# 04

# EURO AREA: SLOW DOWN BOND PURCHASES, SPEED UP REFORMS

# THE KEY DETAILS IN BRIEF

Macroeconomic development in the euro area was dominated last year by the highly expansionary monetary policy of the European Central Bank (ECB) as well as the marked recovery in those member states that were particularly hard hit by the euro debt crisis, with the exception of Greece.

The ECB resolved in January 2015 to purchase large quantities of public sector bonds and to increase its balance sheet over the next 20 months by more than €1 trillion. To justify its decision, the bank referred to the heightened risk that the oil price decline would result in second-round effects on core inflation and that inflation could remain too low for too long. As a result of the ECB's decision, short, medium and longer-term interest rates have fallen into negative territory. Interest rates at the short end are already more than half a percentage point below a reaction function that closely tracks the path of past interest rate decisions. If the ECB responded to current inflation and growth prospects in the same way as it did in the past, it would not have contemplated extending the purchase programmes to public-sector bonds on such a scale. Core inflation, the GDP deflator and long-term survey-based forecasts of inflation also show no signs of a dangerous self-reinforcing deflationary trend.

The low interest rate level across the yield curve does however harbour risks to financial stability. If it continues, it will undermine banks' and insurance companies' business model and favour exaggerated asset prices. Hiking interest rates too late, and ending up having to raise them abruptly, could result in a slump in asset prices. Moreover, favourable financing conditions can tempt governments to postpone or abandon consolidation and structural reforms. The ECB should not attempt to use additional bond purchases to prevent market corrections that would lead to higher interest rates in the medium and longer term. Instead, it should slow down the expansion of its balance sheet or even end it earlier than announced.

The discussion about possible secular stagnation and long-term equilibrium real interest rates of close to, or even below zero percent is speculative. Such low equilibrium interest rates can indeed be derived from theoretical models. On the basis of the empirical evidence, however, we cannot reliably conclude that medium and long-term equilibrium interest rates have fallen to the same degree as actual real interest rates. The heterogeneous developments in the euro area constitute evidence against such stagnation and is consequently an argument against recommendations for launching large new spending programmes and incurring greater public debt. On the contrary: those countries that have followed the path of consolidation and reform most decisively have succeeded more quickly in returning to higher growth.

It was possible to avert the threatening risk of political contagion that arose out of the Greek crisis. Reversing important consolidation and reform steps in individual crisis countries would jeopardise the reform strategy's credibility and its supply-side effects. Proposals to launch new debt-financed spending programmes in Germany and to postpone reforms designed to promote competition with a view to deflationary effects do not withstand closer scrutiny.

# I. DISPUTE ABOUT THE PATH TO MORE GROWTH

263. Three developments had a major impact on the euro area's economic situation last year. In reaction to the decline in inflation at the end of 2014, the European Central Bank (ECB) decided to **purchase large quantities of government bonds**. Parallel to this development, the newly elected Greek government rejected the reform and consolidation agenda agreed upon with creditors, thus creating a **political crisis in the monetary union**. By contrast, the **surprisingly marked recovery in those crisis countries that swiftly implemented reforms**, such as Ireland, Spain, Portugal and Cyprus, proved that the "loans with conditions" approach works effectively.

The predicament in Greece did not leadto negative economic contagion effects in the other member states of the euro area just as financial market participants and the German Council of Economic Experts had expected (Feld et al., 2015). As a result of the European partners' determined negotiating position and the ceiling the Governing Council of the ECB set on emergency liquidity assistance, the Greek government finally relented. The German Council of Economic Experts published a special report on the lessons learnt from this crisis concerning the European Monetary Union architecture (GCEE Special Report 2015).

264. We will primarily assess the euro area's monetary and reform policy in the pages that follow. Two **very different positions** must be considered in this assessment.

One camp believes a **lack in demand** to be the biggest problem. Accordingly, aggregate demand in leading industrialised countries can stagnate far below economic potential for a long time (Summers, 2014a, 2014b). Market participants' expectations of deflation would prevent extremely low nominal rates from impacting real interest rates. As a result, real interest is too high for the demand for credit for investment purposes to align with the supply resulting from overall economic savings. Thus even lower nominal rates would be required for reaching an equilibrium. Yet, central banks, are unable to sufficiently ease monetary policy. Hence, fiscal policy is claimed to offer the only way out. Governments are urged to **heavily increase public spending** and incur **additional debt** (von Weizsäcker, 2015; de Grauwe, 2015). Adherents of this camp consider structural reforms counterproductive at this stage. They resultin cost reductions that would have a deflationary effect and worsen stagnation (Eggertson et al., 2014).

265. The other camp believes that high levels of legacy debt and a lack of structural change put a temporary damper on economic recovery (Rogoff, 2015; GCEE Annual Economic Report 2014 items 136ff., 150). Quicker adjustment was also hampered by wage and price rigidity as well as regulation (Taylor, 2014; Draghi, 2015a; GCEE Annual Economic Report 2014 items 139ff.). Accordingly, **sustainable debt consolidation** and **structural reforms**, which reduce excessive regulation, are urgently needed to give competition and market processes

greater effect. Supply-side factors therefore play a key role in overcoming growth weaknesses (Borio and Disyatat, 2014; BIS, 2015). Euro-area crisis countries, in particular, offer an opportunity to increase income expectations permanently and to encourage companies to undertake more investments. Monetary policy remains an effective tool (GCEE Annual Economic Report 2014 box 13). Consequently, there is no reason to postpone reforms due to potential deflationary effects (Draghi, 2015a).

266. This debate has thrown open the question of whether it is appropriate to **extend monetary policy easing** to the purchase of government bonds. It has become even more urgent recently, with the ECB holding out the prospect of an acceleration or extension of its purchase programme (Draghi, 2015b). **In Germany**, **very critical voices** on monetary policy denounced long-term interest rates as too low as early as summer 2014. They claimed this policy would result in market participants taking excessive risks and create imbalances on the financial markets. Some commentators even spoke of an "expropriation of the German saver" and the "destruction of its savings culture" (BVR et al., 2014; Dombret, 2014).

267. In its Annual Economic Report 2014/15, the **German Council of Economic Experts** stated that it generally makes sense to make use of quantitative measures whenever further easing is required but the policy rate is already close to zero (GCEE Annual Economic Report 2014 item 269). It goes on to comment that the ECB nonetheless already pursues a relatively expansionary policy. Arguably, this policy can be justified as a preemptive reaction to deflation risk. However, the deflation risk is relatively low and has to be weighed against longer-term economic risks that arise from potential undesirable developments in the financial sector (BIS, 2015) and the incentive for governments to relax their consolidation and reform efforts. The German Council of Economic Experts consequently concluded that the ECB should not further extend easing by means of massive purchases of government bonds (GCEE Annual Economic Report 2014 items 290f.).

To be sure the **inflation rate** as measured by the consumer price index fell to just below zero at the end of 2014. Yet, this decline was triggered by an unexpected drop in the oil price. Core inflation remained stable in 2014 and 2015. Most recently it rose slightly to almost 1 %, while energy prices declined again considerably in August and September.

268. The ECB resolved on 22 January 2015 to massively expand its balance sheet over the next 20 months by means of **government bond purchases**. ECB President Draghi stressed in his press conference that the risk of the falling oil price inducing second-round effects on core inflation had risen (Draghi, 2015c). He referred to the decline in market-based measures of inflation expectations and the persistently low degree of capacity utilization as additional evidence. While monetary policy easing already had a positive impact on financial market prices, it was judged insufficient to prevent the heightened risks of a prolonged period of low inflation.

269. This decision was, however, **not unanimous**. Some ECB Governing Council members saw no reason to expand existing securities purchase programmes to government bonds. For the first time, the minority position was published in the so-called *ECB Accounts of the Monetary Policy Meeting* (ECB, 2015a; ↘ BOX 9). These Council members estimated the risk of second-round effects to be low and pointed out that generally expectations indicated no deflation but rather an increase in the inflation rate. They said the fall in energy prices was already acting as a stimulus to economic activity as were the policy easing measures decided in summer and autumn 2014. Moreover, they pointed out that the purchase of government bonds bears substantial risks within the special institutional framework of monetary union. Therefore, such purchases should only be used in a precarious deflation scenario, which is not the case.

↘ BOX 9

**ECB publishes minutes of its monetary policy meetings**

The ECB announced as early as 2013 that it would publish minutes of its monetary policy meetings in an effort to increase transparency (GCEE Annual Economic Report 2013 items 188ff.). In publishing these *Accounts*, it joins the ranks of central banks which have been publishing minutes for quite some time. Since 2015, council meetings on monetary policy decisions are no longer held on a monthly basis but only every six weeks. The *Accounts* are published four weeks after the respective meeting. The ECB is thus allowing itself a bit more time than the US Federal Reserve (Fed) and the Bank of England (BoE), but is acting in a manner similar to the Bank of Japan (BoJ).

The structure of the *Accounts* is standardised. In the first part, ECB Executive Board members review the financial market and international economic environments, as well as economic and monetary developments in the euro area. The Executive Board's chief economist – currently Peter Praet – then reviews monetary policy options, also commenting on operational details of specific measures. The second part of the *Accounts* summarises the points brought up in the open discussion. Governing Council members are not named specifically. Firstly, Governing Council members' assessments of economic and monetary analyses are presented. Then, the discussion on the future monetary policy course is summarised. And finally, the discussion on formulating and communicating the decisions is outlined.

The *Accounts* enable market participants to have a clearer picture of the discussion of the Governing Council of the ECB than they could before. In contrast to the ECB President's press conference, arguments of those in favour and against individual measures are explained in detail, illustrating the course of the discussion. Majorities are stated and, for the first time,the public-at-large gets a summary of the minority arguments. In its Annual Economic Report 2013/14, the German Council of Economic Experts welcomed the ECB's announcement that it would publish minutes of its monetary policy meetings (GCEE Annual Economic Report 2013 item 189). The first minutes already proved to be a useful source of information for observers as theycontain the arguments for and against the massive expansion of the ECB balance sheet by means of government bond purchases. The fact that ECB Governing Council members are not referred to by name is not as important , as certain members publicly announce their opposition in advance or after the fact. However, the minutes are not sufficiently detailed for an historical assessment of monetary policy. It would be useful if transcripts of meeting recordings were published along with the analyses and estimates presented, such as is the case for the US Federal Reserve (Fed) five years later (GCEE Annual Economic Report 2013 item 190), and not 30 years, as announced thus far.

# II. FROM FALLING ENERGY PRICES TO EXTENSIVE PURCHASES OF GOVERNMENT BONDS

270. The ECB Governing Council's discussion on purchases of government bonds was based on the development of inflation since mid-2014. Medium and longer-term interest rates fell into negative terrain as a result of the announcement. At the same time, the euro devalued heavily while asset prices rose. In the following, the policy decisions are being reviewed and associated risks considered.

## 1. The development of inflation and energy prices

271. As measured by the consumer price index, euro area inflation fell to just under 0 % at the end of 2014. ↘ CHART 40, LEFT The monthly rate declined once again in September 2015 to −0.15 %. This constitutes technical deflation, however only in the form of a short-lived and very slight decline in consumer prices, which roughly corresponds to the price decline in mid-2009. This time, **energy prices alone were the driving force behind the decline in inflation**. Core inflation remained positive over the past eight quarters (0.7 % - 0.9 %). In September it stood just under 1 %. The gross domestic product deflator, which is a broader measure of the development of domestic prices than the consumer price index, already rose again above 1 % in the first six months of 2015.

272. Energy prices plummeted in the months of December 2014, January, August and September 2015, in particular, and caused negative monthly growth rates of the

↘ CHART 40

**Inflation measures and consumer price index in the euro area**



1 – Change to the previous year of the respective index  2 – Values calculated on basis of the ECB's annual forecasts.  3 – Own calculations of the overall HICP and the contributions of the sub-indices, seasonally adjusted.

Sources: ECB, Eurostat

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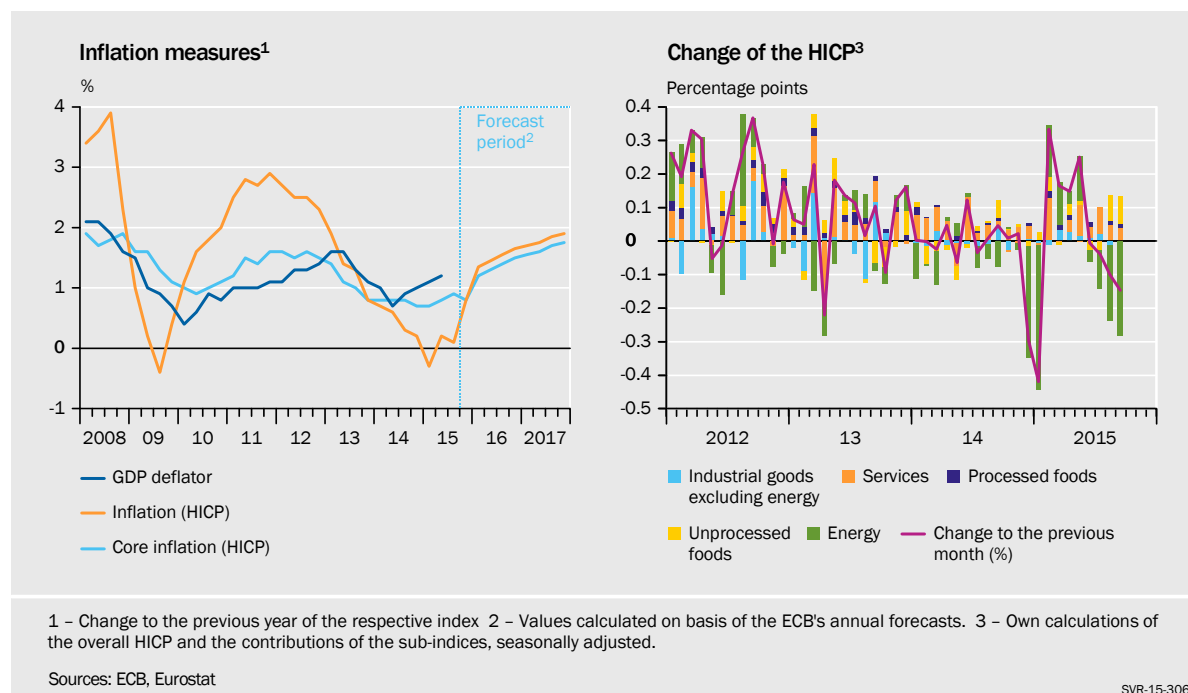
composite index. ↘ CHART 40, RIGHT No negative second-round effects of energy prices impacting core inflation have been noted thus far. Due to a lack of observation, it is impossible to prove whether second-round effects would have occurred if the ECB had not decided to purchase government bonds. A point to the contrary is the rise of the composite index as early as February 2015 following the extremely negative energy price spikes. The main driver of energy products' price development as compared to that of other goods tends to be first and foremost the supply of and demand for energy, instead of monetary policy. ↘ ITEM 112 Moreover, there is a certain delay before monetary policy takes effect, meaning that additional easing initially boosts economic output and then further drives up inflation.

273. Some central banks such as the Federal Reserve (Fed), **focus on core inflation** in the communication of their strategy. This enables them to avoid reacting to purely temporary fluctuations triggered by relative price changes in volatile goods sectors such as energy and food. Action is required instead if these price changes impact core inflation and thus the medium-term trend. Despite the fact that the ECB has focused its strategy on the composite index of consumer prices, the HICP, the bank only wants to stabilise it in the medium term and thus comes quite close to a focus on core inflation.
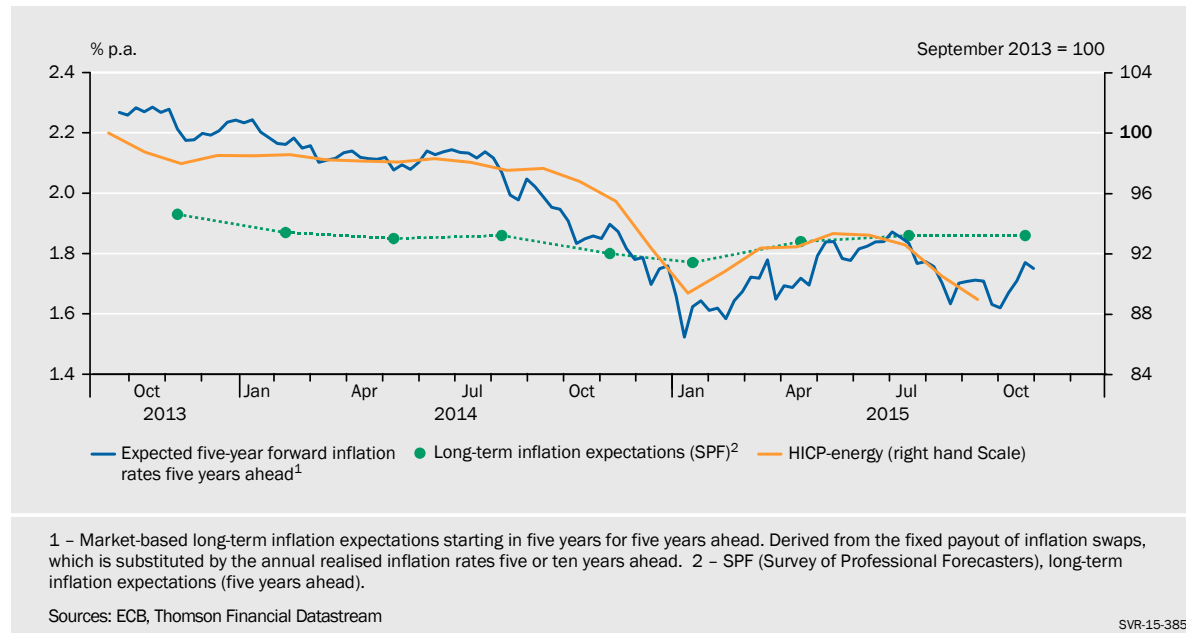
This is reflected not least in the ECB staff's macroeconomic projection in September 2015. It implies a steady rise in inflation as measured by the HICP, in tandem with core inflation. ↘ CHART 40, LEFT This rise results from the empirical assessment regardingsignificant drivers of inflation (ECB, 2015b). Inflation expectations lie above the current rate of inflation. The estimated gap between current and potential GDP has narrowed. The trade-weighted euro has depreciated for the past one and a half years. Indicators of oil price development signal a slight rise in the future.

274. Leading ECB representatives have repeatedly justified policy easing measures since summer 2014 by referring to **market-based inflation forecasts** (Draghi 2014a, 2015c; Constâncio, 2015). In their argument, they linked the decline of the long-term market-based forecast to the risk of a **decoupling of longer-term inflation expectations** from the ECB's inflation objective, which would induce heightened risks of deflation. The five- to ten-year inflation rate projection based on financial derivatives did indeed decline in the second half of 2014 from around 2.2 % to a bit below 1.6 %. ↘ CHART 41

However, the most important reference point for long-term inflation expectations is the ECB's inflation objective. Assuming that the ECB will do what is necessary to stabilise the medium-term inflation rate below but close to 2 %, the long-term forecast should be near this value. For this reason the results of the survey of professional forecasters (SPF) for the inflation rate expected in five years have been bound in a range between 1.8 % and 1.9 % for a long time. By contrast, market-based long-term forecasts,have ranged between 2.4 % and 2.8 % from 2004 to 2009 and between 2.0 % and 2.6 % from 2010 to 2013. When those changes occurred, they did not attract particular attention.

