 as can be seen from **Figure 7**. Since then, however, they have loosened the fiscal stance. They did not take advantage of the reduction in interest rates since 2014 to apply interest savings towards fiscal consolidation. Governments have largely missed the opportunity provided by massive monetary policy easing for improving fiscal sustainability with an eye towards the future exit from this unusually accommodative monetary policy.

Governments that are not preparing for higher funding costs in the future may be counting on monetary policy to continue facilitating government finances. If instead the ECB tightens policy and winds down sovereign debt purchases, prices of the bonds of those countries may decline quickly due to higher risk premia demanded by investors. Highly indebted member states would be subjected to enormous fiscal stress. Of course, the European Stability Mechanism (ESM) offers a way out if any government is in danger of losing market access. Yet,

ESM loans would come with conditions concerning fiscal consolidation and structural reform. Massive fiscal stress might even fuel calls for leaving the euro area in countries where anti EU parties might have a chance of winning elections.

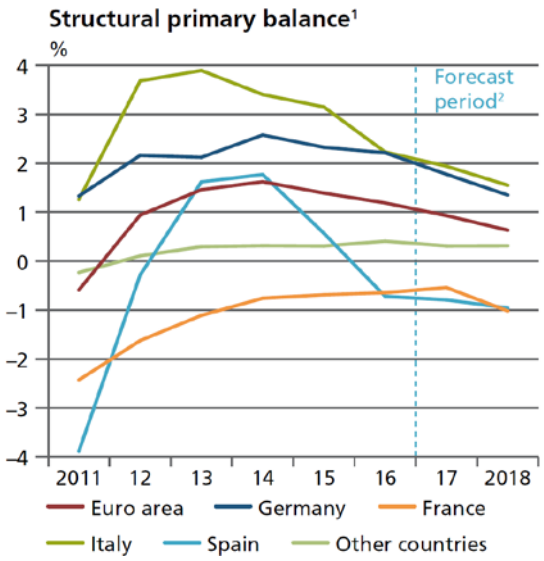

FIGURE 7. PRIMARY BUDGET BALANCES OF SELECTED EURO AREA COUNTRIES

Notes: [1]In relation to potential output. [2]Forecast of the European Commission.
Source: German Council of Economic Experts, European Commission

Another danger might be that the ECB keeps postponing an exit in order to avoid fiscal stress for member states. This raises the specter of fiscal dominance, a situation in which monetary policy is subordinated to ensuring fiscal sustainability thereby losing control of the price level. Given the legal framework of European Monetary Union, the ECB is probably the most independent central bank of the world. Yet, even it is fully committed to tightening policy when it considers it necessary, market participants may doubt its commitment. Clearly, it is important to address such concerns in designing an exit strategy.

IV. Developing an exit strategy

A. The need for a strategy

Average euro area macroeconomic performance has improved substantially and core inflation has been moving up beyond one percent per year, while the ECB is still increasing monetary policy accommodation. The ECB should prepare and communicate a strategy for ending the increase in its balance sheet and adjusting policy to the improved environment. However, problems remain that are outside the ECB's range of influence. There is substantial heterogeneity among euro area members. Governments need to proceed with implementing growth-oriented structural reforms, improving the robustness of the financial system and getting government finances ready for an increase in longer-term interest rates. Thus, the ECB needs to develop an exit strategy that remains credible in light of such vulnerabilities.

The IMF has characterized ideal policy normalization as follows: *Ideally, the normalization of interest rates and volatility would be orderly and unfold as follows: short-term interest rate expectations rise along a smooth, gentle path, consistent with current market expectations; the term premium compression unwinds gradually; the portfolio adjustment response occurs smoothly, and credit valuations reprice modestly; pockets of balance sheet leverage are unwound at a gradual pace, with limited knock-on effects; market liquidity is sufficient to accommodate these adjustments; and all of these developments occur in the context of an economy gathering strength"* (IMF, 2013a, p. 6).

