Monetary Policy Stretched to the Limit:

How Could Governments Support the European Central Bank?

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Abstract

This paper takes the 25th anniversary of the Maastricht Treaty as an opportunity to review the relationship between euro area governments and the European Central Bank (ECB). This is motivated by the emergence of a new style of central banking and related calls for an active fiscal policy to address a demand-driven secular stagnation. During the sustained low inflation episode of 2014-16 the ECB's monetary policy was increasingly stretched to the limit and its non-standard monetary easing measures leading to ultra-low interest rates drew criticism for their adverse side-effects. This paper considers three areas where the national governments could act as the 'joint sovereign' behind the euro and support the ECB in its task of maintaining price stability within the framework of the Maastricht Treaty. First, they could strengthen economic policy coordination in order to secure a growth-friendly overall policy mix at the euro area level. Second, they could commit to protecting the Eurosystem from potential large capital losses related to its 'quasi-fiscal' monetary actions. Third, they could create a safe sovereign asset for the eurozone that enhances financial integration and facilitates monetary policy implementation without debt mutualisation. The fundamental solution, however, lies in advancing with political integration and establishing a euro area fiscal counterpart to the ECB with full respect for central bank independence.

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In recent years it has often been said that the ECB has become the "only game in town" for stabilising the euro area economy. As governments have had to consolidate their fiscal positions, there has been an unprecedented onus on monetary policy to support aggregate demand. [However,] central banks cannot remain the "only game in town" indefinitely. Peter Praet (2017).

Since the strength of a currency – and the public's confidence in it – is closely related to the political structure that supports it, … the Eurosystem's "institutional loneliness" will need to be addressed. Tommaso Padoa-Schioppa (2000).

1. Introduction

The Maastricht Treaty established the foundations of the Economic and Monetary Union (EMU) of Europe and laid down the legal framework for the introduction and functioning of the euro. The EMU architecture was designed to prevent political dominance over the single monetary policy which – as national experience had shown – could cause high inflation and destabilise the currency. Accordingly, the European Central Bank (ECB) was given an independent monetary policy mandate with maintaining price stability for the euro area as a whole as its primary objective.[1] In addition, national fiscal policies were subjected to market discipline and common surveillance to ensure sound public finances. Taken together this was expected to secure the stability of the euro.

This paper takes the 25th anniversary of the Maastricht Treaty, which was signed in February 1992, as an opportunity to review the relationship between euro area governments and the ECB. The motivation lies in the emergence at the global level of a new style of central banking and the related call on fiscal policymakers to add their weight in fighting a demand-driven secular stagnation that is characterised by a very low or even negative equilibrium or neutral real interest rate (Summers, 2014). Since monetary policy rates are constrained by the zero lower bound, central banks seeking to shadow the neutral real interest rate had to implement unconventional tools to further relax financing conditions in response to deflationary pressures. Yet, the ample availability of cheap money could be accompanied by excessive risk-taking in search for higher yields. A fiscal expansion could in these circumstances relieve the burden both on the central bank to restore macroeconomic equilibrium and on prudential supervisors to preserve financial stability.

[1] The responsibility for the single monetary policy of the eurozone lies with the Eurosystem and the Governing Council of the ECB as its decision-making body. The Eurosystem is made up of the ECB and the National Central Banks (NCBs) of the Member States of the European Union (EU) whose currency is the euro. For ease of reference, this paper uses ECB and Eurosystem interchangeably.

According to Summers (2014) and others, the theory of secular stagnation could be of particular relevance for the euro area. The euro area economic performance between 1999 and 2008 turned out to be unsustainable and its output gap was persistently negative since 2009. The equilibrium or neutral real interest rate of the euro area is estimated to have fallen to a very low or even negative level (Holston et al., 2016). As a result, during the sustained low inflation episode of 2014-16 the ECB's monetary policy was increasingly stretched to the limit (Micossi, 2015). While targeted at bringing euro area inflation durably back in line with price stability, the non-standard monetary easing measures (comprising in particular negative money market rates, subsidised bank refinancing and large-scale asset purchases) drew criticism for their unintended adverse side-effects (van Riet, 2017c).

Arguably, the Maastricht Treaty was not designed for periods characterised by very low interest rates and deflationary pressures. While the strict separation between euro area governments and the ECB was appropriate when there were upside inflation risks, at the zero lower bound for interest rates it appeared to unduly constrain the central bank in applying non-standard monetary easing measures which involved taking on exceptionally large risks on its balance sheet with quasi-fiscal implications. A euro area treasury to provide active fiscal support was missing, reflecting the ECB's "institutional loneliness" at the EMU level (Padoa-Schioppa, 2000, p.37). The Stability and Growth Pact focused on national public finances and the need for fiscal austerity in many member countries complicated the ECB's fight against low inflation (Corsetti et al, 2016; Ubide, 2016). EMU needed more effective macroeconomic stabilisation tools, especially in a secular stagnation.

This paper reviews how the 19 national governments could act as the 'joint sovereign' behind the euro (Hoeksma and Schoenmaker, 2011) and support the single monetary policy by establishing broadly similar framework conditions as exist in other currency areas to address a serious economic downturn. First, they could agree to speed up balance sheet repair and strengthen supply-side conditions in their countries as a precondition for effective euro area macroeconomic stabilisation both through monetary and fiscal stimulus. Second, governments could explicitly assume final responsibility for the financial risks associated with any standard or non-standard monetary operations that the ECB needed to undertake. Third, they could establish a synthetic safe eurobond without debt mutualisation in order to enhance financial stability and facilitate monetary policy implementation. The fundamental solution, however, lies in advancing with political integration and establishing a euro area fiscal counterpart to the ECB with full respect for central bank independence.

This rest of this paper is organised as follows. Section 2 recalls the separation between ECB monetary policy and national fiscal policies in the Maastricht Treaty. Section 3 reviews the new era of central banking in the wake of the global financial crisis and the related call for a more active fiscal policy to relieve the burden on monetary policy. Section 4 reviews the conduct of ECB monetary policy in 2014-16 when substantial monetary accommodation was warranted to counter low inflation. Section 5 presents three ways for national governments to assist the ECB in fulfilling its mandate. Section 6 concludes that these fiscal support mechanisms for monetary policy are feasible within the framework of the Maastricht Treaty.

2. The legal separation between monetary and fiscal policies in the EU

The Maastricht Treaty (in its latest incarnation as the Lisbon Treaty) on the Functioning of the European Union (TFEU) – henceforth 'Treaty' – contains a number of legal provisions that lay down the relationship between monetary and fiscal policies in the EU. They protect the ESCB/ECB's independence in the conduct of monetary policy, exclude monetary financing of public sector bodies, subject national governments to market discipline, and exclude a privileged treatment of their sovereign debt. In addition, the ESCB/ECB's Statute contains rules on its monetary policy functions and operations, the solvency of its counterparties in credit operations, the adequacy of their posted collateral, and the allocation of the monetary income of the NCBs and the net profits and losses of the ECB.[2]

In more detail, the Treaty lays down that the Member States and the Union (and thus also the ECB) shall act in accordance with the principles of an open market economy with free competition favouring an efficient allocation of resources (TFEU Article 120). These actions must furthermore be in compliance with the guiding principles of stable prices, sound public finances and monetary conditions, and a sustainable balance of payments.