↘ CHART 41

**Long-term inflation forecasts and energy prices in the euro area**



1 – Market-based long-term inflation expectations starting in five years for five years ahead. Derived from the fixed payout of inflation swaps, which is substituted by the annual realised inflation rates five or ten years ahead.  2 – SPF (Survey of Professional Forecasters), long-term inflation expectations (five years ahead).

Sources: ECB, Thomson Financial Datastream

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275. Market-based long-term inflation forecasts depend not only on inflation expectations of market participants. They include risk premia that compensate investors for inflation uncertainty. They are also influenced by market liquidity and unusual supply and demand factors (Bauer and Rudebusch, 2015). No reliable empirical assessments can be made about the **accuracy** of long-term forecasts due to the short length of available time series. However, there are recent empirical studies concerning one- to two-year forecasts in the United States. They find thatthese forecasts largely correspond to immediately preceding inflation developments. Thus, they **scarcely contain useful information about the future**.

276. **Survey-based forecasts**, in contrast, provide the best results in comparative analyses (Ang et al., 2007; Faust and Wright, 2013; Bauer and McCarthy, 2015). **Market-based forecasts** for the United States, which are based on inflation-protected government bonds, fell considerably just as did those for the euro area at the end of 2014 and again in July and August 2015. Their development mirrored that of energy prices. ↘ CHART 41 This example confirms the empirical results, which show that market-based forecasts overreact to previous near-term outcomes. For this reason, they should not be used as a the main basis for important monetary policy decisions.

## 2. Negative interest rates and the expansion of the ECB balance sheet

277. The ECB already lowered its key policy rate in June and September 2014 from 0.25 % to 0.05% and introduced a negative deposit rate of −0.2 %. As a consequence, the average interest rate for overnight interbank transactions referred to as the **Eonia rate moved into distinctly negative territory.** ↘ CHART 42, LEFT It is bounded below by the deposit rate, which the ECB cannot however continue
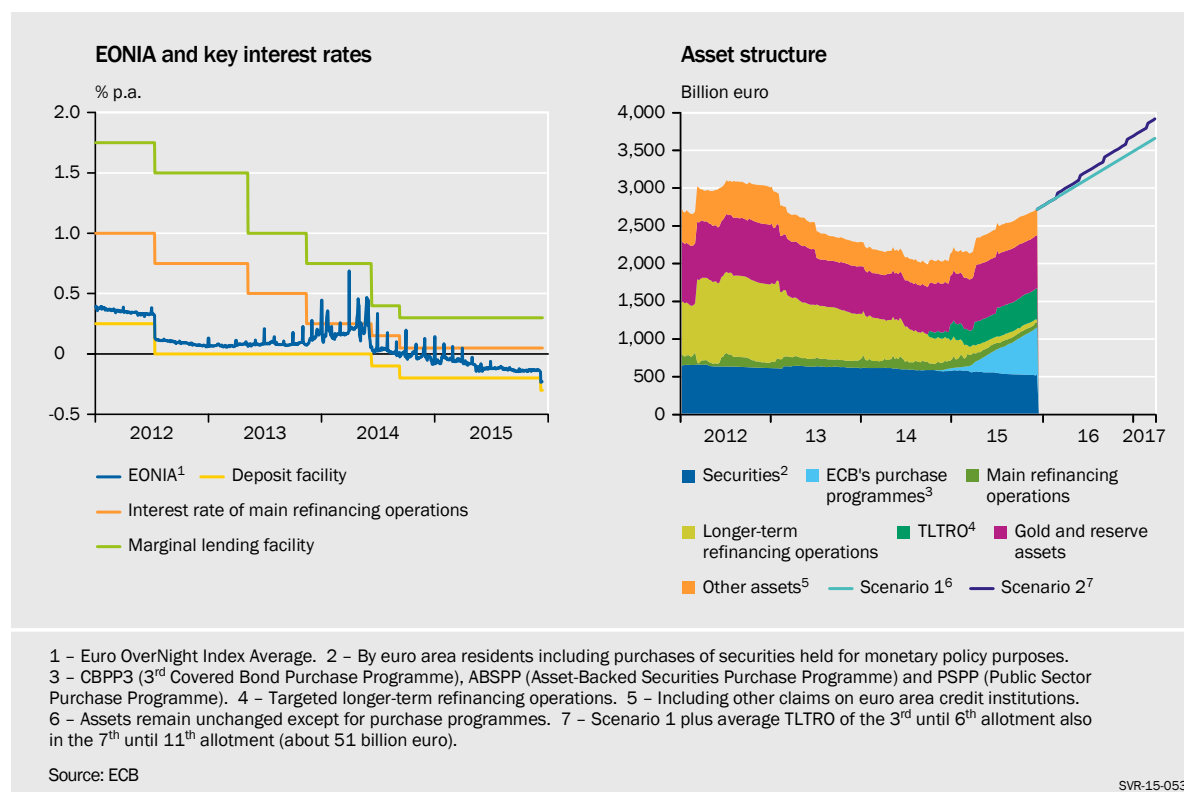
to lower indefinitely. From a certain level onwards it would be cheaper to hold balances in form of cash. The Swiss National Bank even demanded −0.75 %. According to ECB President Draghi, the rate of −0.2 % attained in September 2014 was an effective lower bound (Draghi, 2014b). Forward prices for the Eonia rate indicate however that the market had, in the first half of 2015, factored in a further rate cut by the end of the year (Cœuré, 2015).

278. With the central bank pushing the key policy rate for short-term refinancing operations with banks down as low as possible, other tools consequently come into play in its stead. The central bank can extend the term of the refinancing operations in order to reduce longer-term interest rates, which lie above the short-term rates due to term and risk premia. It can also buy securities in order to further expand its balance sheet while maintaining constant policy rates and thereby stimulateaggregate demand. This is referred to as **quantitative easing**, which is tantamount to continuing monetary policy in pursuit of the same goal but using other instruments. The central bank can adjust the extent to which it expands its balance sheet to compensate for the reduced effectiveness the short-term interest rate channel. Preemptive quantitative easing may be appropriate if a sustained period of deflation threatens and the effectiveness of quantitative instruments is uncertain (Orphanides and Wieland, 2000; Auerbach and Obstfeld, 2005; GCEE Annual Economic Report 2014 items 264ff.).

279. The ECB decided in June and September 2014 to undertake **targeted longer-term refinancing operations (TLTRO)** and launched **purchase programmes for private sector securities** (GCEE Annual Economic Report 2014 items 238ff.). ↘ TABLE 15 Since then, the euro system's balance sheet has ex-

↘ CHART 42

**EONIA and ECB's key interest rates as well as the asset structure of the ECB**



EONIA and key interest rates

Asset structure

1 – Euro OverNight Index Average.  2 – By euro area residents including purchases of securities 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 – Targeted longer-term refinancing operations.  5 – Including other claims on euro area credit institutions.
6 – Assets remain unchanged except for purchase programmes.  7 – Scenario 1 plus average TLTRO of the 3rd until 6th allotment also in the 7th until 11th allotment (about 51 billion euro).

Source: ECB

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panded again. ↘ CHART 42, RIGHT The preceding decline was due to the fact that banks repaid the three-year long-term refinancing operations (LTROs), which they utilised in December 2011 and February 2012 to obtain liquidity of €1,018.7 billion from the ECB. With the reduction of sovereign yield differentials and related tensions on the financial markets, banks took advantage of the early repayment option to reduce their precautionary cash holdings. Instead, the ECB offers extremely low four-year fixed rates with the new TLTROs.
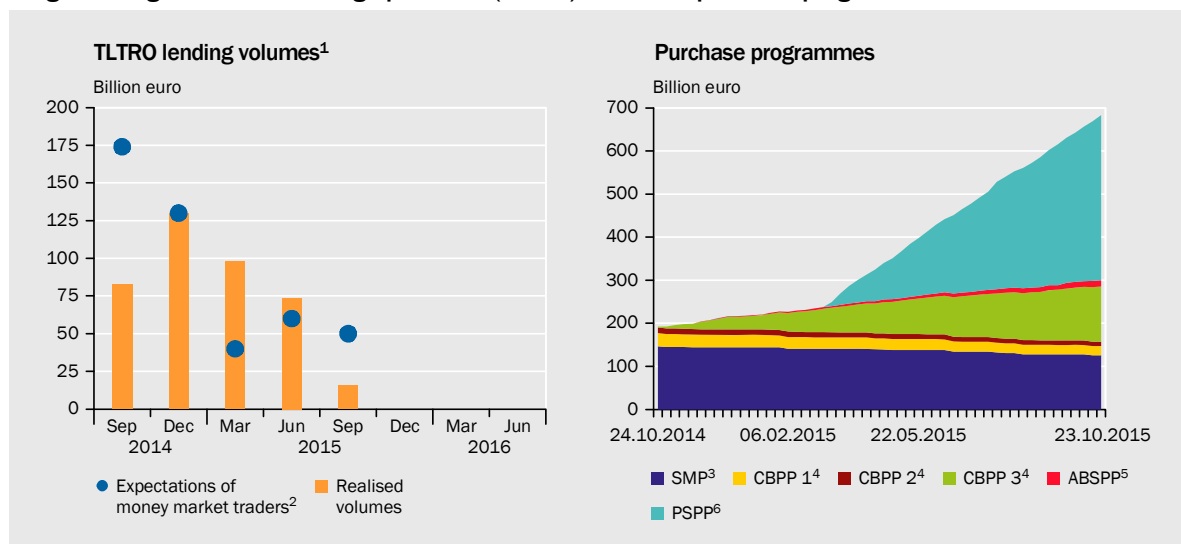
↘ TABLE 15

**New ECB programmes since mid-2014**

| Programme | Announcement | Measures | Start | Tentative end | Volume to date (in € bn) |
|---|---|---|---|---|---|
| Targeted longer-term refinancing operations (TLTROs) | 5 June 2014 | Refinancing operations with a maximum four-year maturity, three remaining operations | 24 Sept. 2014 | 26 Sept. 2018 | 399.6 |
| Covered bond purchase programme 3 (CBPP3) | 4 Sept. 2014 | Covered bond purchase programme | 20 Oct. 2014 | Sept. 2016 | 128.1 |
| Asset-backed securities purchase programme (ABSPP) | 4 Sept. 2014 | Asset-backed securities purchase programme | 21 Nov. 2014 | Sept. 2016 | 14.7 |
| Public sector purchase programme (PSPP) | 22 Jan. 2015 | Purchase programme for government bonds and agency bonds | 09 Mar. 2015 | Sept. 2016 | 383.1 |

280.　A premium of 0.1 percentage points was still added to the key policy rate for the first two **TLTROs** in September and December 2014. Above all the volume of the first operation was well below expectations. ↘ CHART 43, LEFT The second operation undertaken after the ECB's comprehensive assessment met with the demand expected. The volume of the two operations at €213 billion fell considerably short of the maximum €400 billion possible (GCEE Annual Economic Report 2014 item 239). The potential volume of the remaining operations is not any more linkedto the outstanding loans to the private sector (excluding housing loans) at the reporting date 30 April 2014, but to the increase in lending to this sector since. The interest premium was abolished effective January 2015. Thus banks only pay a fixed interest rate of 0.05 % until September 2018. The volume of the refinancing operations in March and June 2015 totalling €98 and €74 billion, respectively, considerably exceeded the expectations of €40 and €60 billion (Reuters, 2015a, 2015b). Thus the TLTROs made a **considerable contribution to the balance sheet expansion** observed.

281.　The new **purchase programs for private securities** comprise the third covered bond purchase programme (CBPP3) for covered bonds and the asset-backed securities purchase programm (ABSPP) for securitised loans. By the middle of October 2015, the ECB purchased covered bonds under the CBPP3 totalling €128.1 billion. This amount is four times higher than that for the previous two programmes (CBPP1 and CBPP2). The ECB purchased securities totalling only €14.7 billion under the ABSPP. This is likely due to the restriction on ABSs to senior or guaranteed mezzanine tranches. Total purchases exceeded the vol-

↘ CHART 43

**Targeted longer-term refinancing operations (TLTRO) and ECB's purchase programmes**



TLTRO lending volumes[1]
Billion euro

Expectations of money market traders[2]   Realised volumes

Purchase programmes
Billion euro

SMP[3]   CBPP 1[4]   CBPP 2[4]   CBPP 3[4]   ABSPP[5]   PSPP[6]

1 – Three remaining allotments within the TLTRO-framework in December 2015 as well as in March and June 2016.  2 – Survey among money market traders by Reuters according to press releases on http://de.reuters.com/article/economicsNews. 3 – Securities Markets Programme. 4 – Covered Bond Purchase Programme.  5 – Asset-Backed Securities Purchase Programme.  6 – Public Sector Purchase Programme.

Source: ECB

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ume of maturing securities under CBPP1 and CBPP2 as well as the securities markets programme (SMP), which was used to purchase sovereign bonds from crisis countries. At the end of 2014, **SMP holdings** still included Greek public bonds totalling €18.1 billion (12.5 %). Italian bonds constituted 51.2 %, followed by Spanish bonds at 19.8 % and bonds from Portugal (9.9 %) and Ireland (6.4). These bonds are to be held until maturity.

282. The ECB Governing Council started a **new purchase programme for public sector debt instruments** with its public sector purchase programme (PSPP). This programme comprises bonds issued by euro area central governments, agency issuers and European institutions. The volume of bond holdings currently totalling €383.1 billion is published on a weekly basis. The country allocation is calculated on the basis of the ECB's capital key, that is, approximately according to relative GDP. Germany has the highest percentage share at 26.6 %. The total monthly volume from March 2015 to September 2016 of the three programmes (CBPP3, ABSPP and PSPP) that together constitute the expanded asset purchase programme (EAPP) is expected to amount to €60 billion. This corresponds to a total volume of at least €1.14 trillion, more than 11 % of euro area GDP in 2014.

283. The ECB has thus made a long-term commitment for additional **massive monetary policy easing**. The ECB's total assets increased by 30.9 % by the middle of October 2015 over its low at the end of 2014 at just under €2 trillion. The new measures totalling €925 billion make up 35 % of total assets. Refinancing operations only rose by a total of 13.5 % due to the expiry of the three-year operations. Bond holdings in the same period increased by 79.1 %. Government bonds constitute the lion's share, and represent an average of 81.3 % of monthly purchases of €60 billion. The planned bond purchases will lead to an expansion of the ECB

balance sheet to more than €3.3 trillion all other things being equal (scenario 1).
↘ CHART 42, RIGHT

This exceeds the high thus far of around €3.1 trillion in July 2012 and corresponds to 33 % of GDP in 2014. If the remaining TLTROs are included with an average value, the balance sheet could be expected to expand to as much as €3.5 trillion or 35 % of GDP (scenario 2). The Fed and BoE balance sheet totals are currently far lower at 26 % and 24 % respectively. Only the Bank of Japan (BoJ) with around 75 % of that country's GDP has an even higher balance sheet total. Refinancing operations play a more significant role in the case of the ECB than in that of other central banks.

## 3. Effects

284. The ECB measures influence economic activity and the development of the general price level tvia a number of **transmission channels**. These channels work first and foremost through medium to longer-term interest rates, lending standards, exchange rates, asset prices and the money supply (GCEE Annual Economic Report 2014 items 280f.). The signalling, confidence, bank lending and portfolio rebalancing channels, above all, play an important role in the process.

285. If the overnight rate reaches the lower bound the medium and longer-term interest rates normally remain positive and can be influenced by the central bank, as they reflect **expectations** of higher overnight rates in the future as well as **maturity, liquidity and credit risk premia**. The maturity premium is a premium that compensates investors for holding longer-term instead of revolving short-term bonds. A liquidity premium is demanded if the bonds cannot be easily sold and converted into cash. The credit risk premium addresses the risk that the borrower or bond issuer may not repay the debt at maturity. Risk premia and expectations regarding future interest rates can only be stripped very imprecisely from the longer-term interest rates. This also applies to other financial market prices such as exchange rates and asset prices, which also reflect expectations of future prices and risk premia.

286. The central bank influences **expectations** by signalling the future path of monetary policy. Its reaction function and inflation and growth forecasts broadly define such a path (Draghi, 2013a, 2013b; GCEE Annual Economic Report 2013 items 185ff.). This path is nevertheless subject to great uncertainty. The explicit forward guidance communication of the central bank provides an additional signal. The signalling effect from the TLTROs with a fixed rate of 0.05 % until September 2018 is even stronger. Securities purchases are also likely to generate an effect via this **signalling channel**. So by announcing the PSPP the ECB sent a clear signal that no policy rate increases should be expected until September 2016 at the earliest. Expectations about future exchange rates and asset prices depend on future interest rates; the signalling effect thus also extends to them. Moreover, central banks could directly influence the exchange rate by means of currency purchases or even fix the exchange rate (Svensson, 2003; Coenen and Wieland, 2004).

287. The confidence channel also has a general effect. If monetary policy measures improve the economic outlook they can trigger higher consumer confidence, a greater spending propensity and expectations of inflation. This **general confidence channel** also has a feedback effect that induces **lower risk premia** (Joyce et al., 2011).

288. A third channel through which expansion of the ECB balance sheet can influence economic activity is specific to the banking sector. With the TLTROs, the ECB provides long-term liquidity to the banks at favourable fixed-rate terms. It thus creates incentives for more new lending and a **greater risk appetite** ↘ ITEM 387 Since the ECB's conclusion of the comprehensive assessment and the asset quality review (AQR) in autumn 2014, the **bank lending channel** is set to bear its full effect again (GCEE Annual Economic Report 2014 item 315). Bond purchases also exert an impact via the bank lending channel. If the central bank directly or indirectly purchases securities from non-banks, banks' reserves and deposits increase. The higher liquidity supply could result in **increased lending**.