Such a benign outcome implies favorable expectations formation by market participants. This requires effective communications, predictable decision making and a high degree of credibility of policy makers. Given the diversity of governments and European institutions involved in macroeconomic policy

making this is a major challenge for most. The ECB is perhaps best positioned as an independent institution with a clear mandate and the ability to make plans and proceed with implementation at its own choosing. Having moved far from past predictable patterns of policy making during crisis and post-crisis management, it urgently needs to give markets more guidance in the form of a strategy.

A timely communication of a normalization strategy is essential for a benign process of expectations formation by market participants. This concerns not only financial markets, but also goods, services and factor markets. Such a normalization strategy would explain the links between the path for policy instruments and macroeconomic developments including forecasts. Importantly, it would also explain how the central bank and other policy makers can credibly guard against particular risks and manage potential disruptions in the financial and other spheres. Finally, it would indicate key features of the longer-run policy environment that is anticipated to persist after normalization.

Some disruptions may be unavoidable. If investors in long-term bonds attempt to unwind large positions swiftly, because they fear major losses, sharp price drops and higher volatility will be the result. The likelihood of such events may even be higher in an environment of lower market liquidity due to increased regulation (see IMF 2013a). An example of turbulence was the so-called “taper tantrum”, that is the sharp increase in U.S. government bond yields following remarks by FOMC Chairman Bernanke on May 22, 2013, that the Fed would likely start reducing asset purchases later that year. Ultimately, the Fed’s tapering process that started around seven months later in January 2014 went fairly smoothly. Of course, U.S. policy rates are still far from what would have been a normal level relative to inflation and economic activity in times prior to the financial crisis. Thus, it is too early for a final judgment.

To support the normalization process, the Fed published a one-page statement regarding policy normalization laying out some basic principles in September

2014. While this was not a detailed strategy, it did provide useful information on key criteria of normalization, sequencing of policy measures and features of the policy environment after normalization.

B. Symmetry

Monetary policy needs to respond to macroeconomic developments, hence a smooth normalization process requires that market participants understand the links between the path of policy instruments and key macroeconomic variables. As noted in section III.C, there is an established view that central banks should act asymmetrically in fighting deflation and guarding against deflation risk. This implies that quantitative easing and near zero policy rates should be kept in place such that interest rates remain lower for longer than in past recession and low inflation episodes during which policy rates did not reach the effective lower bound. Research supporting this approach goes back well before the financial crisis. The asymmetry view is also behind the argument for the safety margin in the inflation objective used to justify the "close to" in the ECB strategy (see ECB 2003, Coenen and Wieland 2003). Thus, the "lower for longer" prescription needs to be taken into account in designing a normalization strategy.

However, the experience of the financial crisis has shown that a low interest rate environment carries its own risks. Taylor (2007), for example, suggests that unusually low policy rates contributed to the excessive build-up of housing prices prior to the crisis. Furthermore, quantitative easing works primarily through increasing asset prices via portfolio balance effects and depressing risk premia. Thus, the longer quantitative easing persists, the greater the likelihood that it induces unsustainable increases in asset prices. Moreover, low interest rates and flat yield curves reduce bank profitability (Borio et al. 2015). This makes it

difficult to raise capital and keeps the banking system fragile. Continued search for yield behavior induced by low interest rates on safe assets may lead to an accumulation of risks in the balance sheets of investors. Perhaps most importantly, interest rate risks on bank balance sheets rise the longer the flat yield curve persists. This is of particular concern in the euro area, where the banking system plays a larger role than in the United States but has built up less capital since the crisis.

Macroprudential policy is typically considered the first line of defense against excessive developments in financial markets. Yet, there is only limited experience with deploying these instruments, in particular, in situations where monetary policy is oriented in a different direction. Furthermore, euro area countries such as Spain that made use of macroprudential measures prior to the financial crisis were not able to stave off excessive increases in asset prices.

Finally, there might be another counteracting asymmetry at work when withdrawing quantitative easing. While instituting and increasing asset purchases may have quite significant effects when financial markets are segmented and dysfunctional, reducing and ending asset purchases once market functioning has improved is likely to have less macroeconomic impact.