The Stability and Growth Pact (under secondary EU legislation) establishes EU rules for the conduct of fiscal policies. This comprises the requirement to adhere to a medium-term budgetary position that is close to balance or in surplus (based on TFEU Article 121) and the procedure against excessive deficits (based on TFEU Article 126). The Treaty also subjects governments to market discipline by closing various loopholes that would artificially facilitate debt financing independently from the capital market.

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[2] The European System of Central Banks (ESCB) refers to the ECB and all EU National Central Banks (NCBs).

To start with, any measure (not based on prudential considerations) that establishes privileged access by governments to financial institutions is forbidden (TFEU Article 124). Furthermore, the ECB and the NCBs are prohibited from providing credit facilities to public sector bodies, or to purchase government debt instruments directly from them (TFEU Article 123). Hence, direct monetary financing of governments by 'turning on the printing presses' is excluded. A recital of Council Regulation (EC) No 3603/93 further clarifies that central-bank purchases made on the secondary market must not be used to circumvent the objective of this prohibition. Compliance with this legal provision is monitored by the General Council of the ECB and its findings are briefly reported in the ECB's Annual Report. Moreover, the ESCB/ECB's independence in carrying out its statutory tasks is ensured: it is not allowed to seek or take instructions from public sector bodies and public sector institutions in turn must refrain from seeking to influence the ECB in the performance of its tasks (TFEU Article 130).[3]

A Member State may be granted Union financial assistance if it experiences difficulties due to exceptional circumstances beyond its control (TFEU Article 122). However, neither Member States nor the European Union are allowed to assume the government liabilities of another Member State, e.g. by extending grants or making capital transfers (TFEU Article 125). This 'no bail out' rule in principle allows giving financial assistance in the form of (temporary and conditional) loans to a troubled country facing liquidity stress. This has been confirmed by the added possibility for euro area countries to operate a mechanism for safeguarding the financial stability of the euro area as a whole (TFEU Article 136.3). Although not foreseen by the Treaty, this set-up implies that, if ever a country became insolvent, it should negotiate a debt restructuring with its creditors.

The Treaty also contains provisions governing the single monetary policy. They clearly state that the central bank's primary objective is to maintain price stability (TFEU Article 127). Without prejudice to this objective the ECB is expected to support the general economic policies in the Union. These provisions aim to preserve monetary stability in the euro area and put in place a high barrier against political dominance. The Statute of the ESCB/ECB (included in the Treaty as Protocol No. 4) guides its monetary functions and operations, which are complemented by ECB Guidelines on monetary policy instruments and procedures of the Eurosystem. They allow credit operations with solvent counterparties

[3] The concept of central bank independence includes four separate types of independence, namely: functional, institutional, personal and financial independence. For a recent discussion, see ECB (2016).

against adequate collateral (Article 18). The central bank may also undertake open market operations by buying and selling outright or under repurchase agreement and by lending or borrowing claims and marketable instruments, whether in euro or other currencies. As confirmed by a ruling of the European Court of Justice, this article can be interpreted as in principle permitting central bank operations in the secondary market for sovereign debt instruments. However, these interventions must be strictly for monetary policy purposes and not aim to finance government budgets as this would amount to indirect monetary financing. As privileged access to credit is forbidden for governments (TFEU Article 124), the ECB is moreover obliged to treat public sector securities being pledged as collateral in the same way as that originating from private sector issuers. Any differentiation must be based on objective criteria, notably the level of liquidity or credit risk.

One of the ECB's other tasks is to contribute to the smooth conduct of the competent authorities' policies relating to the prudential supervision of credit institutions and the stability of the financial system (TFEU Article 127.5). The European Council may also confer specific tasks on the ECB concerning the prudential supervision of banks and other financial institutions except insurance undertakings. As from November 2014, the ECB was put in charge of the Single Supervisory Mechanism (SSM) as part of the creation of a European Banking Union with the objective to protect the safety and soundness of euro area banks and the banking system. This new microprudential supervisory function was legally separated from its monetary policy function in order to prevent conflicts of interest. Under the SSM Regulation, the ECB has also been assigned specific powers in the field of macroprudential policies. The ECB has the responsibility to assess macroprudential measures adopted by the national authorities in the countries participating in the SSM and – if deemed necessary after consultation – it has the power to apply more stringent measures aimed at addressing risks to financial stability.

As regards the accounting and reporting policies of the ECB and the Eurosystem, common rules have been established in accordance with Article 26.4 of their Statute following a prudent approach regarding unrealised versus realised gains and losses. The sum of the monetary income of the NCBs is allocated to them according to their paid-up share in the capital of the ECB (Article 32). The net profit of the ECB is distributed at the end of every financial year to the NCBs as shareholders in proportion to their paid-up capital share after transferring up to 20% to the general reserve fund until it has reached 100% of the capital (Article 33). Should the ECB incur a loss, the shortfall may be offset against: (a) the ECB's

general risk provision and the general reserve fund; and (b) the monetary income for the relevant financial year in proportion to and up to the amounts allocated to the NCBs. Any remaining net loss may be recorded on the balance sheet as losses carried forward and be offset against any net income earned in subsequent years (Bunea et al., 2016).

The ECB and the NCBs can also act as a fiscal agent on behalf of public entities (Article 21.2). For example, the ECB has accepted a role as agent for the euro area's temporary European Financial Stability Facility (EFSF) and the permanent European Stability Mechanism (ESM). Many NCBs also undertake fiscal agent tasks, for instance by offering an account for government deposits which are used for cash-management purposes and remunerated at a market rate. In addition, they often hold government bonds in their own investment portfolio. While these holdings are unrelated to the conduct of monetary policy, the ECB closely monitors them and has made these holdings subject to a ceiling.

Overall, for legal reasons, the scope for political dominance of the ECB is strictly limited. Only by bending or circumventing the rules, (over)stretching mandates, or in covert form, may elements of political interference slip in. Otherwise, if politicians' views about the role of financial markets in disciplining fiscal policy and/or the relationship between national treasuries and the ECB have changed, the Treaty itself would have to be amended. As this requires all Member States to go along, the ECB's statutory independence is exceptionally well protected. Still, if ever the ECB had to call on the NCBs as its shareholders to contribute a certain amount of additional capital (Article 28.1), the limits and conditions of the recapitalisation would have to be adopted by the EU Council (and hence determined by the Member States) after consulting the European Parliament and the European Commission (Article 42; see also Amtenbrink, 2005). This EMU-specific procedure could make it rather complicated to muster political support for an increase in the capital base of the ECB.