289. At the end of the day, expansion of the ECB balance sheet by means of bond purchases impacts financial markets' prices, particularly via portfolio rebalancing. The purchases increase the money supply. Sellers of bonds that do not regard the money received as a perfect substitute tend to rebalance their portfolios by purchasing other assets that are better substitutes (Tobin, 1958; Meltzer, 1980). Via the **portfolio rebalancing channel**, this then results in **higher prices for assets** that are acquired by means of such purchases as well as for other assets that serve as substitutes. **Risk premia decrease** and result in lower medium and longer-term interest rates. The central bank's foreseeable demand reduces the liquidity risk. Security holders can now more easily assume that they will find buyers in case they require more liquidity in the future.
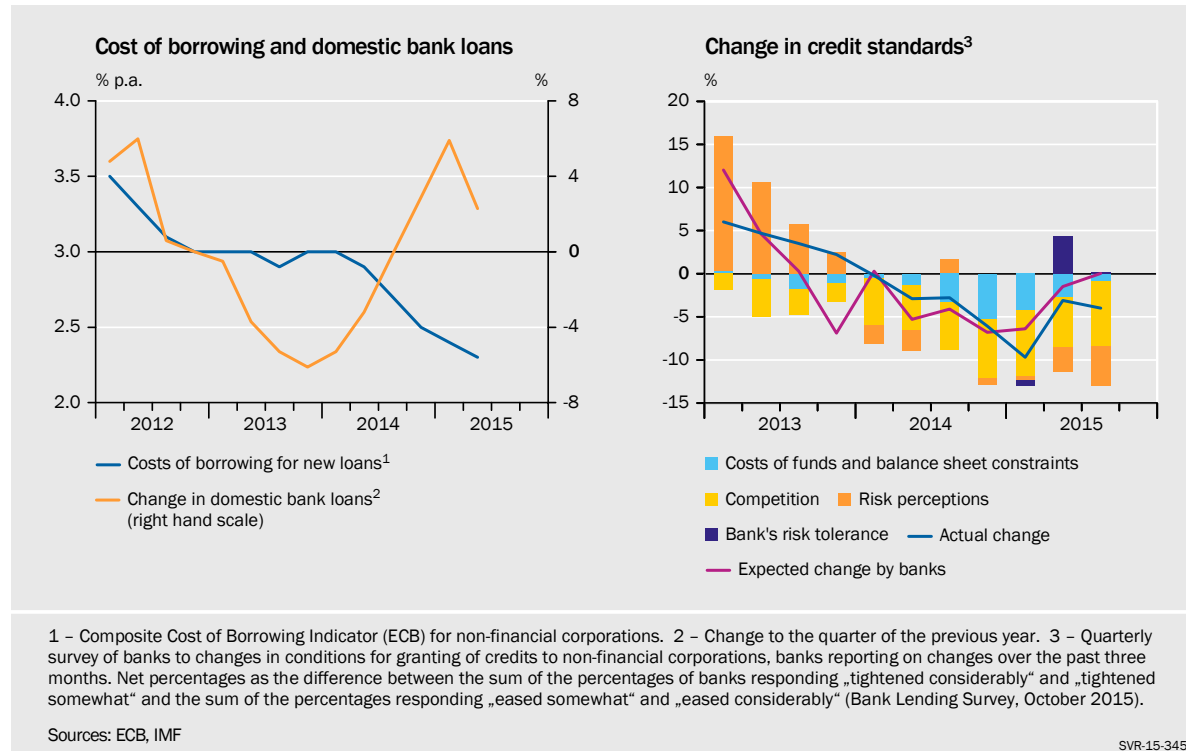
As early as summer 2012, the outright monetary transactions (OMT) proved that credit risk premia can decrease as a result of the central bank announcing purchases. The process of rebalancing into other currencies results in their appreciation. Interest rate, asset and exchange rate effects lead to an increase in real economic demand and ultimately in higher inflation.

290. Among the above-mentioned transmission channels, the signalling and the bank lending channel, in particular, are likely to have contributed to the development of credit in the euro area. The **costs** of new loans have constantly decreased since the beginning of 2014, while lending has improved. ↘ CHART 44, LEFT **Bank loans** have increased again since the third quarter 2014. Moreover, bank lending standards have been less restrictive since the beginning of this year. This is evident from the Eurosystem's bank lending survey. ↘ CHART 44, RIGHT Easier access to loans parallels companies' increasing demand for loans. The improvements likely stem from the interest rate reductions, the negative deposit rate as well as the **signalling effect of the lower TLTRO fixed-rate interest** and the **long-term liquidity provision**, in particular (Constâncio 2015).

Empirical studies on the three-year LTROs of December 2011 and February 2012, which still had a variable interest rate, indicate the latter. Darracq-Paries and de Santis (2015) estimate a significant positive effect on lending (1.7 – 2.5

↘ CHART 44

**Bank loans and financing conditions in the euro area**



Cost of borrowing and domestic bank loans

Change in credit standards[3]

Costs of borrowing for new loans[1]

Change in domestic bank loans[2]
(right hand scale)

Costs of funds and balance sheet constraints

Competition    Risk perceptions

Bank's risk tolerance    Actual change

Expected change by banks

1 – Composite Cost of Borrowing Indicator (ECB) for non-financial corporations. 2 – Change to the quarter of the previous year. 3 – Quarterly survey of banks to changes in conditions for granting of credits to non-financial corporations, banks reporting on changes over the past three months. Net percentages as the difference between the sum of the percentages of banks responding „tightened considerably" and „tightened somewhat" and the sum of the percentages responding „eased somewhat" and „eased considerably" (Bank Lending Survey, October 2015).

Sources: ECB, IMF

SVR-15-345

percentage points) and GDP (0.5 % – 0.8 %). They attempt in their VAR analysis to identify the LTRO's monetary policy effect with information obtained from the bank survey. The LTROs in 2011/12, which were not limited to the private sector, obviously also reduced government bond interest rates (Pattipeilohy et al., 2013). In addition to the TLTROs, **covered bond purchases** are likely to have further improved banking sector liquidity and created incentives for additional new loans and risk appetite.

291. The announcement of extensive government bond purchases in January 2015 is likely to have had an effect via the signalling and portfolio rebalancing channels in particular. There is meanwhile a large stock of literature on the theory and practice of **quantitative easing**, with empirical analyses on Japan, the United States and the UK (GCEE Annual Economic Report 2014 box 13). The effects of balance sheet expansion achieved with bond purchases can only be roughly estimated. **More recent estimates** regarding the impact on UK and US GDP for bond purchases of one percent of GDP range from 0.05 % to 0.6 % (Weale and Wieladek, 2015). As concerns the euro area, Boeckx et al. (2014) and Gambacorta et al. (2014) assess the effects of an ECB balance sheet expansion by 3 % and 2 %, respectively. ↘ BOX 10 They determine an additional effect on GDP of 0.1 % or 0.15 %. Based on these results, the ECB balance sheet expansion is likely to have contributed around 0.5 % to 1 % to GDP growth in 2015.

↘ BOX 10

**New empirical evidence on the effects of bond purchases in the euro area**

The first studies on the impact of bond purchases or their announcement for the euro area are now available. They are subject to great uncertainty as the period of available data was short and the un-

derlying assumptions necessary for the methods used should be viewed critically. After all these results support the view that bond purchases have a significant effect on growth and inflation, similar to other currency areas.

Georgiadis and Gräb (2015) attempt to quantify the **impact of the EAPP's announcement** on 22 January 2015 using an event study approach. The study examines the effects on exchange rates, ten-year government bond yields and equity indices. The researchers also attempt to identify the above-mentioned transmission channels with volatility indices (risk appetite), interest premia on government bonds (confidence), international in- and outflows in bonds and equities (portfolio rebalancing) and real interest rates (signalling). They conclude by comparing the effects with previous programmes (OMT, SMP). Their analysis suggests that the EAPP announcement resulted in euro deprecation, interest rate declines on government bonds and a price increase on national and international equity markets. They determine the **signalling channel** to be the primary factor and **portfolio rebalancing** the secondary one behind the **euro's depreciation**. Although the SMP and the OMT announcement had no impact on exchange rates, the OMT announcement is likely to have had **confidence effects** on the European equity markets. This only reflects however the decline in interest premia of crisis countries, which was negligible with EAPP as expected. Portfolio rebalancing is likely to have already had an effect as a result of the SMP announcement. The method used for the event study did not employ macroeconomic data. It is limited to the announcement effect and has its shortcomings in identifying the effects.

Altavilla et al. (2014), in contrast, perform a scenario analysis based on a Bayesian vector autoregressive model (BVAR) to study the macroeconomic impact of the 2012 OMT announcement. They calculate the potential effects on economic growth and inflation. According to their results, the OMT announcement resulted in increases in GDP (1.5 % - 2 %) and consumer prices (0.7 % - 1.2 %) in Italy and Spain after three years. Only moderate increases can be expected in France and Germany (GDP: 0.3 % and 0.5 %; consumer price index: 0.3 %).

Boeckx et al. (2014) and Gambacorta et al. (2015) assess the overall macroeconomic effect of an ECB balance sheet expansion, using panel VAR and BVAR methods. They assume a 3 % or 2 % increase in the ECB balance sheet. Their results indicate an additional effect on GDP of 0.1 % or 0.15 % and on inflation of 0.08 or 0.1 percentage points.
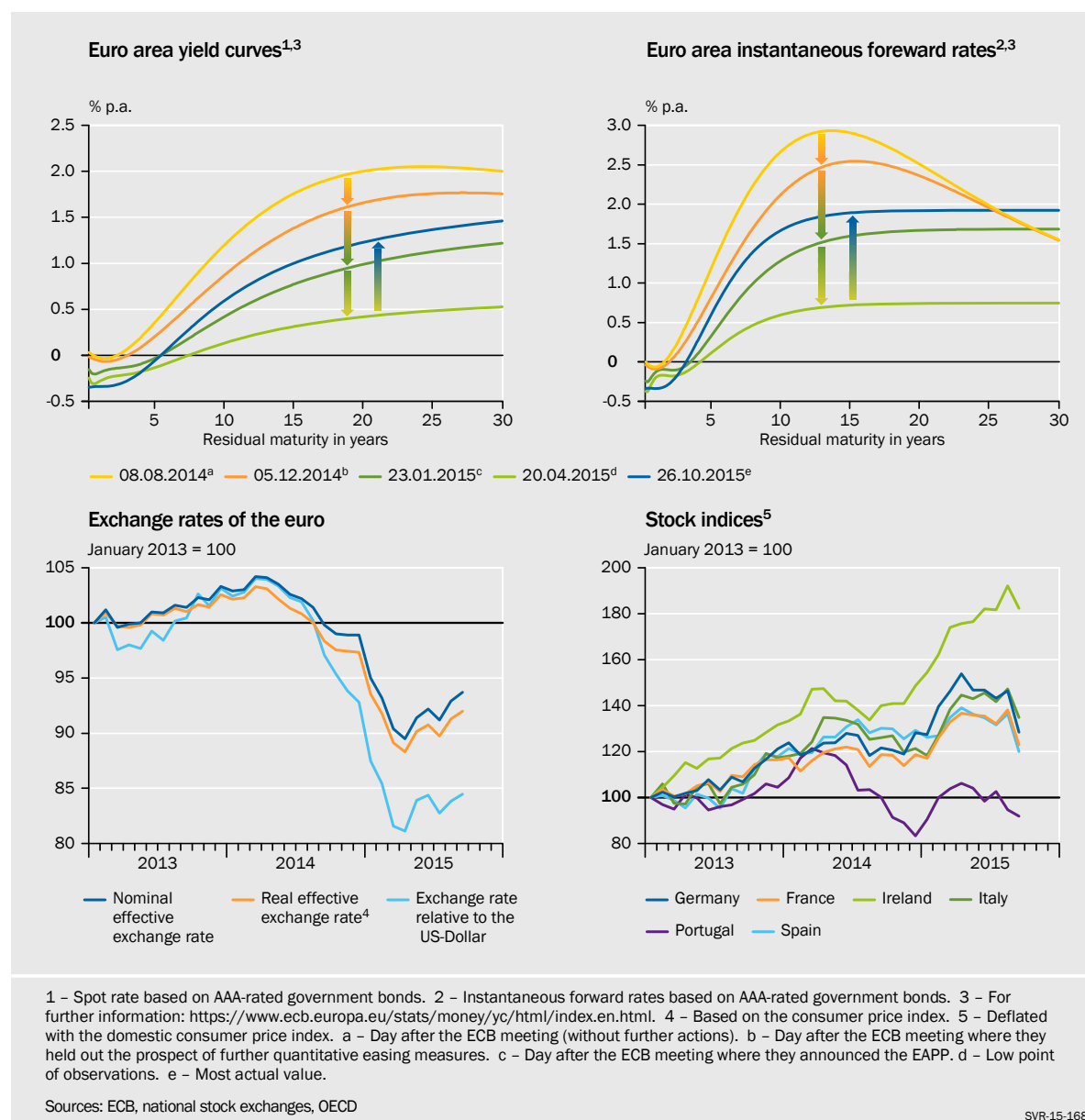
292. The development of the yield curve for the euro area in the months before and after the PSPP announcement in January 2015 provides material for a **case study** which illustrates the impact of bond purchases. The yield curve after the ECB's meeting in August 2014 reflects the **initial situation** before the additional measures in September. ↘ CHART 45, UPPER LEFT It reflects the average of European government bonds with an AAA rating (Germany, Luxembourg, Finland, Austria until February 2015). These are the high liquidity bonds bearing the least default risks according to rating agency assessments. **Short-term interest rates were already close to zero** in August. Interest rates were even slightly negative for a seven-month to two-year horizon and rose to around 2 % for up to a 20-year maturity. As early as the day after the ECB meeting in September 2015, interest rates for up to three years were negative and long-term rates dropped to 1.7 % until the beginning of December.

293. In the ECB press conference on 4 December 2014, President Draghi stated for the first time that the Governing Council not only expected an increase in the balance sheet but intended to expand it to the level reached at the beginning of 2012 (Draghi, 2014c). Consequently the likelihood increased that a major government bond purchase programme would follow. As a result, the yield curve

shifted significantly lower, to around 0.8 % for maturities of 16 years or more, until 21 January 2015. It eased down again between 5 and 15 basis points depending on maturity following the adoption of the PSPP bond purchase programme on 22 January 2015. This trend continued until it hit a low at the end of April. On 20 April 2015, the **yield curve** indicated **below 0.5 % for maturities up to 30 years**.

294. Yield curves for **member states with lower credit ratings** developed similarly with the exception of Greece. Even these member states benefitted from lower interest rates. Moreover interest differentials relative to Germany, which reflect country-specific risk premia declined again at the beginning of 2015. The announcement of government bond purchases is thus likely to have counteracted potential contagion effects from the Greek crisis. Whether or not any contagion effects would have materialised without the announcement cannot be ascertained.

↘ CHART 45

**Instantaneous forward rates, real effective exchange rates and stock indices in the euro area**



Euro area yield curves[1,3]

Euro area instantaneous forward rates[2,3]

08.08.2014[a]  05.12.2014[b]  23.01.2015[c]  20.04.2015[d]  26.10.2015[e]

Exchange rates of the euro
January 2013 = 100

Stock indices[5]
January 2013 = 100

Nominal effective exchange rate — Real effective exchange rate[4] — Exchange rate relative to the US-Dollar

Germany — France — Ireland — Italy — Portugal — Spain

1 – Spot rate based on AAA-rated government bonds. 2 – Instantaneous forward rates based on AAA-rated government bonds. 3 – For further information: https://www.ecb.europa.eu/stats/money/yc/html/index.en.html. 4 – Based on the consumer price index. 5 – Deflated with the domestic consumer price index. a – Day after the ECB meeting (without further actions). b – Day after the ECB meeting where they held out the prospect of further quantitative easing measures. c – Day after the ECB meeting where they announced the EAPP. d – Low point of observations. e – Most actual value.

Sources: ECB, national stock exchanges, OECD

SVR-15-168

295. With its bond purchases, the ECB has set itself the explicit aim of reducing medium and longer-term interest rates and achieving a flattening of the yield curve. To this end it buys bonds with remaining maturities of 2–30 years and a weighted average maturity of 8 years. ECB representatives stressed that the transmission of monetary policy via **portfolio rebalancing** (Cœuré, 2015) was clearly evident. Accordingly, the money supply expansion and the decline in government bond interest rates induced investors to rebalance their portfolios in order to increase the allocation to corporate bonds, equities and foreign securities. Such rebalancing resulted in lower interest rates for corporate bonds, significant depreciation of the euro as well as higher equity prices.

296. The euro has devalued substantially since spring 2014, with **depreciation** accelerating yet again at the beginning of this year. ↘ CHART 45, LOWER LEFT The monetary policy divergence between Europe and the USA played a key role in the process. The euro/dollar rate declined dramatically in the second half of 2014 and the first quarter of 2015. The **exchange rate** is an **important monetary policy transmission channel** (GCEE Annual Economic Report 2014 item 267). Depreciation benefits export performance and stimulates the euro area member states' economies to differing degrees (Breuer and Klose, 2013). Moreover, import prices drive inflation. Since the euro's trade-weighted high against 19 trading partners in March 2014, the currency lost 15.3 % of its value by April 2015.

297. **Share prices** in the four largest euro member states and the (former) crisis countries, excluding Greece, have risen strongly since mid-2014. ↘ CHART 45, LOWER RIGHT The EURO STOXX 50 equity index of 50 large listed companies in the euro area rose by 27.3 % from the beginning of 2015 to mid-April. The ECB's expansionary monetary policy is likely to have been a major factor behind the rise in share prices. Investors' portfolio rebalancing into equities and real estate drives up asset prices. This results in wealth effects that increase private consumption. The prospect of higher demand also makes investments more attractive.

298. A **strong countermovement**, which resulted in a **considerably steeper yield curve**, set in at the end of April 2015. Rates rose to almost 2 % on the longer end of the yield curve. The anticipated future short-term rates that the ECB calculated on the basis of the yield curve thus rose again three years into the future and increased to 2 % at around 15 years. ↘ CHART 45, UPPER RIGHT The estimated maturity premia are thus partially negative. Parallel to this increase in interest rates, the euro rose by 6.4 % on the US dollar until mid-October. The EURO STOXX 50 equity price index fell by 13 % . At the short horizon, that is for the next two years, the anticipated short-term ratesremain in the negative territory, partly below the deposit rate of −0.2 %.

299. While the short-term rates until the end of 2017 reflect the current monetary policy commitment for this period, the longer-term rates are affected by **additional factors**. These include, in particular, expectations on real **economic growth and inflation** in the euro area. The ECB staff's projections in March and June 2015 suggest that the real GDP growth rate will increase to 2 % and the inflation rate to 1.8 % by 2017, for example. Assuming growth stays at this level and could serve as a potential benchmark for the real interest rate in a longer-term equilibrium, nominal short-term rates should stabilise after some years at a

good 4 %. This value reflecting a steady-state equilibrium, thus stands at a good two percentage points above the anticipated short-term rates for the next 30 years.

300. This means there is **potential for additional market corrections** for longer-term rates. Moreover, more stringent regulation, technological changes and a changed composition of market participants have likely resulted in a decline in market liquidity. ↘ ITEM 399 For this reason, portfolio rebalancing could result in stronger price reactions. In view of the central bank's massive intervention, we must continue to assume there will be a risk of volatile spikes as observed in spring 2015.

## 4. An assessment of monetary policy and the associated risks

301. The announcement and implementation of the new purchase programme for public-sector bonds resulted in **extremely low interest rates** across the yield curve. This places the implied anticipated future rates significantly lower than would be necessary in line with the ECB's reaction function. This type of function describes the historical reaction of the central bank to macroeconomic developments. As suggested by ECB President Draghi (Draghi, 2013a, 2013b), previous ECB interest rate decisions can serve as a gauge in this regard.