With regard to balancing deflation and financial stability concerns, we note that core HICP or GDP deflator have remained in positive territory for many years suggesting no pronounced deflation risk. Unfortunately, there are no quantitative model-based analyses balancing the implications of deflation risks and financial stability concerns. Even so, given the available evidence we think it advisable to lean towards a more symmetric reaction to macroeconomic developments during the normalization phase.

C. Sequencing

In terms of the sequencing of the normalization steps, the question is whether to start with abolishing negative interest rates or with reducing and ending the asset purchases under the EAPP. Savings banks in particular have been outspoken in terms of urging the ECB to abolish the negative deposit rate because of its impact on bank profitability. This reaction is quite understandable given their reluctance to pass on negative interest rates to the large majority of depositors and limited options for lending.

Nevertheless, we would recommend to start with reducing asset purchases. This is also the sequencing the ECB has already indicated to be in line with its existing forward guidance namely "*its expectation that key ECB interest rates will remain at present (or lower) levels for an extended period of time, and well past the horizon of our net asset purchases*" (see, for example, Draghi 2017a, b). Note, in the June 8 meeting the ECB decided to drop the words "or lower" from this statement.

Ending asset purchases will free up medium- and longer-run interest rates. Supply and demand in those markets will better reflect market participants' views regarding future growth and inflation. Thus, medium- and long-term rates will move closer to levels consistent with the recovery observed so far and the outlook for the future. The end of direct central bank intervention in these markets together with improved consistency of market prices and market participants' economic outlook is generally supportive of a smooth normalization with appropriate expectations formation.

Furthermore, higher medium- to long-term rates will improve bank income from new loans at higher rates relative to deposit rates which will remain close to the short-run policy rate. Thus, ending asset purchases prior to raising policy rates will also support bank profitability. More importantly, it will limit and eventually

reduce interest rate risk in the banking system which is crucial to achieving a smooth normalization.

Additionally, the reduction in asset purchases allows for a greater degree of gradualism. Thus, it also allows an earlier start. Abolishing the negative deposit rate would have an immediate impact across the yield curve. Thus, the possibility that it is followed by turbulence and market overreactions might be somewhat greater.

With regard to the type of purchases, the corporate bonds purchase program could be stopped right away. It is very small in size relative to the ongoing massive purchases of government debt. Furthermore, it exposes the ECB to criticism that it is favoring large companies relative to small- and medium-size enterprises. As to the PSPP, it is advisable to slow down and stop purchases soon enough such that the ECB need not loosen the self-imposed limits regarding weights on member states, issuer and issue shares as well as yields.

D. Forward guidance and rules

The ECB has provided forward guidance on the future path of policy interest rates conditional on its outlook since July 2013. Generally, transparency about the policy path expected by the central bank is helpful information for market participants' expectations formation. By providing information on expected future policy decisions, policy makers remove some of the uncertainty faced by market participants, namely uncertainty about the policy makers' anticipation of its own policy decisions. Doing so can help stabilize financial and macroeconomic developments and play a useful role during the process of policy normalization and beyond that. It is sensible to provide guidance conditional on the outlook

rather than installing unconditional guideposts or commitments that then need to be fulfilled even if economic developments unfold differently from the outlook.

The exact numerical expectation of the policy path and the length of time, for which the Governing Council anticipates policy rates to stay at current levels, remain uncertain to market participants. However, already in 2013, President Draghi stressed that "*there is no precise deadline for this extended period of time. As a matter of fact, you can … extract a reaction function and, from there, estimate what would be a reasonable extended period of time*" (Draghi 2013).

Other central banks provide much more detailed information on anticipated policy paths. For example, the U.S. Fed regularly publishes a survey of policy rate expectations of FOMC members. This so-called dot chart receives much attention by Fed watchers. It indicates also the range of disagreement among FOMC members which may either be due to different forecasts of macroeconomic developments or to different views on the appropriate reaction function for the central bank. Good examples of reaction functions are simple interest rate rules such as the difference rule or Taylor's level rule reviewed in section III.C.