3. The new era of central banking: a global perspective

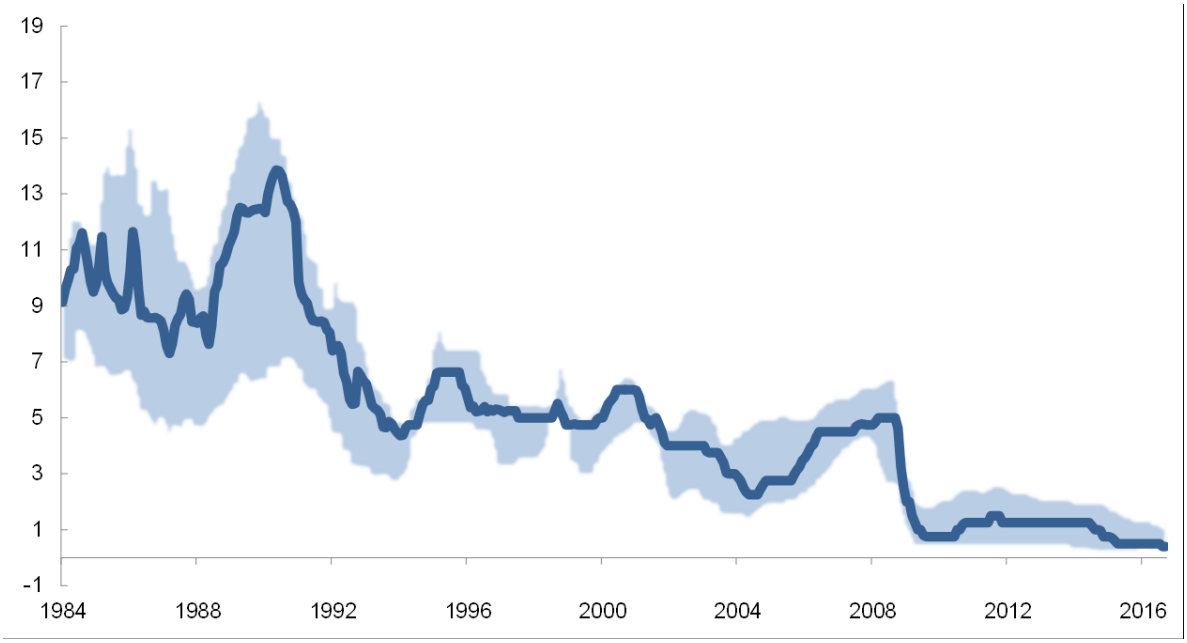
3.1 The changing operational framework of monetary policy

As observed by Goodfriend (2007), by the late 1990s, the world had achieved a broad consensus on the core principles of monetary policy centred at a priority for price stability. One of the hallmarks of this consensus is also to think of monetary policy as the task of shadowing the neutral real interest rate, defined as the short-term interest rate consistent with macroeconomic equilibrium, i.e. full employment and/or price stability over the

policy-relevant horizon. The neutral or equilibrium real interest rate (which is also referred to as the natural real interest rate) served as a benchmark for the operational or target interest rate in monetary policy reaction functions. Under the pre-crisis conventional monetary approach, central banks would typically undertake money market interventions in order to bring their operational or target interest rate in line with this benchmark rate and to influence market expectations that affected longer-term bond yields and thereby credit demand and spending. Hence, price formation in sovereign bond markets was left to market forces. This reflected the common view that central banks should have an independent mandate to focus on their monetary policy objectives and governments should pursue sound fiscal policies subject to capital market discipline.

This separation principle became untenable in the wake of the global financial crisis of 2008 and the credit crunch that triggered the Great Recession of 2009. Money market rates were more volatile and the transmission of monetary policy along the yield curve less stable. After central banks had rapidly cut their policy rates (close) to zero (see Figure 3.1) and passively accommodated the banking sector's demand for liquidity, the question was: how further stimulate credit growth in a deflationary environment in an effective manner?

Figure 3.1 – Monetary policy interest rates across advanced economies
(percent per annum)

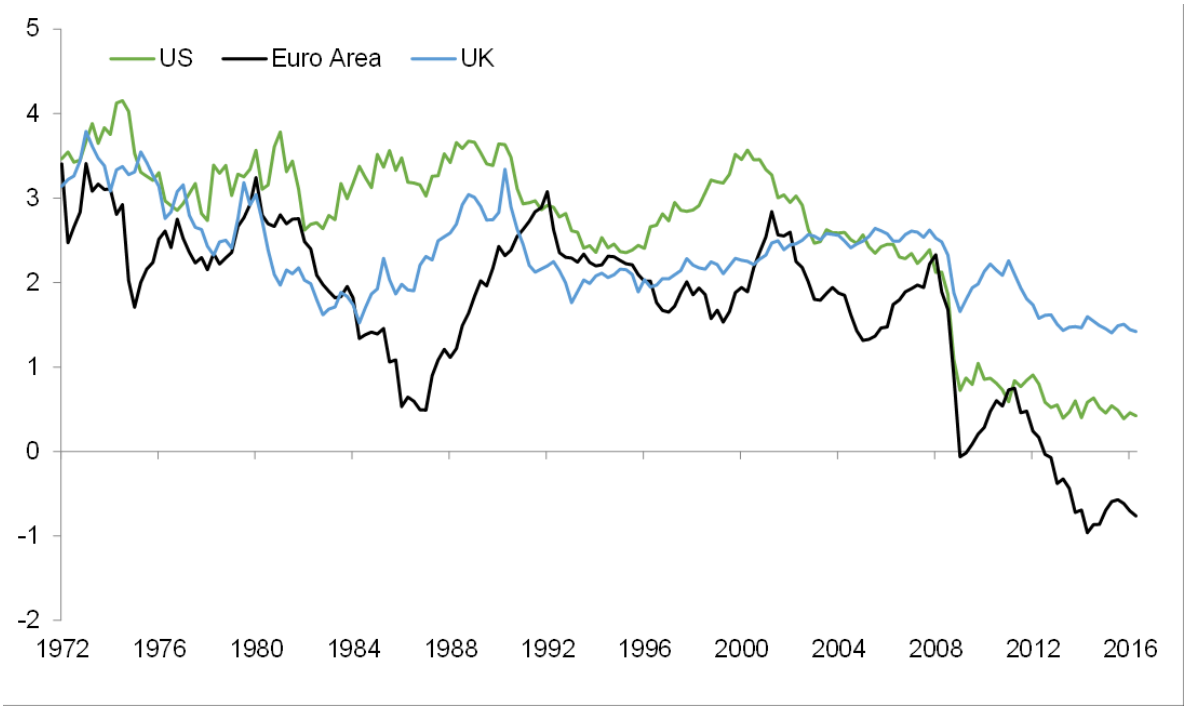


Source: Datastream. Last observation: September 2016 (monthly data).