302. The German Council of Economic Experts uses the **change rule** from Orphanides and Wieland (2013) for this purpose, which describes the ECB's policy to date quite well (GCEE Annual Economic Report 2013 items 182ff.; GCEE Annual Economic Report 2014 item 249). ↘ APPENDIX ITEMS 372FF. It measures the required change in interest rates in response to inflation and growth expectations from the SPF survey. The resulting interest rate band derived from the change-rule has moved above the main refinancing rate in the past three quarters. It therefore exceeds the negative overnight money market rate, which is to a large extent driven by the ECB's deposit rate standing at −0.2 %. However, the ECB has already implemented further easing measures since January 2015. Due to these bond purchases, the instantaneous forward rates have decreased to a level of close to −0.4 % in recent months. The difference between the interest band and implied anticipated future rates even increases further when the interest band is simulated forward by means of the two-year SPF forecasts. ↘ CHART 46 LEFT

The change rule would only signal the necessity of quantitative easing if the resulting interest rate prescriptions fell into negative territory. The **ECB is thus deviating** considerably **from its previous policy**. It is now heading in a similar direction to that of the Fed, which for quite some time now has been keeping interest lower than expected based on its historical reaction to macroeconomic developments.

303. The **Taylor rule** constitutes a second benchmark that points to an extremely low interest rate. The best-known interest rate rule was devised for the Fed's monetary policy (Taylor, 1993). While it tracked the Fed's decisions between
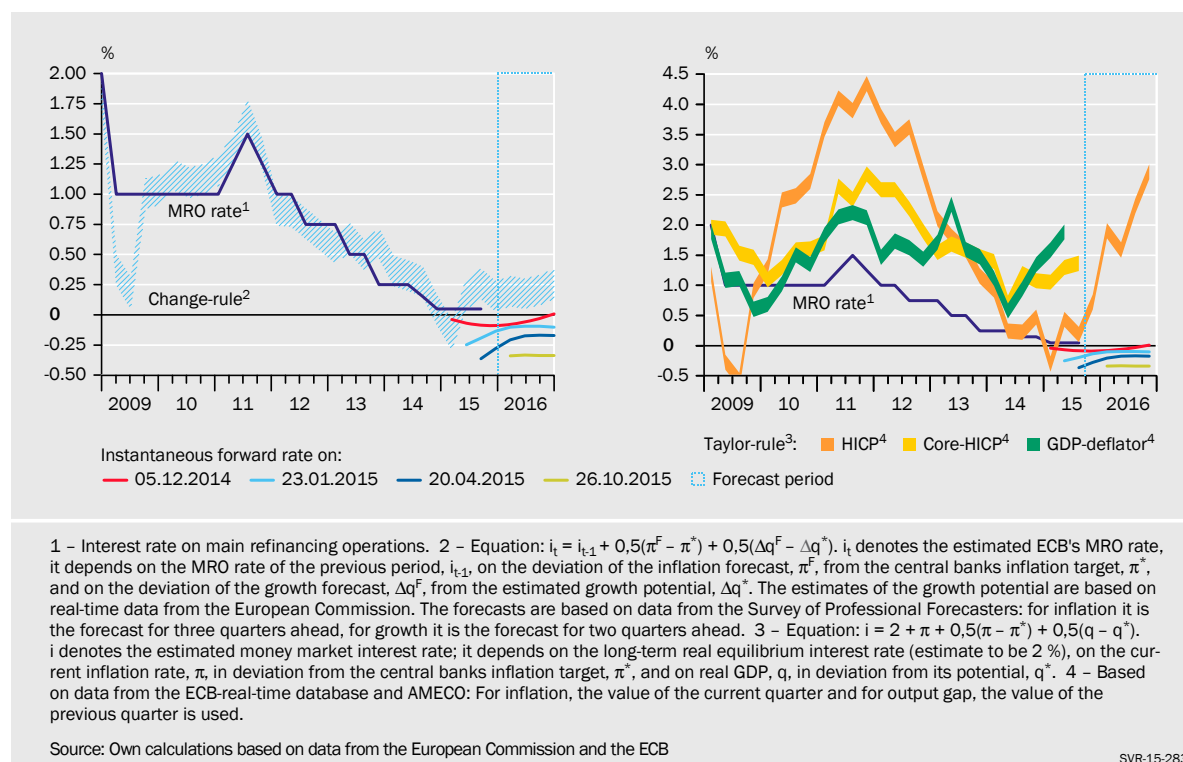
1988 and 1993 well, it indicated too loose a monetary policy before the financial crisis, which contributed to the exaggerated asset prices (GCEE Annual Economic Report 2013 items 180ff.). It also suggests too loose a monetary policy in the run-up to the financial crisis when applied to the euro area (Annual Economic Report 2013 item 181).

Unlike the change-rule, it calculates interest rate prescriptions in **deviation from a long-term equilibrium** of 4 %, which corresponds to the sum of an equilibrium real interest rate of 2 % and the target inflation rate of 2 %. The rule-implied interest rate deviates from this long-term equilibrium when actual GDP differs from trend GDP or inflation from the target rate. The **inflation measure** used here makes a significant difference. The GDP deflator from the original version or core inflation put the Taylor interest rate over 1 % in the second half of 2014 and up to around 1.5 % in 2015. ↘ CHART 46, RIGHT Using the HICP, the Taylor rate falls to the current level of the key policy rate, that is the rate for main refinancing operations, and then rises again quickly in sync with inflation forecasts. The simulation using the HICP underscores that monetary policy should follow a core index or a medium-term forecast of the overall index in order to avoid causing too extreme interest rate spikes. ↘ ITEM 273

304. The **practical importance** of interest rate rules is highlighted by a legislative proposal submitted in US Congress in June (Federal Reserve Accountability and Transparency Act 2015). This would oblige the Fed to communicate its own rule and explain deviations from it and the Taylor rule on a regular basis. In this way, it could reduce uncertainty regarding the exit from the low interest rate policy (Orphanides, 2015). Critics instead fear too much political pressure.

↘ CHART 46

**Interest rate band of monetary policy rules compared to the MRO rate and instantaneous forward rates**



Instantaneous forward rate on:
— 05.12.2014  — 23.01.2015  — 20.04.2015  — 26.10.2015  ⣿ Forecast period

Taylor-rule[3]:  ■ HICP[4]  ■ Core-HICP[4]  ■ GDP-deflator[4]

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, $\pi^F$, from the central banks inflation target, $\pi^*$, and on the deviation of the growth forecast, $\Delta q^F$, from the estimated growth potential, $\Delta q^*$. The estimates of the growth potential are based on real-time data from the European Commission. The forecasts are based on data from 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 – Equation: $i = 2 + \pi + 0.5(\pi - \pi^*) + 0.5(q - q^*)$. i denotes the estimated money market interest rate; it depends on the long-term real equilibrium interest rate (estimate to be 2 %), on the current inflation rate, $\pi$, in deviation from the central banks inflation target, $\pi^*$, and on real GDP, q, in deviation from its potential, $q^*$. 4 – Based on data from the ECB-real-time database and AMECO: For inflation, the value of the current quarter and for output gap, the value of the previous quarter is used.

Source: Own calculations based on data from the European Commission and the ECB

SVR-15-283

305. A recurring argument in current monetary policy discussions about the Taylor rule is that the **equilibrium real interest rate has fallen** and the recommended rate is therefore lower (Yellen, 2015). This would justify the present interest rate level. However, estimated long-term equilibrium interest rates are currently only slightly below 2 %. ↘ ITEMS 321F. If a medium-term equilibrium concept is applied, the estimates are much lower, but the output gap would also have to be adjusted, as GDP would be accordingly closer to potential output. This would raise the Taylor rate again. ↘ ITEM 324 By contrast, the increase in interest rate prescriptions implied by the change rule is independent of the equilibrium real interest rate.

306. Moreover, the persistent downward deviation is often justified with the argument that it prevents the **risk of self-reinforcing deflation** (GCEE Annual Economic Report 2014 items 264ff.). For the majority of the ECB Governing Council members, the new purchase programme for public-sector bonds is necessary to counter the risks of an excessively long period of low inflation rates (ECB, 2015c). The minority of **dissenting votes** in the Governing Council – just like the German Council of Economic Experts (GCEE Annual Economic Report 2014 item 290) – gave greater weight to the risks for financial stability resulting from balance sheet expansion and the particular risks relating to government bond purchases in a monetary union of otherwise sovereign states than to the risk of deflation.

307. The extremely low interest rates across the yield curve may persist even longer due to the ECB's market intervention with purchases of bonds with an average maturity of eight years. This poses **considerable risks to financial stability**. ↘ ITEMS 401FF. The business models of banks and insurance companies are undermined, equity capital is reduced and incentives are created to assume greater risks. There has also been a sharp rise in asset prices, primarily in form of a rational reaction by market participants to the low interest rates. If this monetary policy causes a rapid rise in inflation down the line, swift rate hikes would be in order. **Hiking rates too late** could **threaten the solvency of the banking system** and result in a **slump in asset prices**. A recession would be the likely consequence.

The ECB should not therefore prevent market corrections to the yield curve with additional bond purchases. The argument that macroprudential regulation is sufficient to contain the risks to financial stability is not sustainable (BIS, 2015). If it were to succeed in doing this, it would slow bank lending and reduce asset prices. This would thwart the macroeconomic effects on inflation and growth aimed for by monetary policy. In this case it would be more prudent to limit the risk trigger, i.e. the monetary easing. Experience shows that macroprudential policy is better employed as a complement to monetary policy with the same objective than working in the opposite direction (BIS, 2015; Brunnermeier and Schnabel, 2015; Bruno and Sinn, 2015).

308. The particular risks that result from government bond purchases in a monetary union of sovereign states can be divided into two categories. Firstly, there are

**default risks** and the issue of joint liability of member states. And secondly, there are **incentives for fiscal and reform policy** in the member states.

The Governing Council of the ECB has taken certain precautions regarding the **risk of loss** associated with government bonds. The **risk-sharing principle** only applies to **20 % of the bonds** now, to the bonds of European institutions (12 %) and the bonds acquired by the ECB itself (8 %). It does not apply to the remaining 80 % of bonds to be bought by the central banks of the member states. Losses associated with these bonds would be sustained at national level if a country failed to service bonds due. Defaults of this kind cannot be completely ruled out, as the example of Greece showed this year. The reduction in risk sharing has not made the purchase programme any less effective. Interest rates for countries with lower ratings have fallen just as those for countries rated AAA. Spreads have actually tightened.

Further restrictions mean that government bonds with such low ratings are not purchased. Exceptions require a positive assessment as part of an EU / ESM rescue programme. Greek bonds have therefore not yet been purchased under this ECB's PSPP programme. In any case, central banks should not hold more than 33 % of the outstanding debt securities of a single issuer. The volume that the central bank can buy in a single bond issuance is also restricted, in order to prevent a blocking minority by the ECB being created among bondholders which it could use to avoid **assuming the risk of loss**. The Governing Council of the ECB raised this limit on 3 September 2015 from 25 % to 33 %, subject to a case-by-case verification that this would not create a blocking minority. This means the ECB will be treated on an equal footing with other investors. Bonds held by the ECB in particular would also be subject to a debt haircut.

309. By purchasing government bonds, the ECB is giving the member state **governments** the **wrong incentives**. There is a danger that member states will avoid, delay or reduce the necessary consolidation efforts and structural reforms given the favourable financing conditions. The German Council of Economic Experts expressed a warning regarding this risk back in November 2014 (GCEE Annual Economic Report 2014 items 284ff.). Taking this risk into consideration does not contradict the ECB's mandate, nor, importantly, does it mean that the ECB would be taking over economic policy or even labour market organisation for individual member states, as mistakenly claimed in dissenting opinions (GCEE Annual Economic Report 2014 item 294). ↘ ITEM 366 On the contrary; a thorough consideration of all consequences of a monetary policy decision for economic growth is a precondition of a competent monetary policy.

That is why an economic forecasting process involves consideration of as many relevant channels as possible through which a change in monetary policy can affect growth. This includes the behaviour or reaction functions of decision makers in the private and public sectors. Relationships between monetary policy, fiscal policy, structural reforms and potentially misleading incentives are analysed in section IV.

## 5. Interim conclusion

310. The German Council of Economic Experts came to the conclusion in November 2014 that monetary policy was already relatively loose and an expansion of the purchase programmes to include government bonds would be better avoided given the associated risks (GCEE Annual Economic Report 2014 item 290). The announcement and initial implementation of a purchase programme by the ECB in the amount of more than 10 % of euro area GDP resulted in a surprisingly sharp decline in short, medium and longer-term interest rates. ↘ CHART 45, UPPER LEFT The euro also depreciated considerably ↘ CHART 45, LOWER LEFT, and asset prices, particularly stocks, rose sharply in the wake of the announcement. ↘ CHART 45, LOWER RIGHT As instantaneous forward rates show, the easing extends far beyond what the ECB's historical reaction to inflation and growth forecasts had indicated.

311. Inflation as measured by the GDP deflator or core inflation remained stable. One cannot reliably ascertain whether the decline in energy prices reflected in the HICP would have had second-round effects on core inflation if the ECB purchase programme had not been announced. In any case, inflation forecasts continued to follow an upward trend after the announcement. This trend is not a mechanical result of the ECB's objectives, but is due to the empirical evidence regarding forecastable components of the inflation rate (ECB, 2015b). Surprise dropsinfluence the forecasts if they entail foreseeable second-round effects. However, the ultra-low interest rates contribute to the build-up of substantial risks to financial stability over time.

# III. REAL INTEREST RATES AND THE STAGNATION HYPOTHESIS

312. Originating from the situation in the USA, the persistently low and at times negative real interest rates have sparked a debate about the equilibrium interest rate and longer-term growth. Supporters of a stagnation theory assume an equilibrium rate close to zero or in negative territory.

## 1. There have often been negative real interest rates

313. Interest rates affect saving, consumption and investment behaviour through real purchasing power and real returns. **The real interest rate** – the nominal rate minus the expected inflation rate – **is key** in determining the effects of low interest rates on the behaviour of households, businesses and governments. The actual ex-post return is equivalent to the nominal interest rate minus realised inflation. Complaints about the "expropriation of savers" through negative nominal interest rates can be countered by the fact that **actual real returns are often negative** during recessions and periods of high inflation. This is evident,

for instance, in an international comparison of ex-post real interest on twelve-month deposits. ↘ CHART 47

Negative rates could be observed in Germany as far back as 1979, long before the episodes of 2010, 2012 and 2013. Real returns on twelve-month deposits recently returned to positive ground due to the surprising declines in energy prices. Negative ex-post real interest rates were the norm in the euro area from the end of 2009 to the beginning of 2013, and in Japan particularly in 1996 and 2013. Real interest rates in the United States ranged from –2 % to –4 % during the recessions of the mid and late 1970s. Although the nominal twelve-month interest was positive, consumer price inflation turned out even higher during the term of the fixed-income investment. The same was true of the interest on three to ten-year government bonds at the time.

314. The expected real interest rate is negative when the interest rate is close to zero and inflation is expected to be positive. Households have an **incentive to consume more and save less**. The increased consumer demand buoys economic growth. Favourable real interest rates and improved growth prospects motivate companies to invest more. And increasing economic growth causes real interest rates to rise again. The central banks want to take advantage of this chain of effects (Draghi, 2015a). However, if real interest rates remain at this low level for the long-term in the form of a new equilibrium, the incentive to save should actually increase. Otherwise it would be impossible to save enough for retirement.

## 2. Equilibrium interest rate and secular stagnation

315. The typical definition of the **equilibrium interest rate** in the recent literature refers to the real interest rate that would prevail if prices remained constant. If the central bank pursues a positive inflation target, it would be the rate at which inflation were permanently equal to the target rate. At this real interest rate, GDP tallies with potential output. **Equilibrium concepts** differ in terms of the

↘ CHART 47

**Ex-post real money market interest rate für twelve-month deposits[1]**
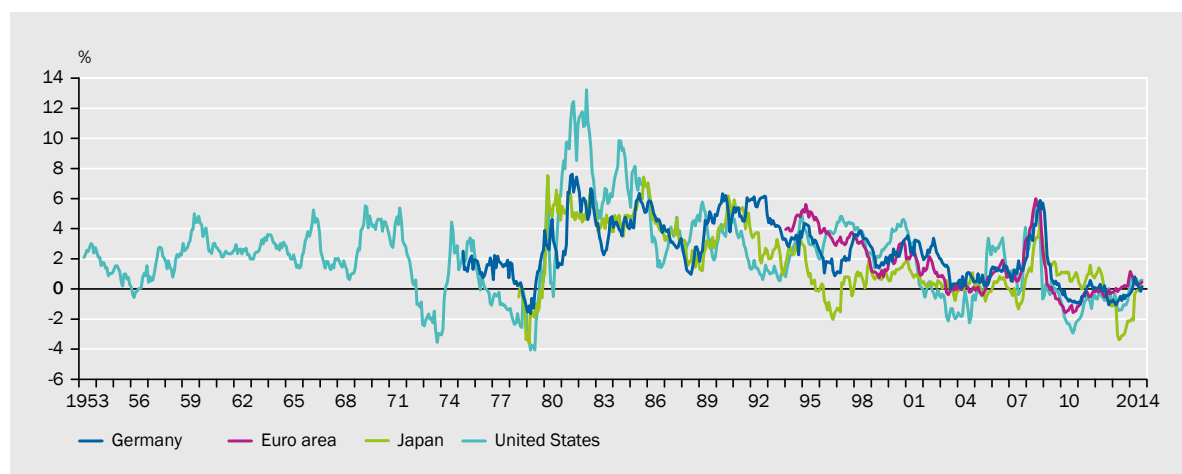


1 – For Germany and euro area: EURIBOR (Euro Interbank Offered Rate), for Japan and United States: LIBOR (London Interbank Offered Rate) less of the respective inflation rate of the following year.

Source: Own calculations based on data from the ECB, the Fed and the Financial Times

SVR-15-145

relevant time horizon. The **long-term equilibrium interest rate** materialises once all business cycle fluctuations and other temporary influences subside. It is determined based on a steady-state growth rate. The Taylor rule uses this long-term equilibrium interest rate.

316. In contrast, a **medium-term equilibrium interest rate** accounts for various factors that change only slowly (Laubach and Williams, 2003; Williams, 2015). These include changes in time preference and households' propensity to save, as well as fiscal policy developments and fluctuations in macroeconomic productivity. Chair of the Board of Governors of the Federal Reserve System, Janet Yellen, has vividly described headwinds, on many occasions in recent years, that push the medium-term equilibrium interest rate down, referring to structural adjustment processes due to the excessive debt of many private households (Yellen, 2015).

317. Macroeconomic models commonly used by central banks also feature a **short-term equilibrium interest rate**. This is the rate that would materialize if the aggregate price lvel would react flexibly to cyclical fluctuations (Woodford, 2003). The actual real rate of interest deviates from this equilibrium rate due to wage and price rigidities. This short-term equilibrium rate, often referred to as the "natural interest rate" in the recent literature, is highly volatile. It varies with each cyclical shock and disturbance (Barsky et al., 2014; Curdia et al., 2014). It therefore comes as no surprise that estimates have largely been negative since the recession of 2008/2009.

    In theory, the central bank could bring the real interest rate in line with the short-term equilibrium rate. This would be the result of a monetary policy that focussed solely on directing GDP in the short term towards the level that would be realized under a flexible price level. The "natural" interest rate is thus a **monetary policy recommendation**. However, a policy following this recommendation would run the risk of inflation getting out of control. It also depends to a great extent on the model used to derive it. Simple interest rate rules are much more robust to model uncertainty (Orphanides and Williams, 2009).