The central banks of Norway and Sweden even go a good bit further. They regularly publish not only inflation and output growth forecasts with associated uncertainty bands but also their policy rate forecast with the respective uncertainty band. Thus, they spell out clearly when they expect the next rate increase to occur. Of course, if the economy develops differently from the forecast, the central bank's anticipated policy path will also change. Clearly, having such insight on the central bank's perceptions and plans helps market participants to better prepare for the future. The central banks of Norway and Sweden have published such information for some years without triggering any significant disruptions.

With regard to an effective normalization strategy for the ECB, a first step would be to reveal more information about its current expectation regarding how

long it anticipates policy rates to stay at current levels and to further increase policy accommodation by means of asset purchases. Such a clarification of its forward guidance could be very effective in stabilizing market participants' expectations and reducing the risk of turbulence. If it is too difficult to form agreement on such a path among ECB Governing Council members another sensible approach would be to provide information on council members own forecasts similar to the survey of FOMC members. This information could simply be added to the regular ECB accounts of the monetary policy meeting that have been published since February 2015. These accounts have already provided some useful information regarding the range of views discussed at the Council meetings. A third option would be to build the ECB staff forecast around the staff's best possible forecast of the policy path rather than around market expectations and publish it along with the staffs output and inflation forecasts.

Another sensible aspect of a normalization strategy would be to quantify the link between the policy path and key macroeconomic variables. Thus, the ECB could reveal information on a reaction function or functions that are useful to describe the endogenous policy response of the ECB to real and monetary variables. If it is too difficult to decide on appropriate reaction functions for this purpose in the ECB's Governing Council, it would still be useful to reveal what reaction functions would ensure consistency between the ECB's staff forecast for inflation, output and interest rates.

Policy reaction functions or rules are not meant to be followed in a slavish manner. There may be important reasons for deviating from past responses to inflation and other key macro variables, either because there are special factors and data to be taken into account, or because the structure of the economy appears to have changed, or because policy makers' preferences have changed due to changes in the decision making council. The central bank could then simply explain its reasons for deviating from the rule or reaction function.

Interestingly, with the new Republican majority in both Houses of the US Congress, the Fed Oversight Reform and Modernization (FORM) Act that was passed by the House of Representatives in November 2015 is receiving renewed attention. Section 2 requires that the Fed: "*describe the strategy or rule of the Federal Open Market Committee for the systematic quantitative adjustment*" of its policy instruments; and compare its strategy or rule with a reference rule. Some Fed representatives including FOMC Chair Yellen and Vice Chair Fischer have been critical of this initiative fearing that it would restrict too much their ability to act in a discretionary manner (see for example, Fischer 2017). Even so, FOMC Chair Yellen has repeatedly made use of simple rules such as the Taylor rule to structure her discussion of the appropriate policy stance (see Yellen 2015, 2017).

Most recently, the Federal Reserve Bulletin has included a section on policy rules (see FRB 2017). It states key principles of good monetary policy that are incorporated in simple rules. Furthermore, it provides information on the implications of different policy rules for the policy path. These include a first-difference rule and versions of Taylor's rule. One of these rules even incorporates the "lower for longer" prescription by extending the time at the effective lower bound to make up for preceding interest rate prescriptions below the lower bound. Another way to account for periods when the rule prescribes policy rates in negative territory is quantitative easing. Differences in measures of inflation, the equilibrium interest rate and appropriate policy responses are standard issues in monetary policy making. The rules are useful in order to translate these differences into policy instrument space in a systematic way.

At this point there is necessarily wide-ranging speculation about how the ECB might eventually move towards a more normal policy environment. An exposition of policy paths under different rules consistent with the ECB staff forecasts would have the potential to help market participants focus on likely scenarios and improve the predictability of ECB policy. It would not commit the ECB to these

rules nor to the implied policy path but indicate the consequences of different assumptions for the policy path.