Notes: Median, first and third quartile across advanced economies: Australia, Canada, Euro Area (since 1999), Japan, New Zealand, Norway, Sweden, UK, US.

Nominal interest rates had steadily declined over the past decades, while after the mid-1990s long-term inflation expectations broadly stabilised at around 2%. Several studies argued that this global downward trend in inflation-adjusted interest rates reflected a decreasing equilibrium or neutral real interest rate; it could be explained both by secular developments and crisis-related adjustments that disturbed the balance between desired savings and investments. The explanatory variables included *inter alia* lower potential growth and ageing populations, a global savings glut pared with a widespread investment strike, pervasive government regulation, and a scarcity of safe financial assets (Summers, 2014). The corresponding demand shortfall was due to persistent factors driving secular stagnation as well as a stretched-out process of debt deleveraging after the global financial crisis. Estimates suggested that the benchmark rate for monetary policy had fallen to a level close to zero, or even below (see Figure 3.2 based on data from Holston et al., 2016).[4]

Figure 3.2 – Estimates of the equilibrium real interest rate in Euro Area, UK and US
(percent per annum)

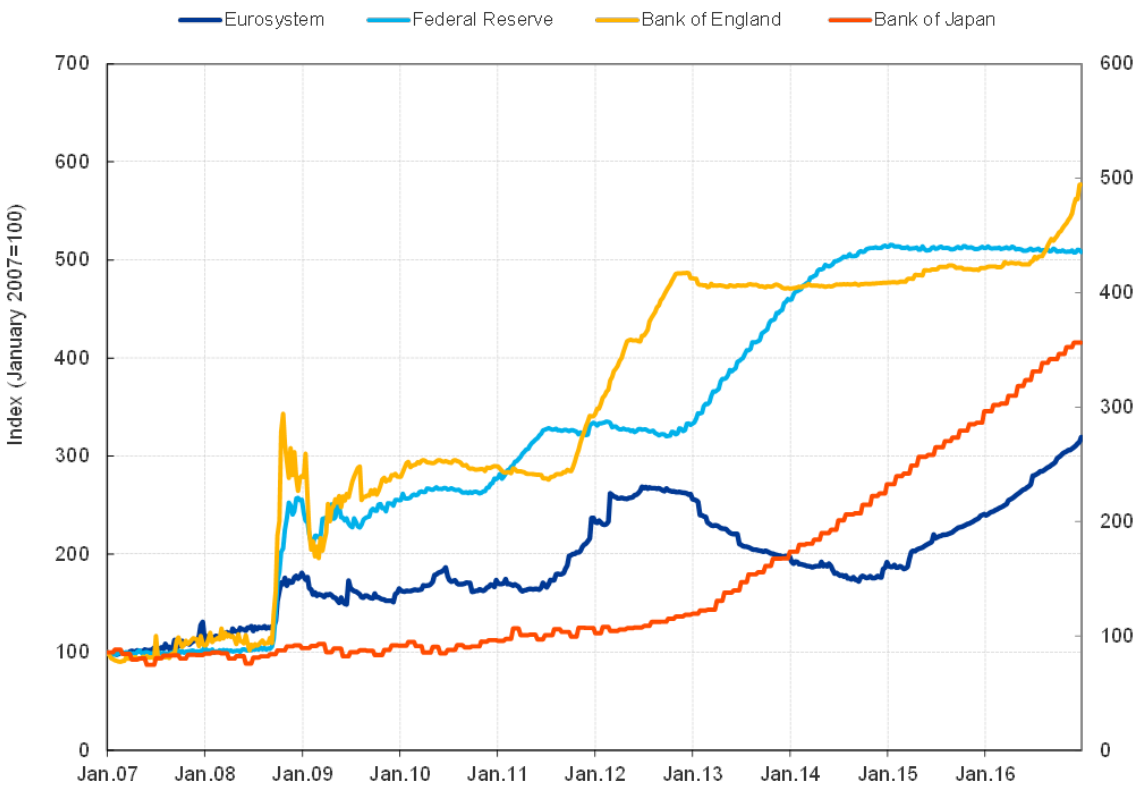


Source: Holston et al. (2016).

[4] Since the neutral or natural real interest rate is an unobservable variable and can only be estimated with a large degree of uncertainty, the exact level is open to debate (see for example Juselius et al., 2016; Taylor and Wieland, 2016).

Conventional monetary policy in this situation is constrained in its ability to cut the policy rate below the neutral interest rate, in real terms, even when slightly negative interest rates on bank reserves appear possible. Hence, the shortfall in aggregate demand remains unresolved and output growth is lower than necessary to achieve full employment, a situation which persists because traditional monetary policy cannot address it. To escape from this 'secular stagnation trap', central banks actively expanded their balance sheets (see Figure 3.3) and changed its composition in order to provide banks with ample refinancing, stabilise impaired financial markets, reduce longer-term interest rates and relax financing conditions as usual.[5] Their deep dive in the monetary policy toolbox, employing a variety of conventional and unconventional monetary instruments, marked a 'new era of central banking' (van Riet, 2017b).

Figure 3.3 – Balance sheet size of major central banks, 2007 – 2016
(index of total assets, January 2007 = 100)



Sources: ECB, US Federal Reserve, Bank of England, Bank of Japan. Latest observation: December 2016.

Note: The balance sheet of the Bank of England is approximated after 24 September 2014 since the Bank only discloses 90% of its consolidated balance sheet after this date.

[5] See Cour-Thimann and Winkler (2016) on the role of the central bank 'balance sheet of last resort' in absorbing financial risks and reducing risk exposures in the balance sheets of other economic sectors.

This new-style monetary policy activism sought to expand the central bank's influence beyond the traditional realm of short-term interest rates all along the yield curve by extracting liquidity, credit and duration risk, raising asset prices and injecting safe central bank reserves in order to relax financing conditions for the private sector. Control over the central bank balance sheet (or also monetary base control) became the new operational target of monetary policy. As a result, central banks ventured ever-more deeply in fields that were traditionally considered to be the prerogative of fiscal policy, such as credit allocation and income distribution. Moreover, they assumed ever-larger risks on their balance sheets on behalf of taxpayers. These unorthodox monetary policy measures were generally accompanied by a more explicit communication strategy to signal the intended monetary stance over a longer horizon than usual.

3.2 Monetary policies stretched to the limit

New central banking was successful in stabilising the economy in the wake of the financial crisis. Yet, at the zero lower bound the central bank tools and instruments were increasingly stretched to the limit. Three issues arise when unconventional monetary policy turns out to be the 'only game in town' and leads to bloated central bank balance sheets.