318. Economists have increasingly been discussing the possibility, since the end of 2013, that the long-term equilibrium interest rate has fallen significantly due to **secular stagnation** and is currently close to zero or even negative. Lawrence Summers used this term and thereby linked to discussions following the Great Depression of 1929–1933 in the United States (Hansen, 1939; Summers, 2014a, 2014b). The financial crisis of 2008/2009 led to a sharp drop in US GDP. Economic output has not returned to the potential output path as projected before the crisis. Summers (2014a, 2014b) and others fear that it will remain permanently below this path, as the average growth rate will be lower than before the crisis (Krugman, 2014a; de Grauwe, 2015).

    If the long-term equilibrium interest rate is actually close to the current low interest rate, this would **reduce the risks to financial stability** discussed above. This is because rate increases as high as those of the past are unlikely to be necessary to stop the economy from overheating and inflation from rising.

319. The **balance of credit supply and credit demand** lies at the core of the stagnation hypothesis. Supply results from planned savings of households, businesses and governments, and demand serves investment purposes. If there is excess supply, the real interest rate falls to balance out the discrepancy. The availability of cash prevents the nominal interest rate from falling far below zero. If there are price rigidities, the scope for the real interest rate to fall is also reduced. Summers fears that even the ultra-low rate in the United States may actually be higher than the equilibrium rate. This would mean excess supply would continue with negative real interest rates. In an open economy this should lead to capital outflows towards countries with higher prospective earnings.

Some authors are exploring the question as to whether, theoretically, the **real interest rate could remain globally and permanently negative**. One argument against this is that almost every investment would be profitable in that case (Bernanke, 2015). Von Weizsäcker (2015) contends that due to demographic developments, accumulated savings for retirement exceed capital demand resulting from the production process. In this case there would be a negative equilibrium real interest rate. A **massive expansion of public debt** would be needed to bring the equilibrium rate back into positive territory. According to Homburg (2014), this theory does not hold up if land is included as a production factor. The land market would absorb any excess supply of capital.

Other proponents of the stagnation hypothesis recommend increasing government spending and debt, because their **stimulative effect is particularly strong** at a time when monetary policy is constrained at the zero lower bound (de Grauwe, 2015; Krugman, 2014a, 2014b; Summers, 2014a, 2014b).

320. Critics of the stagnation hypothesis explain the slow economic development as a by-product of the necessary structural change due to high levels of private and government debt and misguided government interventions. Kenneth Rogoff (2015) sees **high debt** as the reason for the slow recovery. He believes that growth will pick up as soon as the debt burden has been brought down and lending conditions have improved. Growth may even exceed current projections. John Taylor (2014) considers the reasons for the crisis and sluggish recovery to be the **deviations from tried-and-tested rules** in monetary and fiscal policy and in financial market regulation.

The German Council of Economic Experts warns that an **increase in government deficits** could have a **destabilising** effect. The euro area sovereign debt crisis is not yet over. Necessary public investment in Germany ca be financed without increased debt by appropriately prioritising spending. Improvement of the underlying regulatory and institutional conditions for economic activity will lead to an increase in private investment (GCEE Annual Economic Report 2014 item 16).

# 3. Empirical evidence on the equilibrium interest rate

321. The evidence for the United States is at the heart of discussions about secular stagnation and the decline of the equilibrium interest rate. Moreover, the US interest rate level is likely to be important for the rest of the world. So the equilibrium rate estimates of the members of the **Fed's** Federal Open Market Committee (FOMC) are of particular interest. The average long-term projection in September was 2 % for inflation and 3.6 % for the nominal money market rate. This puts the **implied estimate** for the long-term equilibrium real interest rate at around 1.6 %. It has thus come down from the region of 2.1 % since June 2013. The FOMC members have thus lowered their estimate of the long-term equilibrium real interest rate somewhat, but it is still far from zero or even negative values. They therefore expect a steady increase in the money market rate over the next two years, to around 1.5 % by the end of 2016 and close to 3 % by the end of 2017 (FOMC Projection Materials, 17 September 2015).

322. The effects of economic structure and household and business behaviour on the equilibrium rate of interest can be simulated in **structural macroeconomic models**. An often cited, newer model of this type was estimated by Smets and Wouters (2007). In this model, the long-term equilibrium interest rate is a function of parameters that determine the behaviour of households and businesses, the economic structure and the productivity growth trend. Estimates are influenced by averages during the investigation period and by a priori probabilities. Recursive estimation using real-time data for 20-year windows produces estimates that vary only slightly over time. The long-term equilibrium interest rate has fallen since 2004, from slightly over 3 % to currently slightly over 2 %.
↘ CHART 48

323. The pessimistic perspective of secular stagnation held by Lawrence Summers and Carl-Christian von Weizsäcker is therefore neither shared by the FOMC members nor supported by the Smets-Wouters model. In contrast, Summers

↘ CHART 48

**Estimates of the long-term equilibrium interest rate in the economy of the United States[1]**
Recursive estimation with the Smets-Wouters-Model (2007), 20-year-window



1 – Own calculations.

SVR-15-282
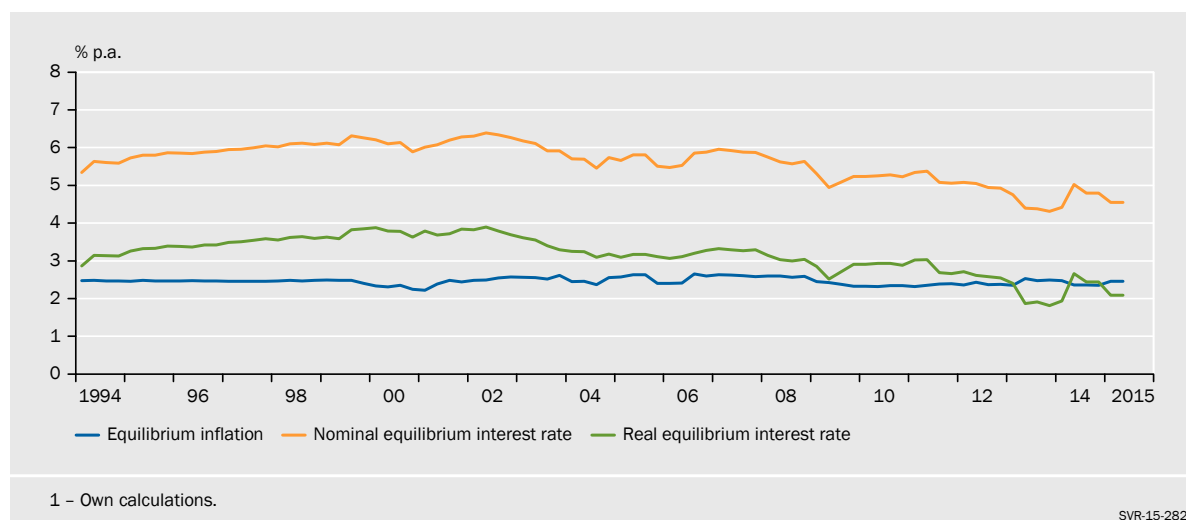
(2014a, 2014b, 2014c) refers to **medium-term equilibrium interest rate estimates** with the method of Laubach and Williams (2003). These authors use a simpler model, comprising an aggregate demand curve, a Phillips curve and the relationship between the equilibrium interest rate, trend growth and unobserved factors that affect the equilibrium interest rate in the medium term. They calculate a medium-term equilibrium interest rate using econometric methods to estimate unobserved time-varying components. Updated calculations decline significantly in 2009 (Beyer and Wieland, 2015; Williams, 2015). A smoothed estimate (two-sided standard specification) shows a less abrupt decline, but still delivers figures close to zero for the past few years. ↘ CHART 49, LEFT

324. Fed Chair Yellen has repeatedly explained the **Fed's monetary policy** with references to low medium-term equilibrium interest rates (for example Yellen, 2015). Unlike Summers (2014a, 2014b, 2014c), she expects a return to a long-term equilibrium of slightly below 2 %. The **economic recovery in the United States** supports this. For example, the unemployment rate is around 5.5 %, and thus within the range of 4.7 % – 5.8 %, where the FOMC members place the "natural" rate of unemployment. Another argument against Summers' stagnation hypothesis is that trend growth is 2 % using the Laubach-Williams method. This would mean only a temporary dip in the medium-term equilibrium interest rate.

In a widely noticed speech in March 2015, Fed Chair Yellen uses a medium-term equilibrium interest rate of 0 % motivated by the Laubach-Williams results, in the Taylor rule so as to show that the rule then recommends a zero interest rate policy (Yellen, 2015). In this calucation she uses a core inflation rate of 1.25 % and a long-term output gap of −1 %. However, the Laubach-Williams-method would imply a positive output gap of 0.95 % for the first quarter in 2015 since the real interest rate is below the medium-term equilibrium interest rate. A con-

↘ CHART 49

**Estimates for medium-term equilibrium interest rates[1]**



Source: Beyer and Wieland (2015)
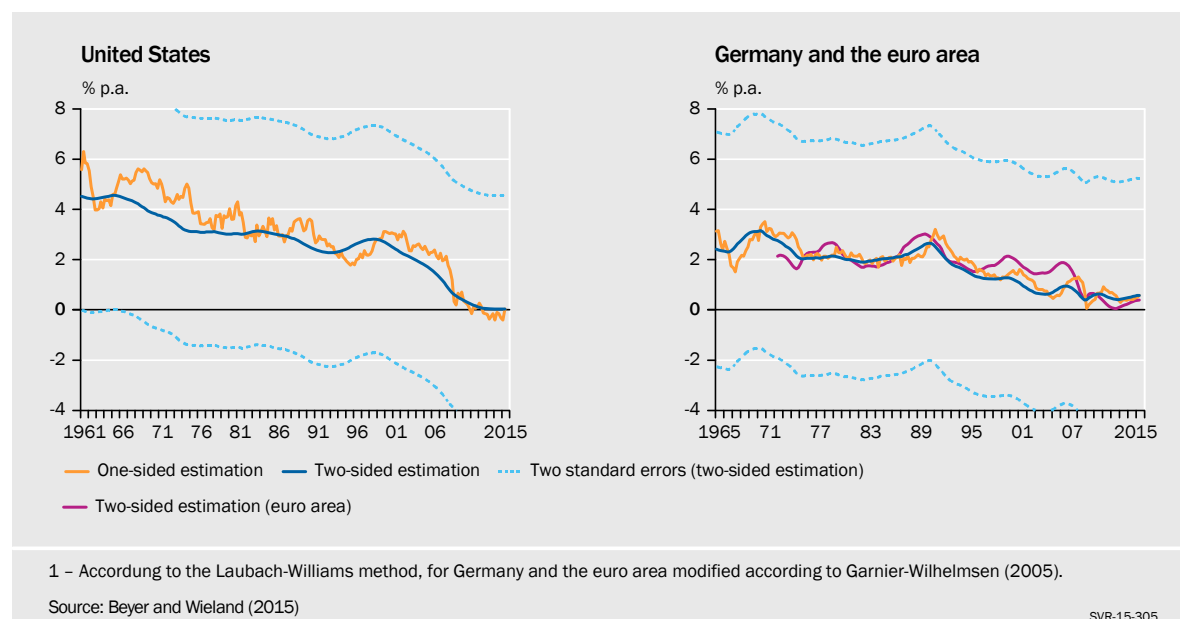
1 – Accordung to the Laubach-Williams method, for Germany and the euro area modified according to Garnier-Wilhelmsen (2005).

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sistent application of medium-term equilibrium interest rate rate together with the medium-term output gap would yield a Taylor interest rate of 1.4 %. This suggests an interest rate increase.
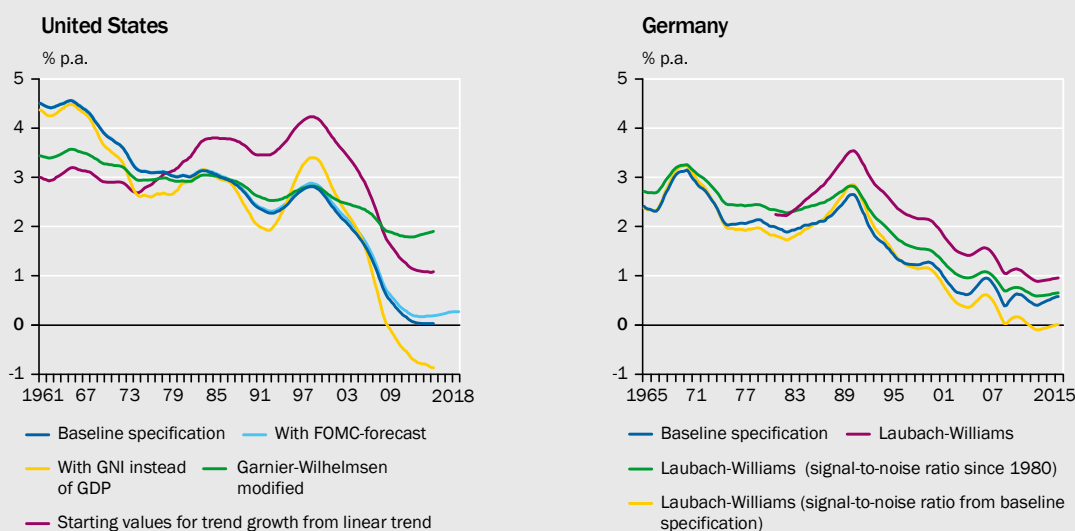
**325.** Applying the original Laubach-Williams method to **Germany and the euro area** does not ultimately deliver any stable or economically plausible estimates. A simplified econometric specification as suggested by Garnier and Wilhelmsen (2009) yields slightly better results (Beyer and Wieland, 2015). The estimates at the beginning of the investigation period are below those for the United States. They also decline over time, but ultimately remain in the positive region between 0.5 % and 1 %. ↘ CHART 49, RIGHT

**326.** In contrast to Summers (2014a, 2014b, 2015c), Laubach and Williams (2003) pointed out that the **medium-term equilibrium interest rates are estimated very imprecisely**. The average standard errors for the estimates for all three economies observed here do in fact indicate a very broad potential range. In addition, the estimates vary greatly under different assumptions in the econometric specification. ↘ BOX 11 A more recent study by Hamilton et al. (2015) also concludes that medium-term equilibrium interest rates are estimated under great uncertainty and that the long-term equilibrium interest rate is clearly in positive territory.

**327.** **Estimates of medium-term equilibrium interest rates** do not provide reliable evidence for the relevance of the stagnation hypothesis. Therefore these estimates **should not be heavily weighted in key monetary and fiscal policy decisions**. Interest rate rules which include a long-term equilibrium interest rate that varies less in estimation or change rules which do not use an equilibrium interest rate should be used as benchmarks instead. These interest rate rules suggest a rate hike for the euro area before the end of this year.

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↘ BOX 11

**Instability of medium-term equilibrium interest rate estimates**

Given the importance that economists such as Janet Yellen and Lawrence Summers attach to estimates of medium-term equilibrium interest rates, it is vital to assess the stability of these estimates under a variety of econometric specifications. The sensitivity study conducted by Beyer and Wieland (2015) shows a very broad range of estimates. ↘ CHART 50 In addition to the standard specification, the Laubach-Williams methodology is calculated for the United States in one instance with gross national income (GNI) instead of GDP data, with differing starting values for trend growth, with data extended to include FOMC forecasts and with differing signal-to-noise ratios. The latter determine the relationship between the fluctuations of natural growth and its trend, and between fluctuations in temporary factors and the output gap. Garnier and Wilhelmsen's (2009) simplified econometric specification is also used, which includes, in particular, simpler modelling of temporary factors. In addition to the standard specification, the medium-term equilibrium interest rate is calculated for Germany using the Laubach-Williams method and various signal-to-noise ratios.

↘ CHART 50

**Estimates for medium-term equilibrium interest rates with different model specifications[1]**

**United States**

% p.a.

**Germany**

% p.a.

— Baseline specification    — With FOMC-forecast

— With GNI instead    — Garnier-Wilhelmsen
   of GDP                   modified

— Starting values for trend growth from linear trend

— Baseline specification    — Laubach-Williams

— Laubach-Williams  (signal-to-noise ratio since 1980)

— Laubach-Williams (signal-to-noise ratio from baseline
   specification)

1 – Two-sided estimations.

Source: Beyer and Wieland (2015)

SVR-15-454

# IV. AVOID DELAYING REFORMS AND CONSOLI-DATION

## 1. Heterogeneity within the euro area is an argument for reforms

328. Differences in the willingness to reform among the individual euro area members states before and after the global financial crisis allow for conclusions to be drawn on the best way to accelerate economic development. This provides **evidence that challenges** the validity of the **secular stagnation hypothesis** for the euro area as a whole.

329. The German economy recovered quickly from the crisis, despite a particularly sharp drop in GDP. GDP is already back far above the level seen at the beginning of the crisis in 2007. ↘ CHART 51, LEFT The unemployment rate in Germany has fallen steadily to its current record low of 4.5 %. Employment continues to increase, despite high migration numbers. To a certain extent, the German economy has benefitted from particularly favourable circumstances, as demand for German exports from outside Europe has recovered quickly after the major slump of 2009.