E. Financial dominance fears

The vulnerabilities of the financial sector in the euro area raise concerns that a monetary tightening could induce financial turmoil. The low profitability of euro area banks makes it difficult to keep adequate capital buffers and weakens their resilience to adverse shocks. An increase in interest rates and thus loan servicing costs could increase the proportion of impaired loans and require additional loss provisions and lower profits further. The "evergreening" of loans induces additional fragility. Capital losses resulting from bond yield could induce additional needs for write-offs. Investor fears regarding bank profitability could trigger sharp adjustments in bank stock valuations and cause financial turmoil.

Thus, the ECB faces an incentive to postpone monetary tightening if it endangers the stability of banks that have been under its supervision and previously declared in good health. This question of moral hazard is known under the term financial dominance. Of course, the ECB may be fully committed to pursue policy normalization as required by macroeconomic developments. Potentially, however, doubts might prevail among market participants. For this reason, enhancing credibility by establishing a track record is key. Additionally, it may be helpful to address financial stability concerns and possible fears of a financial dominance of monetary policy in the communications strategy.

The ECB's role in banking supervision provides it with privileged information and influence. It can encourage banks towards raising capital and initiate bank restructuring or resolution. It would have been preferable to separate the responsibility for banking supervision from monetary policy and place it in a

different institution to avoid moral hazard in the conduct of monetary policy. However, this would have required changing EU treaties.

At this point, the ECB's best chance is to encourage banks to raise sufficient capital such that there is no doubt that they can weather a normalization of interest rates. In particular, careful attention needs to be given to interest rate risks building up on banks' balance sheets. Furthermore, the ECB is well advised to establish a track record for initiating timely and effective bank restructuring or resolution when this is needed. In this regard, it is key for building credibility to follow the new bail-in rules of the banking union. The case of Banco Popular in Spain was a good example, while the search for loopholes and exceptions in the case of Italian banks Veneto Banca, Banca Popolare di Vicenza and Banca Monte dei Paschi was not.

F. Fiscal dominance fears

In a monetary union of otherwise largely sovereign member states it is crucial that member governments understand that they cannot rely on the ECB to postpone a tightening that is called for by area-wide macroeconomic conditions. Common monetary policy cannot be directed towards individual countries. Thus, it cannot deal with the heterogeneity of economic recovery. Additionally, monetary policy is incapable of dealing with structural differences leading to differential potential growth rates. Governments are responsible for structural reforms that can improve efficiency and competitiveness thereby raising potential growth. Although the ECB regularly admonishes governments to use the period of accommodative monetary policy for initiating and implementing structural reforms, OECD data on reform responsiveness indicate a slowdown in 2015

relative to earlier years (OECD 2016). Yet, the ECB cannot postpone a normalization of its policy to allow governments to postpone structural reform.

It can be expected that risk premia on government bonds from highly-indebted low-growth member states will rise once the ECB slows down and ends purchases of their debt. Debt service costs will rise as governments roll over maturing bonds. There is a danger of unsustainable dynamics and a fiscal crisis.

The ECB is legally bound by the prohibition of monetary financing. The PSPP is not meant to provide support to governments that are in danger of losing market access. The ECB intends to use Outright Monetary Transactions (OMT) as a tool for repairing monetary policy transmission in individual countries and some might consider it as a tool for managing fiscal stress. This program requires that the government concerned asks for an ESM program. However, ESM loans that are guaranteed by member states are actually a much more appropriate tool for helping countries that have lost or are in danger of losing market access.

The effectiveness of ESM loans would be improved if they would not only come with conditionality regarding program countries' policies but also be associated with a debt restructuring mechanism. Proposals for such a mechanism have been presented, for example, in IMF (2015), GCEE (2016) and Deutsche Bundesbank (2016). They would allow for immediate maturity extension or even haircuts if fiscal sustainability could not be secured otherwise. Accordingly, private investors would participate in the costs of rendering the debt sustainable.

Instead, market participants may expect the ECB to postpone a normalization of monetary policy if the resulting increase in interest rates and risk premia threatened fiscal sustainability in some member states. Such an adjustment would effectively subordinate monetary policy to fiscal needs. A regime characterized in this manner is referred to as fiscal dominance. Ultimately, it would imply that the central bank loses control of the price level and cannot fulfill its mandate. A rationale for such fears might be that the fiscal needs of a highly indebted and

large euro area economy such as Italy may exceed the funding potential of the ESM. Furthermore, anti-EU parties might push for exiting the common currency rather than accepting an ESM program with conditionality. Fears of fiscal dominance fear among market participants would certainly hinder expectations formation consistent with a smooth monetary policy normalization.