First, Yates (2004) observes that something must be 'harder' about quantitative monetary policy using the balance sheet; otherwise central banks would have applied it more frequently in the past, also away from the zero lower bound. The initial design of quantitative and credit easing programmes, the interplay with market interest rates, the recalibrations along the road and the appropriate exit strategy appear more complicated than simply adjusting the policy rate and giving forward guidance on the monetary stance. Moreover, quantitative easing in a monetary union like EMU also leads to a significant redistribution of resources between stronger and vulnerable member countries (Reis, 2017).

Second, as commented by White (2016), the effectiveness of the unconventional monetary experiments decreased over time whereas the negative side-effects increased over time. A monetary policy of ultra-low interest rates raises potential concerns about the functioning of financial markets, the health of financial institutions, the incentives for excessive risk-taking, the interference with public debt management and the sizeable distributional implications (see also van Riet (2017c). The longer exceptionally low interest rates are maintained, the more critical the adverse consequences for financial intermediation, financial stability and the functioning of market discipline. A valid question is whether the

supervisory authorities have the tools to counter the potential financial fall-out from monetary policy going to the extreme. Moreover, the perception that central banks had the economic situation under control may have encouraged governments to postpone or refrain from contentious reforms in support of balance sheet repair and higher potential growth.

Third, Orphanides (2016) raises the point of central bank accountability as the natural complement to central bank independence in a democratic society. Public trust in monetary policy might become more tentative when central banks wade far into quasi-fiscal terrain with significant distributional consequences for the private sector. Growing dissatisfaction with the expanded role of central banks could undermine public support for their statutory independence (de Haan and Eijffinger, 2016). Hall and Reis (2015) stress the implications of new-style central banking for the financial strength of central banks and, hence, their financial independence. The crisis-related practice of issuing large amounts of interest-paying reserves in order to purchase long duration assets (notably government bonds) exposes the central bank to interest-rate, default and /or exchange-rate risks. A large central bank balance sheet means that net monetary income could be negative more often than under old-style central banking, affecting the financial relationship with the government. Without a clear *ex ante* fiscal back-up for contingencies, the central bank could run into financial difficulties and the credibility of monetary policy might be impaired (Del Negro and Sims, 2015). Appropriate institutional arrangements should ensure that the central bank is always able to recover its financial strength over time and can fund its operations without political interference (see also Amtenbrink, 2005).

Against this background, it was important to return to price stability on a sustained basis as quickly as possible and to prepare for the likelihood of monetary policy rates hitting the zero bound more frequently in the future. One solution was for the central bank to raise its inflation target, for example from 2% to 4%. This would lift the average level of monetary policy rates, giving more room for manoeuvre to cut them in a deep recession below the neutral interest rate without hitting the zero lower bound (see for example Ball et al., 2016). The costs of somewhat higher average inflation were regarded as modest compared to the advantage of being able to conduct an effective standard interest rate policy in the positive range. Central bankers argued, however, that a steady rate of inflation of 4% could hardly be seen as consistent with price stability and that it would damage their hard-fought credibility for maintaining low inflation. Moreover, an inflation rate of about 2% underlies

many nominal contracts in the private sector and the adaptation of consumers and producers to a permanently higher rate of inflation could have uncertain economic consequences.

Another way out was to free the central bank's interest rate policy completely from the limits imposed by the zero lower bound, for example by taxing money or abolishing currency, so that in future the policy rate could be cut below zero as far as needed without triggering a massive shift in banknotes (as favoured by Goodfriend, 2016; see also Kimball, 2015; Ball et al., 2016). For the public, a tax or ban on cash in combination with punitive negative interest rates was nothing less than an act of financial repression. However, the advantage for monetary policy was that it would be able again to use its conventional 'unencumbered' interest rate tool in deflationary episodes rather than having to deploy other tools with quasi-fiscal and distortionary implications. Since the central bank would regain full powers to maintain medium-term price stability, episodes of negative interest rates would be short-lived and the public would enjoy a stable and more secure purchasing power of (electronic) money.

A further option in the realm of new central banking was to circumvent the financial intermediation process altogether and to directly inject liquidity into the economy through permanent monetary transfers, also known as 'helicopter drops' of money (see for example Ball et al., 2016). However, this was *de facto* a fiscal stimulus financed by printing money to avoid higher public debt. Central banks understandably were reluctant to implement it in practice, as they feared to be criticised for overstepping the boundaries of their monetary policy mandates.

3.3 The changing relationship between monetary and fiscal policies

Since monetary policy was increasingly stretched to the limit, the new era of central banking discussed above soon gave way to the 'new view of fiscal policy' (Furman, 2016). The old view was that business cycle fluctuations could be addressed most efficiently and effectively by monetary policy, implemented by an independent central bank, leaving the government budget a non-discretionary role as automatic shock-absorber. Public revenues would fall naturally as the economy slowed and public spending would rise in line with the higher rate of unemployment, leaving the cyclically-adjusted deficit broadly constant. Discretionary fiscal actions suffered from the so-called TTT constraints; it was hard to implement them in a timely, targeted and temporary manner (van Riet (ed.), 2010).

Even when these TTT conditions were met, according to the Ricardian view, an increase in public debt to stimulate aggregate demand could be made ineffective when private agents started to save the budgetary stimulus in anticipation of the higher taxes necessary to service the higher debt. This risk was most pronounced for governments with overstretched public finances. Finally, there were doubts about the efficiency of resource allocation determined by the public sector; it could end up 'building roads to nowhere' and dampen average productivity growth. Governments should instead focus on improving the supply side of the economy by initiating structural reforms, removing regulatory impediments, maintaining low tax rates and undertaking productive public investments.

Faced with a demand-driven secular stagnation, as proclaimed by Summers (2014), the old view of fiscal policy gave way to a new view, in which governments are expected to return to a more active role (Ubide, 2016). To reduce the burden on monetary policy at the zero lower bound many central banks called upon their governments to give an additional fiscal stimulus in support of aggregate demand. A fiscal expansion under these circumstances could benefit from exceptionally large multiplier effects on private spending, as households and firms were liquidity-constrained and an offsetting monetary contraction was not foreseen until inflation had moved back up on a sustained basis.

Arguably, the new view was in line with the fiscal theory of the price level and followed the advice of Sims (2000, 2016) to suspend constraining budget rules, especially where these imposed counterproductive fiscal austerity in a time of low inflation. The public must understand, so he argues, that there are limits to what monetary policy can achieve on its own; when interest rates reach zero or below, a supportive fiscal expansion is needed aimed at generating higher inflation. The rising budget deficit had to be seen by the public as being financed in part by future inflation instead of future taxes or spending cuts.