330. However, structural reforms implemented under the Agenda 2010 and tax reforms introduced some ten years ago are likely to have been a major factor in the

German economy weathering the crisis so well. ↘ ITEMS 482, 735FF. Potential growth remains positive despite the population decline and certain setbacks in German reform policy (GCEE Annual Economic Report 2014 items 207f.) ↘ ITEM 203 This points to continued positive long-term equilibrium interest rates for Germany.
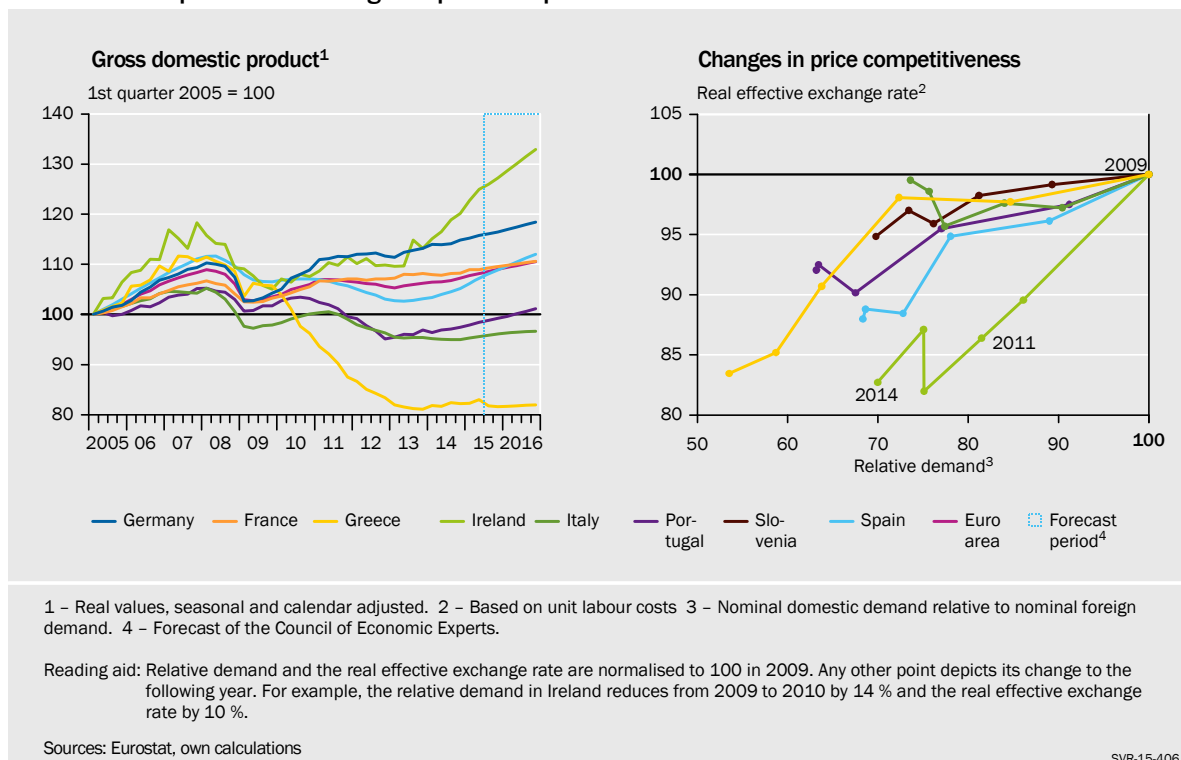
331. Of the member states hit particularly hard by the debt crisis in the euro area and sustaining heavy and persistent slumps, Ireland and Spain are performing especially well. These countries took **structural reform measures at an early stage**, and are currently exhibiting the **highest growth rates in the euro area**. Unemployment in Ireland, where the labour market is quite flexible, has already fallen back to 9.4 %. In Spain it is also falling from a very high level. Portugal has also achieved a turnaround on the labour market. In Greece, the political back and forth and the new government's aggressive negotiation tactics caused great uncertainty regarding future development.

Italy, which is particularly significant for euro area development due to its size and high government debt, has been much slower than Ireland, Spain and Portugal to recover. Comprehensive reforms of the labour market, product markets, the judicial and administrative systems and electoral law were postponed until recently. In contrast with its predecessors, Prime Minister Renzi's government seems to be initiating key reforms. However, it remains to be seen how extensive they will be. A lot depends on the reform of the judicial system.

332. The subdued development of consumer prices in the crisis countries reflects not only energy price development but also the costs cuts these countries have made. They are striving to regain their **price competitiveness**. Particular reductions were achieved in unit labour costs in Greece, Ireland and Portugal. Current ac-

↘ CHART 51

**Gross domestic product and changes in price competitiveness in selected euro area member states**



1 – Real values, seasonal and calendar adjusted. 2 – Based on unit labour costs 3 – Nominal domestic demand relative to nominal foreign demand. 4 – Forecast of the Council of Economic Experts.

Reading aid: Relative demand and the real effective exchange rate are normalised to 100 in 2009. Any other point depicts its change to the following year. For example, the relative demand in Ireland reduces from 2009 to 2010 by 14 % and the real effective exchange rate by 10 %.

Sources: Eurostat, own calculations

SVR-15-406

count deficits were reduced, and in some cases actually turned into surpluses. This was due not only to the decline in imports as a result of weak economic development, but also to a substantial rise in exports. If exports and economic development are to be reinforced, it is vital that **non-price competitiveness** be further improved by way of structural reforms. Greece is lagging the farthest behind in this area (GCEE Special Report 2015 item 46).

333. The **ECB is right to advocate structural reforms**. When announcing its government bond purchase programme, it called for proactive implementation of product and labour market reforms and measures to improve the business environment for companies. Structural reforms improve **cyclical resilience**. It is to be expected in an economy with rigid labour and goods markets that a negative shock will initially cause rather moderate wage and price cuts and thus greater declines in production, and force the adjustment to a larger extent through increased unemployment. The additional decline in demand will require greater price adjustment and create longer-lasting deflationary pressure. This is why less flexible euro area economies suffer higher unemployment and falling inflation for longer periods. By contrast, the decline in demand was less marked in countries that had earlier profited from improvements in the real effective exchange rate (Bartelsman et al., 2015; Draghi, 2015a). ↘ CHART 51, RIGHT

334. Structural reforms that lead to increased flexibility and competition improve the **longer-term growth potential**. But there is no ideal reform package that could be implemented in the same way in each and every EU member state. Structural and institutional differences enable a competition of systems in a constantly changing world (Schmidt, 2015). However, potential efficiency gains can be estimated on the basis of best practice cases, relating, for instance, to labour market policy, goods market deregulation, taxes and pensions. Bouis and Duval (2011) argue, for example, that by approaching best practice in these areas, per-capita GDP in the EU could be raised by more than 10 % within ten years.

Moreover, the ECB stresses that structural reforms should be implemented swiftly, credibly and effectively. This would induce expectations of higher income in the future, and motivate companies to increase their investments. This would **bring the economic recovery forward**.

335. A **comparison of reform paths in Spain and Italy** is of particular interest in the euro area. Firstly, they are the two largest economies that were affected particulary strongly by the euro area debt crisis. Moreover, they differ in that **Spain** initiated the reform process earlier and more sustainably than Italy. Key reforms to make the labour and goods markets more flexible were adopted and implemented between 2010 and 2013 in Spain. ↘ BOX 12; ↘ APPENDIX TABLE 17

336. **Italy**, on the other hand, focussed on tax hikes to ensure the sustainability of the high level of debt. However, this revenue-based fiscal consolidation slowed growth even more than spending cuts would have (Alesina et al., 2015). Monti's government had implemented a major reform of the pension system back in 2011, but this was classed as unconstitutional by the Italian constitutional court in April this year. However, radical labour and goods market reforms have long been postponed. They were only taken up by Renzi's government, which took of-

fice in February 2014. In addition to tax simplifications and reforms to the judicial and financial systems, these included the labour market reforms resolved in December 2014. These are likely to effect significant changes on the labour market, particularly if they are followed by a judicial reform as the next step. Several legislative decrees followed in February and June 2015 which implement the announced guidelines of the labour market reform.

However, for a sustained revival of economic growth in Italy not only this labour market reform needs to be implemented, but also equally extensive reforms in public administration, the judicial system, the goods markets, the service sector, education and the tax system need to follow (IMF, 2015a). It remains to be seen whether Renzi's government manages to rally the political majority to this end. Moreover, efforts need to be increased to fully implement already existing laws (IMF, 2015a).

↘ BOX 12

**Labour market reforms in Italy and Spain**

The Italian labour market reform of 2014 is basically aimed at creating a more flexible labour market. The costs and burden for employers associated with dismissals are to be reduced. The reform also provides for tax reductions for entrepreneurs when they hire permanent staff as well as a more flexible use of staff within a company. Furthermore, it implies an expansion of unemployment support, which aims to improve the link between support and job seeking/training. This reform thus provides incentives to employ new staff, a better reallocation of employees between companies and improved support for workers changing jobs (IMF, 2015b).

An overhaul of the active labour market policy is also planned, with the establishment of a national employment agency for a better allocation of employment opportunities. Moreover, a reform of the current wage supplementation scheme is to be implemented, to facilitate the reallocation of workers across jobs (IMF, 2015b). Initial labour market figures from this year indicate that the number of new permanent employment contracts has increased disproportionately. Furthermore, around 143,000 temporary employment contracts were converted into permanent ones between March and June. The unemployment rate dropped slightly from March to April, and is currently around 11.9 %. However, it is still too early to pass conclusive judgement on the reform. A key factor for its success could be a reform to boost the efficiency of the Italian justice system. Lengthy litigation in the event of a dismissal results in high costs for the employer.

Reform measures in Italy between 2010 and 2013 were far less extensive than the Jobs Act. These reforms included, for example, the introduction of an universal unemployment benefit system, slightly improved financial incentives for companies to hire young people and older workers, and a better active labour market policy including establishment of a fund to be used, for instance, to support reinstatement of the jobless. One exception is the pension reform adopted in 2010. However this was classified as unconstitutional this past spring.

In contrast to Italy, Spain successfully implemented extensive labour market reforms between 2010 and 2013. They provided for extensive deregulation and cost reductions for businesses in the event of dismissals and made it easier to exit collective wage agreements. Incentives were also created for smaller companies to hire permanent staff. Moreover, a dual vocational training system was introduced. In order to reduce the high government deficit, the retirement age was raised from 65 to 67, the pension system indexing was revised and rules on eligibility for early retirement and partial retirement were tightened.

337. The crisis in Greece highlighted the **danger of political contagion effects**, which could result in a **suspension of the reform process** (Feld et al., 2015). In Portugal and Spain political parties could take over that would aim to reverse this process. This could then escalate to crisis level as was the case in Greece. If larger member states were to question the political stance taken by the euro area so far, a loss of confidence in the euro can be expected. So it is all the more important that the reform processes in Italy, Spain and Portugal progress quickly, enabling economic growth and increasing employment.
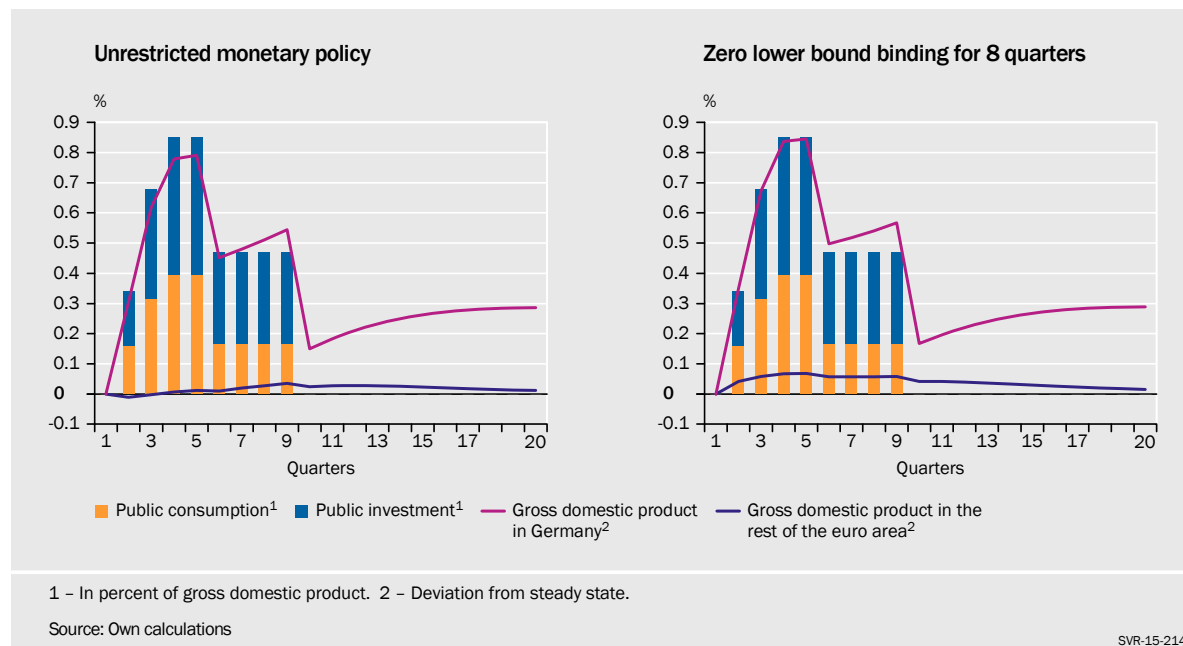
## 2. Renewed call for stimulus packages

338. The calls from adherents of the secular stagnation hypothesis for a **return to government spending programmes** with the objective of increasing public debt are currently growing ever louder (de Grauwe, 2015; Summers, 2014a, 2014b; von Weizsäcker, 2015). They often emphasise the opportunity for cheap financing of increased government investment at zero or negative interest rates. The German Council of Economic Experts already warned in 2014 that a major government bond purchase programme could bring such demands in its wake (GCEE Annual Economic Report 2014 item 247). More favourable financing conditions provide governments with incentives to postpone unpopular reforms and give in to calls for fiscal easing (Leiner-Killinger et al., 2007). If, however, the consolidation decided upon in recent years is to unfold its positive supply-side effects, it is necessary to implement it as planned. Failure to do so will cause it to lose credibility and deter private investors (Alesina et al., 2015; GCEE Annual Economic Report 2013 items 241f.).

339. It is therefore counterproductive for Ecofin and the European Commission to tolerate **deviations from the fiscal rules**. France, for example, has been given extra time to comply with the deficit limit in the corrective arm of the Stability and Growth Pact (SGP) (European Commission, 2015a), while Italy's deadline for compliance with the 1/20 rule on debt reduction in the preventive arm of the SGP has also been extended (European Commission, 2015b). The Italian government has also announced tax cuts amounting to 2 % of gross domestic product over the next three years, which it does not plan to accompany with cuts in spending. This move would only constitute part of a meaningful shift of consolidation from the revenue to the expenditure side of the budget if it did not increase Italian government debt. Given this watering down of European fiscal rules, additional public spending in connection with the refugee crisis should not be taken as further justification for deviating from the fiscal rules.

340. Some commentators and institutions (IMF, 2014; de Grauwe, 2015; European Commission, 2015c) are also calling for a **German stimulus package**. The German government has the fiscal leeway to do so, they argue, and should make use of it. Such a programme could have **positive spillover effects on other EU countries**, they add. These proposals ignore that in a currency union with a common monetary policy, national fiscal policy should pursue the aim of stabilising the national economy. Estimates by the German Council of Economic Experts indicate that the output gap in Germany is almost closed, that there will be

a slight overutilisation of capacity ↘ ITEM 187 and that fiscal policy is already expansionary. The advocates of additional, debt-financed spending programmes are therefore recommending that the German government tolerate overheating of the German economy in order to create more demand for goods and services from other member states in the euro area.

341. The **direction and scale of fiscal spillover effects** within a currency area **are uncertain**. German reunification, for example, acted as a major asymmetric fiscal stimulus in the European Monetary System (EMS) of the day, which negatively impacted growth in the other member countries and triggered the currency crisis of 1992/93 (Wieland, 1996). The appreciation of the EMS currencies against those of non-member countries and the restrictive policies of the Bundesbank played an important role in this. The ECB looks at the development in the euro area as a whole and would therefore not counteract fiscal policy to the same degree. The German stimulus package implemented from 2009 to 2010 is likely to have had slightly negative to slightly positive spillover effects, depending on the member state (Cwik and Wieland, 2011). It also formed part of a European Economic Recovery Plan (EERP), which implied a stronger, symmetrical stimulus.

342. Advocates of a German stimulus package assume that the spillover effects in the current situation, in which market participants expect the period of low interest rates to continue for several years, would be considerably greater. For example, Blanchard et al. (2014) concluded using a structural macroeconomic model for Germany and the euro area that a fiscal stimulus has very positive effects if markets anticipate that the **interest rate will remain constant for two to three years**. In the event of unconstrained monetary policy, however, their model only implies small positive or slightly negative spillover effects.

343. To verify this analysis, the German Council of Economic Experts used a similar model to Blanchard et al. (2014), but which additionally takes into account exchange rates and the flows of goods and capital between the euro area and non-member countries (compare GCEE Annual Economic Report 2013 box 10). ↘ BOX 7 The impact of a spending programme equivalent to the German share of the EERP is examined in the following. The analysis assumes that all spending characterised as investment has a long-term positive impact on productivity. Consequently, it is more likely to over- thanunderestimate the medium to long-term impact of fiscal stimulus. The results show that if monetary policy is unconstrained, the spillover effects are initially slightly negative and later become slightly positive. ↘ CHART 52, LEFT

344. If monetary policy is constrained for two years and market participants therefore anticipate rates to stay constant, the spillover effect is positive from the start. ↘ CHART 52, RIGHT However, these **spillover effects remain very small** at just under 0.1 % of GDP in the euro area. The German government would therefore have to provide four to five times the level of stimulus of the German stimulus package from 2008 and 2009 ("Konjunkturpakete I und II", Cwik and Wieland, 2011) in order to produce the same fiscal effect as a direct transfer abroad.

↘ CHART 52
**Fiscal stimulus in Germany**



| Unrestricted monetary policy | Zero lower bound binding for 8 quarters |

■ Public consumption[1]  ■ Public investment[1]  — Gross domestic product in Germany[2]  — Gross domestic product in the rest of the euro area[2]

1 – In percent of gross domestic product.  2 – Deviation from steady state.

Source: Own calculations

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345. **Germany plays a role as an anchor of confidence** in the euro area debt crisis. Provided investors are confident that Germany cannot only bear its own debt but also serve as a guarantor for the joint rescue programmes, trust in the euro area as a whole remains higher than it would otherwise be. It would be unwise to weaken this anchor. This is all the more true with regard to spending packages that would contribute to overheating of the German economy and have minimal spillover effects on other member states at best. By contrast, structural reforms in the crisis countries provide a suitable measure for reducing the need for Germany to act as such an anchor of confidence.

## 3. Lower bound for interest rates no grounds for postponing reforms

346. The ECB's calls for accelerated structural reforms are meeting opposition, which also cites the lower bound for monetary policy as an argument. Some adherents of the secular stagnation hypothesis warn of the **deflationary effects of reforms**, which, they say, would worsen the economic situation (Eggertson et al., 2014). Reforms that promote competition generate declines in prices. When monetary policy responds with interest rate cuts, it stimulates private consumption and investment demand. If, however, monetary policy is constrained because the lower bound for interest rates has already been reached, falling prices could cause the real interest rate to increase. Eggertson et al. (2014) show that in a simple New-Keynesian model, such reforms therefore lead to a fall in consumption and investment demand. This adverse impact is more severe if the reforms are only temporary. The ECB, however, disputes that monetary policy is effectively constrained by the lower bound for the policy rate (Draghi, 2015d). In fact, it can also use quantitative easing as an instrument to tackle deflationary risks (GCEE Annual Economic Report 2014 box 13).
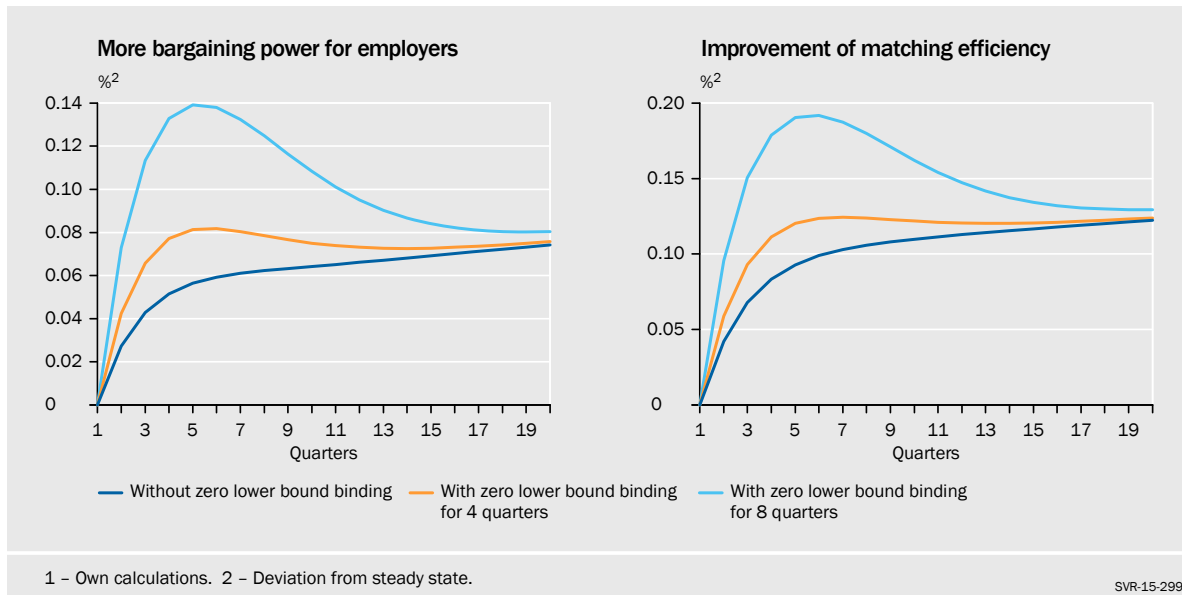
347. There is no disagreement that structural reforms which increase competition on labour and product markets have **long-term positive effects** on economic activity (Forni et al., 2010; Gomes et al., 2013; Gerali et al., 2015). More competition on these markets leads to more efficient use of labour and capital. An increase in employment and higher growth is the result. In an open economy, international competitiveness also improves.