Of course, the ECB can and should assert that it is bound by its mandate and will not allow a situation of fiscal dominance to emerge. In fact, ECB President Draghi did so publicly in the context of the OMT announcement when he argued that the conditionality of the ESM program required with OMT protects the ECB's independence (Draghi 2012). A similar assertion could be part of the communications strategy regarding the normalization of monetary policy. It should emphasize that ESM loans are the appropriate tool for handling fiscal stress and that governments should not shy away from conditionality if assistance is needed. However, it would be ideal if governments of member states explained unanimously how fiscal stress in the context of monetary policy normalization is supposed to be addressed. This could be done in the context of an initiative to augment the ESM with a sovereign debt restructuring mechanism. The ECB would gain greater leeway in its decision-making from such an extension of the ESM. From this perspective, the ECB should support the creation of such a mechanism. However, large holdings of government debt expose the central bank to losses. Thus, it was wise to keep national sovereign debt and the risks associated with it on the balance sheet of the respective member state's central bank.

V. Conclusions

Following the decline of euro area inflation to small negative numbers in December 2014, the ECB initiated a large-scale asset purchase program in January 2015. The program resulted in a massive expansion of the ECB balance sheet. Already, since 2013 the euro area economy is experiencing a steady recovery reaching growth rates around 2% per year. Headline inflation has risen rapidly once the decline in oil prices has stopped, while core inflation is rising slowly. At this point, the ECB still continues increasing monetary policy accommodation by purchasing public and private sector bonds at a rate of €60 bn a month, at least till December 2017.

So far, the ECB appears to have pursued an approach to policy that keeps interest rates lower for longer than would be the case in the absence of the effective lower bound on policy rates. While there is an active debate about whether the ECB should end purchases this year or whether it should still continue into 2018, we believe it should be possible to agree that the ECB should develop a strategy for the normalization of monetary policy. Furthermore, the ECB should communicate this strategy very soon such that it can do so ahead of taking steps towards tightening.

We have laid out key elements of such a strategy. The objective is to achieve a smooth process of normalization that is facilitated by an appropriate process of expectations formation in financial, goods and factor markets. Rather than persisting too long with an asymmetric concern for deflation risk, we suggest that the ECB respond in a fairly symmetric fashion to macroeconomic developments, because a long-lasting low-interest-rate environment carries risks for financial stability.

With regard to sequencing, we propose to start with reducing and ending asset purchases first, and then to proceed with raising policy rates in a second stage.

This is consistent with the ECB's forward guidance. In our view, it is key that medium- to longer-term interest rates better reflect market conditions and market participants' expectations rather than interventions by the ECB.

In order to facilitate market participants' expectations that are consistent with a smooth process of normalization, the strategy should provide information on the links between the macroeconomic outlook and the anticipated path for policy instruments. So far, the ECB's forward guidance is fairly rudimentary in that it only speaks of an extended period of time during which the current level of policy rates will likely be maintained. Other central banks provide a good bit more information on the link between macroeconomic and policy developments. Examples include the publication of the central bank's anticipated policy path together with forecasts for inflation and economic activity, publication of a survey of policy makers regarding individual forecasts for the policy path and key macroeconomic variables and publication of policy rule simulations that help translate different assumptions on key variables into differences in likely policy paths. We discuss how the ECB could make use of such techniques in its normalization strategy.

Finally, there is a risk that policy normalization has a negative impact on bank health and the sustainability of some member states finances. The euro area has created institutions that would help managing these risks of monetary policy normalization. We discuss how the ECB can help strengthen the resilience of the banking system and the sustainability of government finances. At the same time, we emphasize that the communications strategy associated with normalization should alleviate potential fears among market participants that monetary policy in the euro area may ever be subject to financial or fiscal dominance.

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