Or in other words: at the zero lower bound of nominal interest rates, monetary dominance was ineffective in preventing a deflationary spiral and deliberate fiscal dominance had to take over temporarily in order to raise inflation expectations and cut real interest rates enough to kick-start the economy (see Yates, 2004). The question was whether after the sustained return of inflation to price stability the government could be relied upon to comply again with the budget rules and restore monetary dominance. After this experience, politicians might prefer continued fiscal activism to control output growth and inflation and force the central bank to give up its policy independence, especially when governments had accumulated a high debt and a return to higher real interest rates was unwelcome.

The coordination of monetary and fiscal policies on the subject of inflation as proposed by Sims (2000, 2016) could be especially complicated in the institutional set-up of EMU with a single monetary policy and 19 national fiscal policies. The Maastricht Treaty created the EMU with the ECB as the lonely institution in charge of a stable euro (Padoa-Schioppa, 2000). This also made the ECB the only game in town for euro area macroeconomic policy, placing a large burden on the conduct of monetary policy during the euro area crisis (Praet, 2017). National governments could only play a more active role in demand management when they had secured sustainable public finances, but they could not be forced to do so.

The situation in the federal context of the United States was, in practice, not much different. Bernanke (2015, p. 491) writes in his memoir of the financial crisis that other Washington policymakers than the Federal Reserve should have taken more responsibility for promoting economic growth. "The reality was that the Fed was the only game in town. It was up to us to do what we could, imperfect as our tools might be." After the fiscal stimulus of February 2009, Congress had shifted into austerity mode. Since further fiscal support after the Great Recession was lacking, the Fed responded to the fragile economic outlook in November 2010 with a second round of quantitative easing. The Congress was also regularly in a standoff with the administration over extending or raising the federal government's debt ceiling[6] and only gave in when spending cuts and tax increases were enacted. This fiscal headwind offset much of the effect of the monetary stimulus and was one reason for the Fed to postpone the tapering of its purchases of Treasury bonds until December 2013. Bernanke (2015, p.539) felt frustrated with the government's dysfunction, stating that "fiscal policymakers, far from helping the economy, appeared to be actively working to hinder it". Yet, "[m]onetary policy … cannot carry the entire burden".

With the aim to clarify the borderline between monetary and fiscal responsibilities, the treasury in some countries explicitly promised in advance to indemnify their central bank against potential capital losses on their growing portfolio of risk-prone securities. Elsewhere, central banks just tightened their risk management procedures and/or reduced their dividend payments so as to build up extra buffers against valuation losses from higher future interest rates. Avoiding negative equity was important for these central banks to preserve their financial independence and the perception of a strong monetary capacity.

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[6] The federal debt ceiling authorises the US government to borrow funds to cover its existing legal obligations. Over the past decades, the US Congress has frequently acted to permanently raise, temporarily extend, or revise the definition of the statutory debt limit. Otherwise the US Treasury would have to defer payment obligations which have already been approved in the budget or default on its debt service obligations.

4. The new era of central banking: the ECB perspective

4.1 The changing operational framework of monetary policy

The onset of the global financial crisis in 2007-08 also marked a rift in the operational framework of the ECB (see Bindseil, 2016). The pre-crisis consensus was that conventional monetary policy should use the short-term interest rate as the standard operational target. Since the introduction of the euro in 1999, the ECB conducted monetary policy by adjusting its three policy interest rates and using its regular refinancing operations to provide short-term liquidity against adequate collateral to the euro area banking sector. Through this standard operational framework it could directly steer the overnight interest rate and other money market rates, which was instrumental in influencing interest rate expectations and, hence, longer-term interest rates and other asset prices.

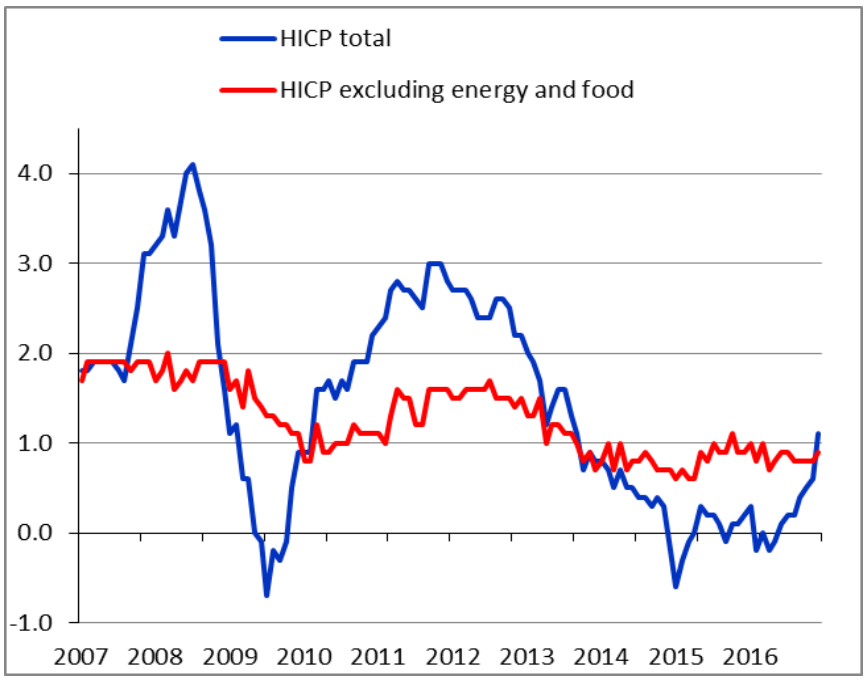
The appropriate monetary stance was in this respect determined by the outlook for price stability as derived from cross-checking economic and monetary developments according to its two-pillar monetary policy strategy. The transmission of the monetary stance through interest rates, the shape of the yield curve and financial conditions, enabled the ECB to influence the demand for money, have an impact on borrowing, saving and spending decisions, affect the degree of economic slack, stabilise longer-term inflation expectations and maintain price stability for the euro area (Figure 4.1).

As observed by van Riet (2017b), after the global financial crisis the ECB entered a new era for monetary policy-making during which it had to dig deep into its monetary policy toolkit, much deeper than before the eurozone crisis. The standard approach of providing monetary accommodation by lowering the ECB's policy interest rates was combined with various non-standard interventions to provide ample liquidity to the banking system and revive securities markets that had become dysfunctional. As a result, the ECB assumed its role as lender of last resort for a liquidity-constrained banking system and as market-maker of last resort in dysfunctional markets. A mix of fixed-rate tender operations with uncommon features and temporary outright purchases of debt securities in selected markets had the effect of changing the composition and increasing the size of the Eurosystem balance sheet in a passive and active mode, respectively.