348. In order to adequately assess the **short-term impact of structural reforms**, other aspects need to be considered. In principle, expectation and wealth effects can mean that when increases in employment and incomes are expected in the longer term, a short-term positive impact on demand is triggered too (GCEE Annual Economic Report 2013 items 220ff.). In order to take better account of these effects than Eggertson et al. (2014), other transmission channels need to be examined. The existence of liquidity-constrained households, the possibility of private capital accumulation and trade with partners outside the euro area should be included, for example (Vogel, 2014). In models that encompass these aspects, the short-term negative impact of structural reforms at the zero lower bound almost completely disappears (Gomes, 2014; Vogel, 2014; Gerali et al., 2015).

349. Structural reforms should also be modelled as realistically as possible. The macroeconomic model by Gadatsch et al. (2014), which takes into account frictional unemployment on the labour market, allows an examination of labour market reforms. In the following, we model a **reduction in the wage bargaining power of employees** and an improvement in the matching of job seekers and companies. Lower wage bargaining power is associated with a lower wage premium and lower longer-term equilibrium wage. If wages fall by 0.1 %, GDP rises by 0.11 %. Irrespective of whether monetary policy is at the zero lower bound, the short-term impact on GDP is positive. ↘ CHART 53, LEFT

The increase in employment compensates for the fall in wages, meaning incomes rise permanently. As this rise in income is anticipated, consumption already begins to increase in the short term. The increase in demand and production leads to an increase in prices. In normal circumstances, the central bank would react with an interest rate hike. If monetary policy is constrained by the lower bound, however, no such increase in interest rates takes place, meaning consumption and investment demand are stimulated further.

350. **Improved labour matching** formed part of the German labour market reforms in 2003 and 2004. Estimates put the resulting improvement in efficiency at between 5 and 10 % (Fahr and Sunde, 2009; Klinger and Rothe, 2012). In the model simulation, a 1 % increase in matching efficiency in the euro area (excluding Germany) raises GDP by 0.15 % in the long term. ↘ CHART 53, RIGHT The short-term effect is also positive, irrespective of whether monetary policy is constrained. More effective labour matching increases employment and domestic demand. It also increases the probability that job seekers will find work. The resulting upward pressure on goods prices and wages outweighs the deflationary effect and reduces search costs for companies.

⭨ CHART 53

**Labour market reforms and their effects on gross domestic product in the euro area without Germany[1]**

| More bargaining power for employers | Improvement of matching efficiency |
| --- | --- |

%[2]

%[2]

— Without zero lower bound binding　　— With zero lower bound binding for 4 quarters　　— With zero lower bound binding for 8 quarters

1 – Own calculations.　2 – Deviation from steady state.

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The current period of low interest rates should therefore not be taken as grounds for postponing reforms to improve competitiveness. Despite favourable financing conditions, governments in member states should not slacken their reform efforts. The German government should make every effort to promote continued reform and set a good example itself.

# V. CONCLUSION

351. Since the beginning of 2015, the ECB has undertaken **additional massive monetary policy easing.** It will conduct large-scale purchases of public sector debt instruments this year and next and increase its balance sheet by more than €1 trillion. As a result, short, medium and longer-term interest rates have fallen into negative territory. Interest rates at the short end are already more than half a percentage point below the level indicated by a reaction function that closely tracks the path of past interest rate decisions. Moreover, instantaneous forward rates derived from the yield curve show this interest rate level continuing for several years. If the ECB responded to current inflation and growth prospects in the same way as it did in the past, it would not have contemplated extending the purchase programmes to public-sector bonds on such a scale. Considerable risks to financial stability will accumulate if this policy continues. ⭨ ITEMS 401FF. Favourable financing conditions can also tempt governments to postpone or abandon consolidation and structural reforms.

352. The discussion about possible secular stagnation and long-term equilibrium real interest rates of close to, or even below zero is inherently speculative. Such low equilibrium interest rates can indeed be derived from theoretical models. On the basis of the empirical evidence, however, we cannot conclude that medium and longer-term equilibrium interest rates have fallen to the same degree as actual

real interest rates. The heterogeneous developments in the euro area constitute **evidence against a secular stagnation** that governments could only fight with large new spending programmes and higher public debt. On the contrary: those member states that have followed the path of consolidation and reform most decisively have succeeded more quickly in returning to higher growth and employment.

353. Reversing the consolidation steps in individual crisis countries would threaten the **credibility** of the consolidation process and its supply-side effects. Proposals to launch new debt-financed spending programmes in Germany do not withstand closer scrutiny, nor do proposals to postpone competition-improving reforms in crisis countries because of the fear of deflationary effects. Governments should not be follow these recommendations.

354. The empirical evidence on equilibrium interest rates **does not sound the all-clear** in terms of the risks resulting from the low-interest rate policy and large-scale government bond purchases. The ECB should not attempt to use additional bond purchases to prevent market corrections that would lead to higher interest rates in the medium and longer term. Instead, it should **slow down the expansion of its balance sheet** or even end the quantitative easing programme earlier than announced.

## A different opinion

355. One member of the Council, Peter Bofinger, holds a different opinion than that expressed in the analysis of monetary and fiscal policy in the European Monetary Union in this chapter.

356. The majority of the GCEE members conclude in their analysis of European Central Bank (ECB) measures that its monetary policy is "too expansionary". The ECB should slow down the expansion of its balance sheet or even end it earlier than announced. Thus the majority argue in favour of **changing the course of monetary policy**. Their line of reasoning rests primarily on the risks to financial stability and the danger that governments could be tempted to postpone consolidation and structural reforms due to the low interest rates.

357. The magnetic north for the ECB's monetary policy is its mandate, the primary objective which is to ensure **price stability**. Consequently the extent to which current monetary policy is in line with this objective should be the main focus of examination. The GCEE majority argue that core inflation, the GDP deflator and long-term survey-based forecasts of inflation show no signs of a "dangerous self-reinforcing deflationary trend". One important thing to consider, however, is that this could be due to the ECB having already practiced a very expansionary monetary policy for more than a year. Another point to bear in mind is that the ECB's task is not only to prevent dangerous deflationary trends, but rather to counteract inflation, which is significantly below the target of "below, but close to, 2 %".

358. Thus the appropriateness of monetary policy should be judged primarily on the basis of **inflation forecasts**. Assuming short-term interest rates (EURIBOR) of 0.0 % in 2016 and 0.1 % in 2017, the ECB staff comes to the following conclusion in its September 2015 forecast: the rate of inflation as measured by the HICP will be 1.1 % in 2016, and 1.7 % in 2017. Other institutions forecast rates slightly lower still. Thus even with current monetary policy, forecast inflation rates for 2017 are still slightly below the ECB target. ⬊ TABLE 16 No dangers of inflation are expected even for a time horizon up to 2020, which shows the credibility and appropriateness of current ECB monetary policy.

    Thus, with regard to the ECB's mandate and on the basis of inflation forecast there is no cause to for a change of course in monetary policy. ⬊ TABLE 16

359. The majority base their analysis primarily on the **change rule** of Orphanides and Wieland (2013). The rule still requires a rate hike before the end of this year. It would only signalise quantitative easing if the resulting interest rates fell into negative territory. Compared with this rule, the ECB would significantly deviate from its earlier policy.

    However, this is no argument for the inappropriateness of current ECB policy. As it is very difficult to combat deflation with monetary policy, a central bank would be well advised to stronger dose out its interest rate policy and liquidity policy measures in a very low inflation situation than in other periods.

360. The **Taylor rule**, as is shown in ⬊ CHART 46 is an important heuristic for assessing interest rate policy. The problem with this, however, is appropriately determining the neutral short-term money market rate (Bernanke, 2015). Hamilton et al. (2015) determined a range of somewhat more than 0 % to 2 % for the US, with the caveat that uncertainty is extremely high. The output gap also presents considerable problems in estimation. Clarification is also needed on which price index should be used. Bernanke is opposed to the GDP deflator, as this also includes assumed prices of public services and prices of capital goods, but not prices of imported consumer goods. Bernanke thus proposes the personal consumption expenditure deflator.

    In view of these uncertainties, the Taylor rule should be used with a great deal of caution. The extent to which this rule has proven to be a problem in the context of developments since the outbreak of the financial crisis can be noted in the fact that the interest rates it suggests for the period since 2010 at times exceed the

⬊ TABLE 16

**Euro area inflation forecasts**

|  | 2015 | 2016 | 2017 | 2020 |
|---|---|---|---|---|
| ECB Staff | 0,1 | 1,1 | 1,7 | . |
| European Commission | 0,1 | 1,0 | 1,6 | . |
| Euro Zone Barometer | 0,2 | 1,1 | 1,6 | 1,8 |
| Consensus Economics | 0,2 | 1,2 | 1,5 | 1,9 |
| Survey of Professional Forecasters | 0,1 | 1,0 | 1,5 | 1,9 |
| IMF | 0,1 | 1,0 | 1,3 | 1,7 |

Sources: European Commission, ECB, IMF

SVR-15-446

ECB's actual key policy rate by several basis points. In light of the euro area's weak economic development and inflation rates significantly below target, interest rate policy closely aligned with the Taylor rule would have likely exacerbated the crisis in Europe in recent years. Therefore using the rule as a benchmark in the current situation would not be advisable.

361. Interest rate rules are undoubtedly **interesting heuristics** for monetary policy analysis, but should not be overestimated as they were derived from actual behaviour of central banks in the past. They are therefore only suitable to a limited extent to describe an **optimal monetary policy**. This applies all the more in a situation which fundamentally differs from developments of recent decades due to very low inflation and key policy rates hovering at the zero lower bound.

    In this respect, considerably more weight should be given to conclusions based on inflation forecasts than to a need for action indicated by interest rate rules.

362. With the primary aim of monetary stability, it is nonetheless important to take into account the **risks to financial stability** inherent in the ECB's monetary policy. These risks play a decisive role for the majority of GCEE members. Thus the first question to be asked is whether obvious risks to financial stability can indeed be derived from the very low interest rates.

363. The ECB (2015) points out that its policy provides a **positive contribution to financial system stability.** The recovery in aggregate demand stimulated by the policy resulted in higher nominal growth. This contributes to reducing the real debt burden on public, private and corporate budgets. It enabled the euro area to avoid an unfavourable downward spiral of higher debt with negative impacts on financial stability. Moreover, rising asset prices improved the financial situation of companies and private households, in turn positively affecting their creditworthiness.

364. The majority do not take sufficient account of the positive effects of the low interest policy on borrower solvency. Its focus is instead on the **lenders**, with a regard to the dangers to financial stability. Low interest rates would undermine banks' and insurance companies' business models and favour exaggerated asset prices, they say.

    The year-on-year growth rate of euro area bank loans to companies was 0.1 % and for loans to private households 1.6 % in September 2015. So not even the start of a new credit cycle in the making can be determined as yet. The danger of **banks' business models being undermined** therefore results primarily from unusually low demand for their most important product, loans to private households and companies, due to the extremely low interest rates. **Depletion of banks' equity** is counteracted by the supervisors monitoring relevant capital requirements and demanding that adjustments, such as capital increases, be made if necessary. Significant asset price exaggerations have also not been noted for the euro area overall. The greatest risk at this time is **excessive maturity transformation by banks**. However, these risks can be addressed by more systematically including them in regulation, particularly by taking them into account in Pillar I. ↘ ITEM 415

365. The disadvantages to banks' interest business that doubtlessly go hand in hand with the low interest policy are offset by the advantages that arise from the simultaneous **improvement in credit quality** of governments, companies and private households. Given the persistent high debt of companies, private households and governments, the worst case scenario for euro area financial stability would definitely be a slide into deflation. Irving Fisher (1933) coined the term "**debt deflation**" to describe this.

366. The GCEE majority moreover repeat the argument that the ECB should take into account the potential **misguided incentives** to member state governments in its purchases of government bonds. Favourable financing conditions could tempt governments to postpone or abandon consolidation and structural reforms.

   If the ECB were to justify its monetary policy in this manner and even accept a failure to meet its inflation target, it would clearly **overstep its mandate**. As the German Federal Court of Justice (*Bundesgerichtshof*) determined, the treaties limit the ECB's mandate to monetary policy (Articles 119 and 127ff. of the Treaty on the Functioning of the European Union (TFEU) and Articles 17ff. of the Statute of the ESCB (European System of Central Banks)). The ECB is not authorised to make its own economic policy, but limited instead limited to supporting economic policy in the European Union.

   Developments in **Italy**, in addition, are a case in point showing that governments can indeed be prepared to undertake extensive structural reforms even under favourable financing conditions.

367. The GCEE majority note that those member states that have already more resolutely embarked on the path to consolidation and reform grow at a faster rate. Yet there is no systematic connection between the reduction of the structural deficit from 2014 to 2015 and the GDP growth rate in 2015 for euro area member states. ↘ CHART 54

   Growth clearly did not start up again in the euro area as a whole until after **consolidation had actually been** terminated. The GCEE majority also acknowledge this positive effect. ↘ ITEM 167 The structural deficit was reduced by only 0.15 percentage points per year from 2013 to 2015. The debt ratio has actually risen slightly since 2013. If, despite its extremely low interest rates and almost neutral fiscal impetus due to the end of consolidation efforts, the euro area only achieves a growth rate that the majority considers to be "disappointing", this could be evidence of a "**secular stagnation**", which can indeed be equated with chronically low demand.

368. At a growth rate of around 3 %, **Spain** is currently one of the member states with particularly high economic growth. The majority thus present it as a model of successful reform policy. But, it should not be overlooked that Spain continues to have relatively strict regulation in key areas, particularly in the service sector and for start-ups (IMF, 2015).

↘ CHART 54
**Consolidation and economic growth in the euro area**



Source: IMF

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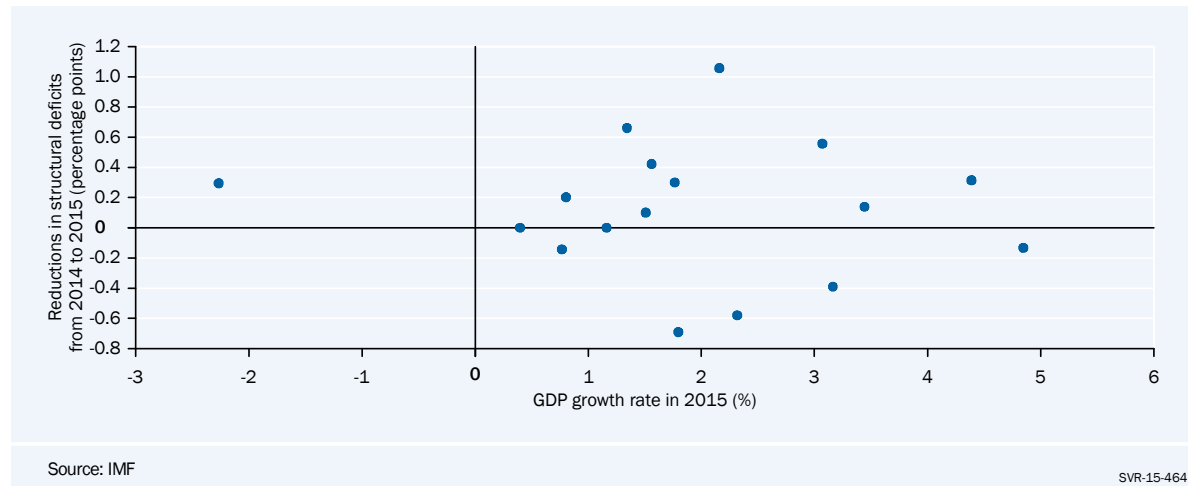
Part of Spain's growth can be relativised by the fact that in 2014, it posted the largest **negative output gap** (5.0 %) after Greece, which means that assumptions of a long-term higher growth rate should not be made on the basis of current growth rates. The International Monetary Fund (IMF, 2015) predicts that potential output in Spain will grow at a rate of 1.2 % for 2015 – 2020, the same rate as for France. Moreover, at 4.6 %, Spain continues to post the **highest budget deficit** of the entire euro area; among the world's 37 advanced economies, as classified by the IMF, only Japan has an even higher deficit at this time. Spain's structural deficit as determined by the IMF has only been reduced by an average of 0.35 percentage points per year since 2013. The country's current positive growth performance also reflects the fact that it has only opted for an extremely moderate consolidation plan in view of its very high deficit. Consequently Spain should not be cited as a counterexample of the "secular stagnation", which governments "can only combat with higher levels of government debt". ↘ ITEMS 328FF.

369. All in all, the ECB has implemented an **extremely successful policy** since 2012. It reacted promptly to an emerging downward trend in inflation and laid the foundation for recovery of euroarea economic activity with quantitative easing. This had not least a positive impact on the financial situation of indebted companies and individuals. The insufficient monetary policy options for effectively combating deflation once it has set in thus also justify a certain occasional overdose of individual tools. A period of inflation rates considerably below ECB target, or even of deflation, would pose the greatest threat to euro area financial stability, as this would have a serious negative impact on reducing high private sector and government debt levels.

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# APPENDIX TO THE CHAPTER

## 1. A simple rule to describe the ECB interest rate decisions

370. **Simple interest rate rules** are frequently used as benchmarks to assess central banks' rate-setting behaviour. An interest rate rule can serve as a measure of monetary policy optimality or as a tool to describe its behaviour. In fact, ECB President Draghi stated in the press conferences in July and August 2013 that ECB interest rate policy could be described and predicted by means of reaction functions (Draghi 2013a, 2013b).