As from mid-2012, the ECB also committed to undertaking conditional but unlimited Outright Monetary Transactions (OMTs) in impaired national sovereign bond markets if this was needed to secure an effective monetary transmission, which may be described as a

'contingent balance sheet policy' (ECB, 2015; Cour-Thimann and Winkler, 2016).[7] Starting in June 2013, the Governing Council moreover gave forward guidance on its monetary stance when the room for manoeuvre for further reducing its policy rates had become very limited, stating that it expected to keep the ECB's key rates at the prevailing level or lower for an extended period of time, a view that it has regularly reiterated since.

Figure 4.1 – Consumer price inflation in the euro area
(annual percentage changes)

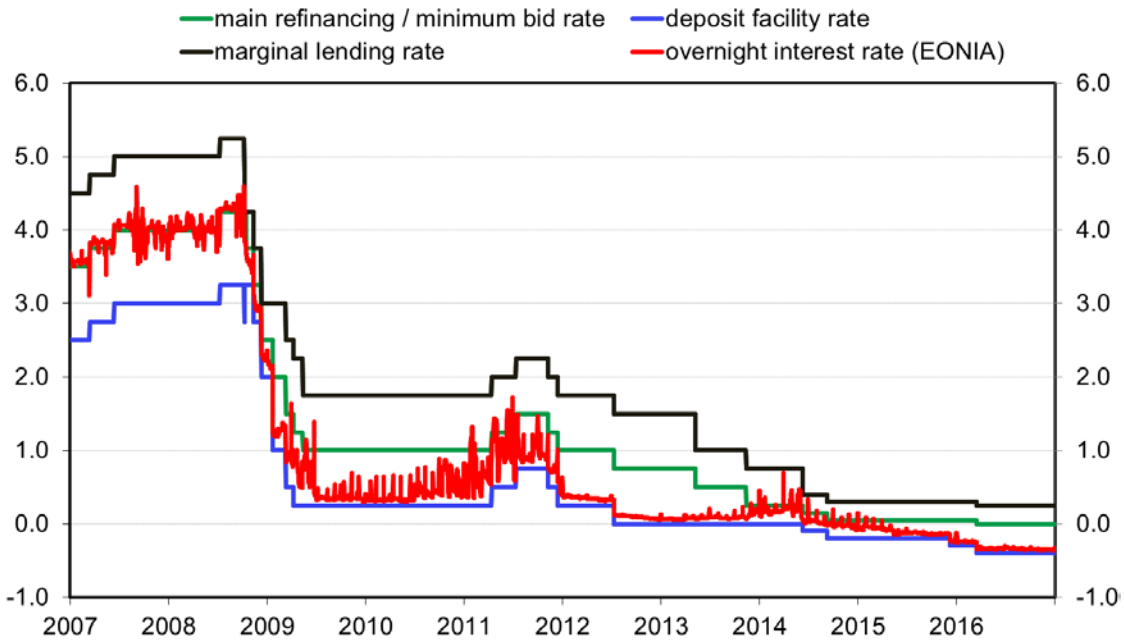


Sources: Eurostat and ECB calculations. Latest observation: December 2016.
Note: HICP = Harmonised Index of Consumer Prices.

Although these interventions were successful in stabilising the euro area economy, new monetary policy challenges arose in early 2014 when a steady fall in inflation put the objective of medium-term price stability at risk (Figure 4.1). From June 2014 to December 2016 the ECB took a wide range of non-standard actions to deliver the additional monetary stimulus that was deemed necessary to counter the risk of sustained low inflation becoming embedded in longer-term inflation expectations (van Riet, 2017c). The mutually supportive measures combined a negative deposit facility rate (Figure 4.2) with targeted longer-term refinancing operations and large-scale public and private sector asset purchases.

[7] Reis (2017) presents a model showing that an expansion of the central bank's balance sheet with long-term government bonds can also be useful to fight a fiscal crisis, like that experienced by the eurozone, employing two channels: first, quantitative easing increases the net supply of safe assets held by banks when (unsterilised) risk-free central bank reserves are exchanged for risky bonds; second, the monetary stimulus lowers the real value of public debt when the price level is allowed to increase relative to target.

Figure 4.2 – ECB key interest rates and the euro overnight interest rate
(daily data from January 2007 to December 2016, percentages per annum)

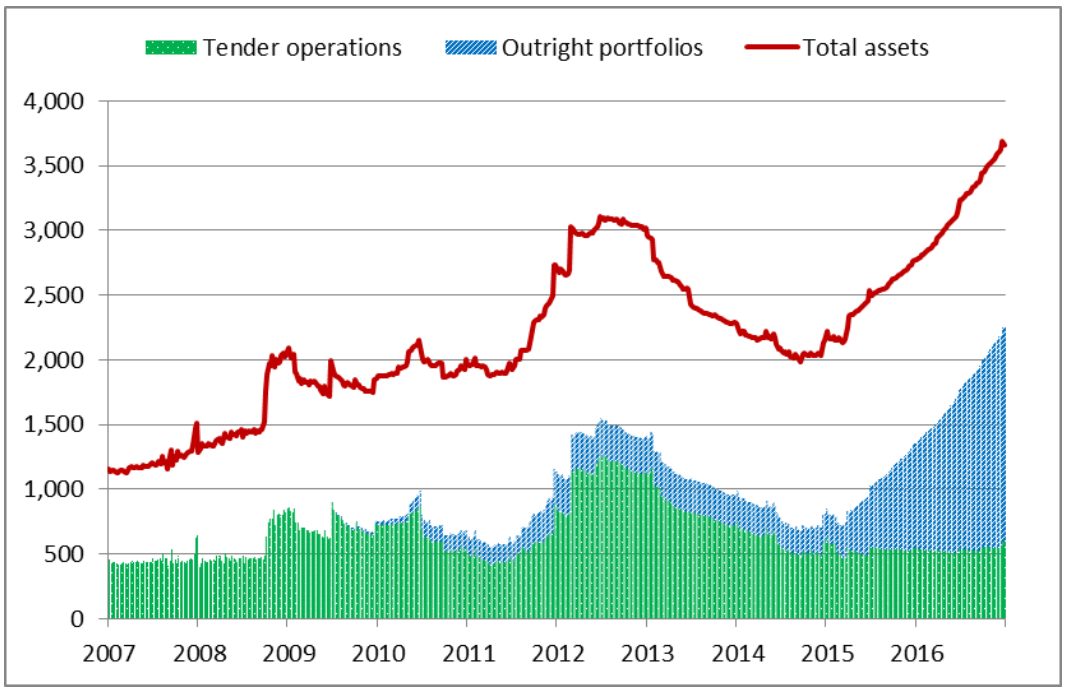


Sources: ECB, Thomson Reuters. Latest observation: 31 December 2016.
Note: Latest ECB key interest rates: MLR = 0.25%; MRO = 0.0%; DFR = -0.4%.