371. ECB interest rate decisions can be well described by a **simple rule for interest rate changes** (Orphanides and Wieland, 2013). Unlike the Taylor rule, it requires no estimate of the equilibrium interest rate as the relevant rate change is calculated from the preceding level of the actual ECB policy rate. The rule explains the ECB's policy rate changes, $\Delta i$, by means of a reaction to the deviation of the inflation forecast, $\pi^F$, from the ECB target, $\pi^*$, and a reaction to the deviation of the growth forecast, $\Delta q^F$, from estimated potential growth, $\Delta q^*$. As in the Taylor rule, the reaction parameters are 0.5 in each case:
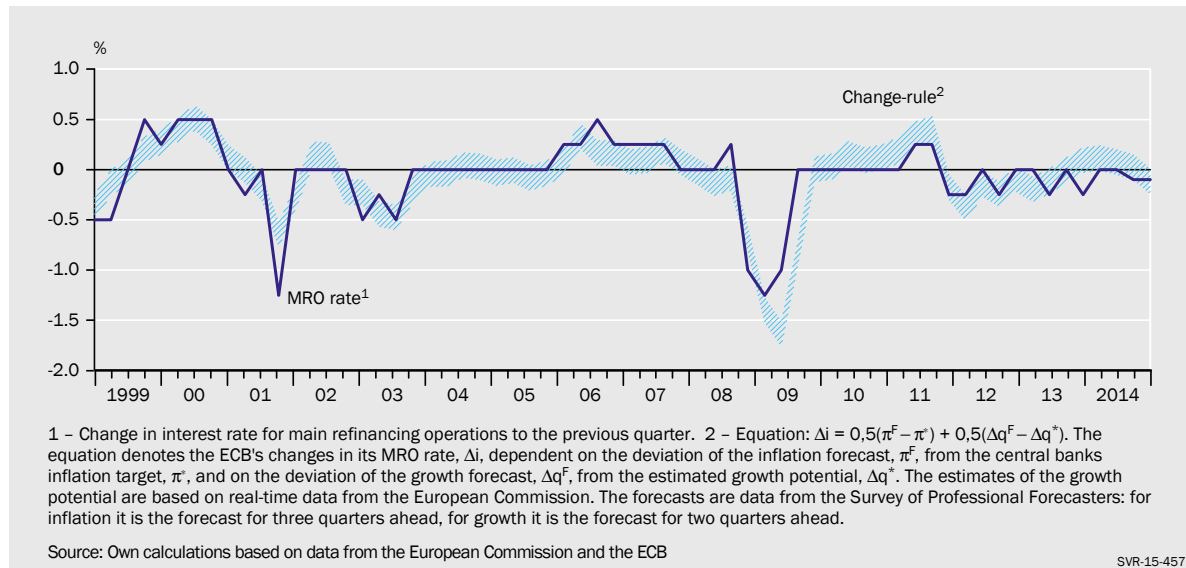
(1)     $\Delta i = 0{,}5(\pi^F - \pi^*) + 0{,}5(\Delta q^F - \Delta q^*)$

The forecasts used in this calculation are based on SPF data. The SPF forecast value for threequarters-ahead is used for expected inflation, and the value for twoquarters-ahead for expected GDP growth. The latter means that only output gap changes affect rate-setting. The potential growth estimates are based on European Commission real-time data. Moreover, the ECB inflation target, $\pi^*$, is approximated with a range of 1.5 % − 2 %.

372. The **resultant interest rate band** has a 0.25 % range. **In most cases** between 1999 and 2014, **it includes the changes in the rate on main refinancing operations** (MRO rate) actually adopted by the ECB. ↘ CHART 55 In rounding the band to 5 or 0 basis points in the second decimal place, i.e. in line with normal settings of MRO rates, 66.1 % of rate changes fall within the estimated range. Rounding the band to 25 basis points, which means the smallest observed rate hike prior to 2014, puts 82.3 % of policy rate changes within the range.

373. The **explanatory power of the change rule** (or difference rule) is rooted in the deviations of the SPF forecasts from the relevant reference values, i.e. the assumed ECB's inflation target and the estimate of potential growth. As the ECB does not publish its potential growth estimate, the European Commission's estimate is used. The SPF forecasts are prepared for the ECB Governing Council meetings each quarter and published after the meetings. The change rule thus establishes a **connection between the current state of information** at the time of the meeting **and the monetary policy decision** taken during the

↘ CHART 55
**Interest rate band of monetary policy rules compared to the MRO rate (quarterly change)**



1 – Change in interest rate for main refinancing operations to the previous quarter.  2 – Equation: Δi = 0,5(π$^F$ − π$^*$) + 0,5(Δq$^F$ − Δq$^*$). The equation denotes the ECB's changes in its MRO rate, Δi, dependent on the deviation of the inflation forecast, π$^F$, from the central banks inflation target, π$^*$, and on the deviation of the growth forecast, Δq$^F$, from the estimated growth potential, Δq$^*$. The estimates of the growth potential are based on real-time data from the European Commission. The forecasts are data from 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.

Source: Own calculations based on data from the European Commission and the ECB

SVR-15-457

meeting. The prevailing MRO rate set a quarter ago has no explanatory power for the rate change from this level.

374. The connection between the rate changes recommended by the interest rate band and the actual changes can be illustrated by means of a **scatter plot**. ↘ CHART 56 To this end, the question was examined as to whether the interest rate band determined by the change rule in equation (1) (rounded to 5 basis points) includes the ECB's actual interest rate change at the relevant point in time. In this case, the rule-based rate change is set equal to the actual value. If the actual rate change falls outside the band, the difference between it and the range bound is used.

The point cloud in the scatter plot suggests a **significant relationship**. This can also be seen in the correlation and the measure of dispersion. The coefficient of determination $R^2$ for the period from 1999:Q1 to 2014:Q2 is just under 84 %. Taking only the mean of the interest rate band from the change-rule and comparing it to the ECB's actual policy rate change still yields a high $R^2$ of 67 %.

375. **Econometric estimates confirm** a **significant relationship** between the actual interest rate changes and the SPF forecasts (Bletzinger and Wieland, 2015). The following equation results for the estimation period from 1999:Q1 to 2013:Q2:
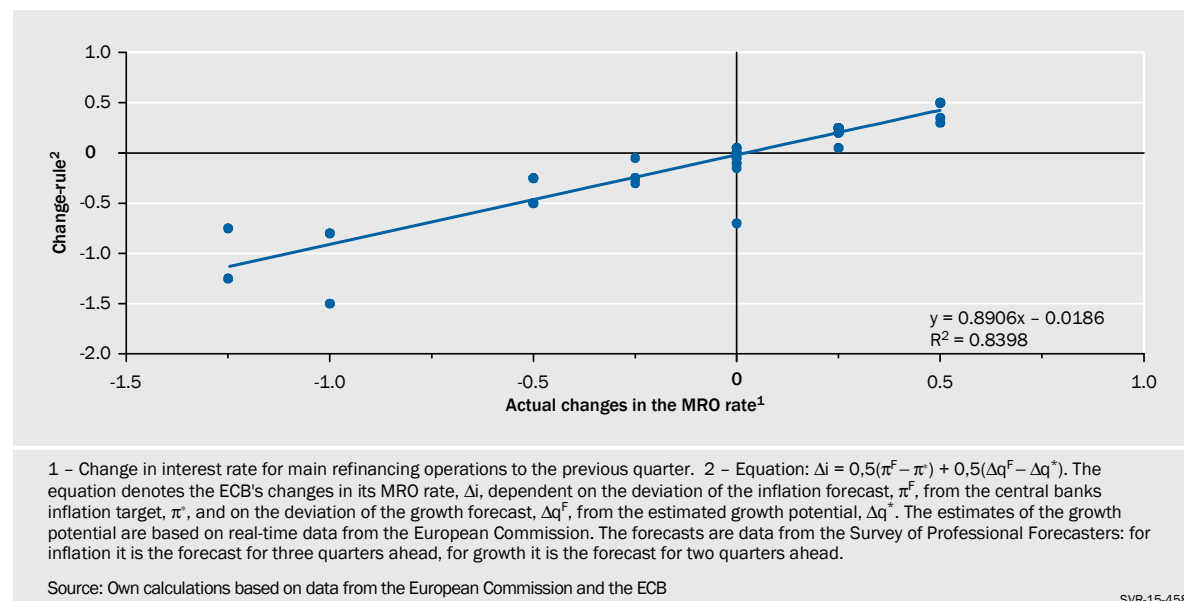
$$(2) \quad \Delta i_t = 0{,}49\big(\pi^F_{t+3|t} - 1{,}72\big) + 0{,}40\big(\Delta q^F_{t+2|t} - \Delta q^*_{t+2|t}\big)$$
$$[0.12] \qquad [0.06] \quad [0.04]$$

The estimated inflation target rate π* of 1.72 % (standard error: 0.06) falls almost exactly in the middle of the range employed by Orphanides and Wieland. The reaction coefficient for the SPF inflation forecast is 0.49. The coefficient for the SPF output gap is estimated at 0.40. The coefficients hardly differ from the 0.5 value employed by Orphanides and Wieland (2013) in the change-rule. The $R^2$ is 0.67, which means that the deviations in SPF inflation and growth forecasts from the reference values explain 67 % of observed variation in interest rate

**Comparison of actual changes in the MRO rate and changes based on the change-rule**



1 – Change in interest rate for main refinancing operations to the previous quarter.  2 – Equation: $\Delta i = 0{,}5(\pi^F - \pi^*) + 0{,}5(\Delta q^F - \Delta q^*)$. The equation denotes the ECB's changes in its MRO rate, $\Delta i$, dependent on the deviation of the inflation forecast, $\pi^F$, from the central banks inflation target, $\pi^*$, and on the deviation of the growth forecast, $\Delta q^F$, from the estimated growth potential, $\Delta q^*$. The estimates of the growth potential are based on real-time data from the European Commission. The forecasts are data from 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.

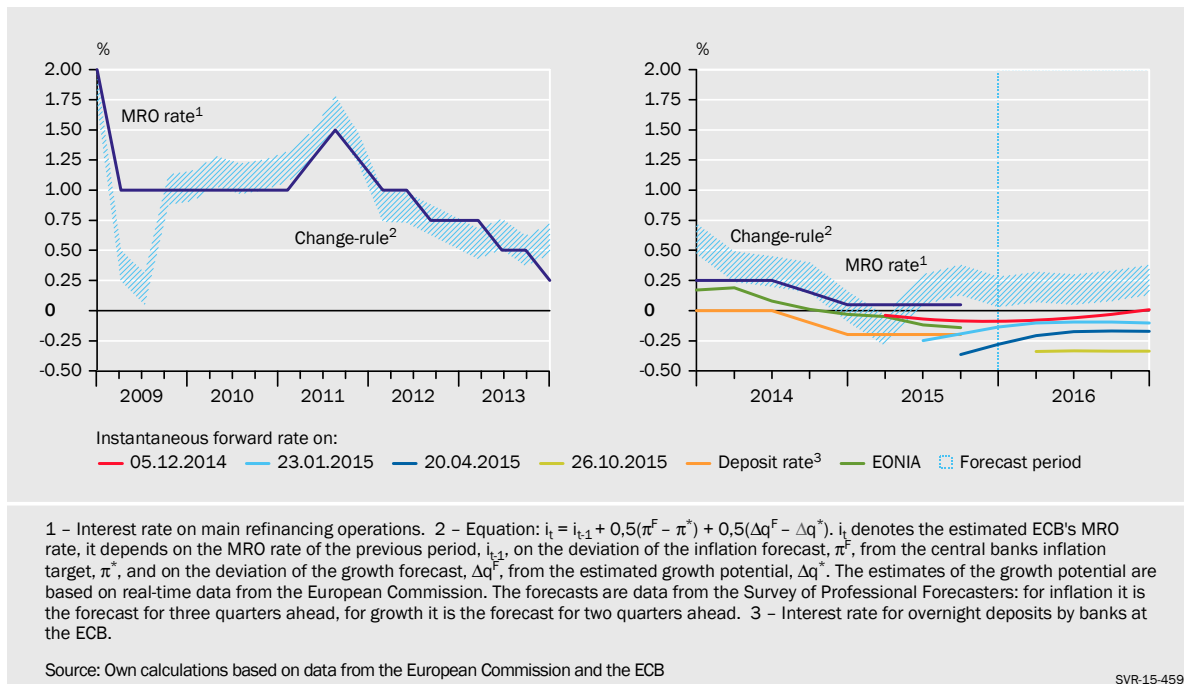Source: Own calculations based on data from the European Commission and the ECB

SVR-15-458

changes. The lagged interest rate change, on the other hand, would only explain 23 % of the variation.

Bletzinger and Wieland (2015) also show that a regression that replaces the SPF forecasts with the annual ECB staff projections yields a coefficient of determination of only 0.36. If the ECB staff projections are employed along with the SPF regressions, their contribution proves insignificant. The annual **ECB staff projections thus have no significant additional explanatory power**.

376. The **German Council of Economic Experts** uses the interest rate band resulting from application of Orphanides and Wieland's change-rule (2013) to assess whether the ECB deviates from its previous decision-making. The interest rate band moved above the main refinancing rate in the 2nd to 4th quarter of 2015. In this regard, it should be taken into account that the overnight money market rate has not been determined by the main refinancing rate for some time now, but rather by the ECB's deposit rate. This currently stands at −0.20 % and thus significantly below the policy rate band. ↘ CHART 57 The interest rate band consequently recommends a small rate increase relative to the deposit rate in the last 3 quarters. While relevant inflation forecasts were below the target range assumed, growth forecasts exceeded estimated potential growth.

377. However, the ECB decided additional easing measures as early as January 2015. In particular, it has been implementing a comprehensive bond purchase programme since then, as a result of which yields on medium to long-term government bonds have fallen into negative territory. ↘ ITEMS 292F. The effect of these monetary policy decisions is reflected in the implied anticipated short-term rates, which the ECB derives from the yield curve. ↘ ITEM 298 These implied rates have fallen to around −0.4 % in recent months as a result of the bond purchases. The difference between the interest rate band and implied rates will increase further if the rate band is continued into the future based on the two-year SPF forecasts.

⬂ CHART 57

**Interest rate band of monetary policy rules compared to the MRO rate,
instantaneous forward rates and the deposit rate**



Instantaneous forward rate on:
— 05.12.2014   — 23.01.2015   — 20.04.2015   — 26.10.2015   — Deposit rate[3]   — EONIA   ⬚ Forecast period

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, $\pi^F$, from the central banks inflation target, $\pi^*$, and on the deviation of the growth forecast, $\Delta q^F$, from the estimated growth potential, $\Delta q^*$. The estimates of the growth potential are based on real-time data from the European Commission. The forecasts are data from 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 – Interest rate for overnight deposits by banks at the ECB.

Source: Own calculations based on data from the European Commission and the ECB

SVR-15-459

**378.** The interest rate band from the change-rule, in contrast, would have only indicated the necessity of comprehensive quantitative easing if it had fallen significantly into negative territory. The conclusion is that the bond purchase programme leads to a **stronger monetary easing than** would be implied by the **historical ECB reaction to the inflation and growth forecasts**.

# 2. Significant reforms in Italy and Spain

⬂ TABLE 17

**Overview of main reform measures on labour, goods and financial markets in Italy and Spain[1]**

| Year | Italy | Spain |
|------|-------|-------|
| **2010** | | **Labour market:** Improved flexibility for companies (lower dismissal costs, promotion of contracts with lower severance pay, simplifications of opt-out from collective wage agreements) |
| **2011** | **Labour market:** Revised indexing of pension system (no increase for high pension levels), immediate extension of the contribution-based system for previously grandfathered workers, stricter qualifying conditions for pensions and an earlier increase in the retirement age (for men: 66 from 2012; for women: gradual increase to 66 by 2018). However, in April 2015 the Italian constitutional court declared parts of the reform as unconstitutional. For example, retrospective payment to pensioners of the inflation-adjusted increases that had been halted by the reform must now be made. **Goods market:** More flexible opening hours and simplified market entry in the retail sector | **Labour market:** Retirement age raised from 65 to 67, contribution-based system for full pension entitlement extended, larger deductions for early retirement and lower subsidies for partial retirement |

| | | |
|---|---|---|
| **2012** | **Labour market:** more general unemployment benefits, slightly lower employment tax for companies taking on young people and older workers<br><br>**Goods market:** Liberalisation for network industries and free professions, administrative streamlining for the competition authority and judiciary, reform of the insolvency regime with new provisions to tackle and prevent corruption in public administration<br><br>**Financial market:** Liberalisation on the markets for corporate bonds and securities of non-listed companies | **Labour market:** Greater flexibility for companies (improved advanced and vocational training contracts, foundations laid for a dual vocational training system, small companies able to issue permanent contracts with a one-year probation period and receive financial incentives, greater ability to opt out of collective wage agreements and reduced dismissal costs)<br><br>**Financial market:** Law (9/2012) on government intervention in distressed banks (includes EU Commission requirements (Memorandum of Understanding "MoU") to establish a framework for the recovery and resolution of banks): increased powers for the FROB (Fund for Orderly Bank Restructuring) to (1) recapitalise, restructure and resolve distressed banks in a way that minimises costs to the taxpayer and (2) have a system to intervene more quickly to protect financial stability while also protecting property rights |
| **2013** | **Labour market:** Improvements in active labour market policy (introductions of a fund to support reinstatement of the jobless, employment subsidies for workers with low income and improved financial incentives for employers to hire unemployed workers and young people)<br><br>**Goods market:** Deregulation of energy markets (fuel distribution, ownership unbundling of gas production and distribution) | **Labour market:** Revised indexing of the pension system (linked to financial situation of the social security system and life expectancy), tightening of the rules for early or partial retirement<br><br>**Goods market:** Market unity law to reduce national market fragmentation<br><br>National Commission for Markets and Competition established to regulate transport, the postal service, energy and telecommunications more efficiently<br><br>More flexible shop opening hours and reduction in red tape at municipal level<br><br>**Financial market:** Improved management of savings banks and reduction of the risks to their financial stability, (Law 26/2013), (part of the ESM programme): transfer of large parts of savings banks' activities to new commercial banks. These are supervised by the Banco de España (BdE) and are now better able to raise capital. Improvements in corporate governance with stronger rules concerning conflicts of interest in order to reduce political interference. Size restrictions on banks and limitation of their banking activities to their home region in order to reduce systemic risks. |
| **2014** | **Labour market:** Improved flexibility for companies (fewer restrictions for temporary and permanent employment contracts), reduction in dismissal costs, extension of unemployment benefits. (Jobs Act)<br><br>**Goods market:** Transport authority and restructured energy and water authority have now begun work (reduction in regulations, for example: improved access to rail network, passenger rights, airport fees, tender criteria for motorways and local public transport)<br><br>**Financial market:** Improved access to capital for companies (for example, greater consideration of group equity, tax incentives for investments in mini-bonds and investment support programmes, further improvements to the central guarantee fund for small and medium-sized enterprises (SMEs), introduction of direct lending by insurers, incentives for SMEs to list at the stock exchange) | **Financial market:** Reform of the insolvency regime (Law 17/2014) with improvements to the Spanish Insolvency Act (SIA): easing refinancing agreements for a faster deleveraging of companies, revision of insolvency proceedings and an improved system of insolvency administration |

1 – The reforms described constitute broad measures in the view of the European Commission, IMF and OECD.

GCEE-15-291

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