This comprehensive package of unconventional monetary policy measures, which steadily expanded the size of the central bank balance sheet (Figure 4.3), was successful in lowering borrowing costs. On the one hand, the Eurosystem's tender operations amounting to passive balance sheet interventions provided exceptional bank funding against a wider range of eligible collateral and sought to restore normal interbank financing conditions and to relax credit conditions for private borrowers. On the other hand, the Eurosystem's large-scale asset purchases against central bank reserves represented active balance sheet measures and gave a direct monetary stimulus with the aim of reducing yields in both public and private securities markets (see ECB, 2015).

Following these extraordinary monetary policy interventions, the sliding of inflation expectations to levels well below 2% observed in 2014 bottomed out in early 2015, mirroring a trend in headline consumer price inflation (Figure 4.1). Since then, headline inflation continued to fluctuate around zero before moving back up to 1.5 to 2.0% in early 2017, accompanied by a modest but steady economic recovery. The underlying trend of inflation however, measured as the headline rate excluding food and energy, stayed below 1%, which justified a continuation of the ECB's non-standard monetary easing policy.

Figure 4.3 – Eurosystem balance sheet: total assets and monetary policy assets
(weekly data from January 2007 to December 2016 in € billions)



Source: ECB. Latest observation: 26 December 2016.

Note: Tender operations include lending to euro area credit institutions due to monetary policy operations in euro against eligible collateral. Outright portfolios include public and private sector securities bought in the market for monetary policy purposes.

4.2 The single monetary policy stretched to the limit

The ECB (2004) has earlier clarified that it does not use the concept of a natural interest rate in the actual conduct of its monetary policy. The backdrop of a persistently low natural or neutral interest rate in the euro area as well as the effective lower bound on policy rates nevertheless compelled the ECB to take exceptional monetary measures, focused on expanding its balance sheet in order to generate the stimulus necessary to restore price stability, as its mandate required. Although it still had room for manoeuvre, the single monetary policy was increasingly stretched to the limit.

As it turned out, the low inflation environment was persistent and called for a prolonged monetary easing to achieve its intended effects. The challenge facing the ECB during this episode was also to monitor, manage and, where possible, to minimise potential negative side-effects of ultra-low interest rates (Draghi, 2015). As observed by van Riet (2017c), these concerns related in particular to the proper functioning of markets, the profitability of the banking sector, the solvency of pension funds and insurance companies, the income and

wealth position of households, the attitude towards risk in the private sector and the incentives for governments to postpone fiscal retrenchment and structural reforms.

Going forward, the ECB focused more on other easing measures than punitive negative interest rates that weighed on bank earnings and could weaken the effectiveness of monetary transmission. As the economy recovered, the average financial capacity of economic agents to bear the risks from higher debt exposures increased. Furthermore, the European micro and macroprudential authorities, including the ECB, intervened when and where necessary with preventive and corrective measures to address non-performing loans and counter excessive risk-taking behaviour. This reflected their mandate of securing the resilience of financial institutions and preserving financial stability.[8]

5. How could euro area governments support the ECB?

5.1 The specific legal setting of the eurozone

During the crisis years government debt-to-GDP ratios had increased dramatically. Many euro area countries embarked on fiscal consolidation in order to restore public debt sustainability and some pursued structural reforms to revive economic dynamism. Although necessary to strengthen confidence, in the short run these national macroeconomic policies contributed to the broad-based weakness of the euro area economy at a time when the private sector was also engaged in a protracted debt deleveraging. Governments left the burden of resolving the situation of low growth and low inflation squarely on the shoulders of the ECB. This attitude, of course, reflected the strict separation that was laid down in the Maastricht Treaty between the single monetary policy and the 19 national fiscal policies. The euro area governments are (only) expected to fulfil their respective national responsibilities for sustainable public finances and a competitive economy, which in the aggregate also supports price stability and a stable euro.

The specific legal setting of the eurozone with a focus on national risk reduction rather than risk sharing between member countries makes the ECB the only game in town to counter area-wide deflation in a widespread balance sheet recession (Praet, 2017). As there is no euro area treasury with its own fiscal capacity, the ECB missed a sovereign counterpart to assist with macroeconomic stabilisation, which could have shortened the period of ultra-

[8] For example, the ESRB (2016) issued warnings to eight Member States (among which five euro area countries) to be watchful of the growing risk of house price inflation.

low interest rates and mitigated the unintended side-effects. This institutional loneliness (Padoa Schioppa, 2000) contrasts with other monetary unions, like the United States, which are embedded in a political union (Draghi, 2014). Their supranational government has access to a central budget voted for by the union's parliament to implement economic policies, it is able to issue its own sovereign bonds, and it has the ultimate capacity to backstop the financial risks assumed on the central bank's sheet – and all these supranational fiscal commitments are backed by the taxpayers of the whole union.

An important policy question is therefore: how can euro area governments in the specific setting of EMU support the ECB in its task of maintaining price stability for the eurozone in an environment of sustained low interest rates? The argument advanced in this paper is that, without a fiscal union, they need to act together as the 'joint sovereign' behind the euro (see Hoeksma and Schoenmaker, 2011; van Riet, 2016a), in particular, to assist the Eurosystem with macroeconomic stabilisation, facilitate the use of non-standard balance sheet policies, and guarantee its solvency in view of the financial risks related to such quasi-fiscal measures.

As discussed in more detail below, three options come to mind for a more balanced euro area macroeconomic policy mix that fills the gap between desired savings and investments and/or raises the equilibrium real interest rate over time (Section 5.2). First, each country could contribute to a more positive aggregate fiscal stance according to its fiscal space while safeguarding fiscal sustainability. Second, they could undertake public measures with the aim to raise potential growth, such as productive public investments, lower marginal tax rates, market deregulation and other structural reforms. Third, it would be important to speed up balance sheet repair in the private sector so that banks will be able to reduce non-performing loans, credit-constrained households regain confidence to translate higher disposable income into extra spending, and firms use the opportunity of more attractive supply conditions to expand their production capacity.

Furthermore, euro area governments could take institutional measures in support of the single monetary policy. First, they could arrange explicit fiscal support for the financial risks assumed by their NCB and the ECB when these have to deploy their 'balance sheet of last resort' for monetary policy reasons (Section 5.3). Second, they could create the regulatory conditions for introducing a safe sovereign asset for the eurozone without debt mutualisation (Section 5.4).

5.2 A more balanced euro area economic policy mix

The European Commission, the IMF and the OECD have all issued recommendations to the euro area governments to organise a euro area aggregate fiscal stance that is aligned with the accommodating monetary stance of the ECB (see also Bańkowski and Ferdinandusse, 2017). The fiscal stance is commonly defined as the change in the structural primary balance, i.e. the impact of discretionary government measures on the budget balance corrected for the business cycle, interest payments and non-permanent measures. Since the room for budgetary manoeuvre differs from country to country, reference is often made to the concept of 'fiscal space', i.e. a country's budgetary capacity to contribute to an aggregate demand stimulus within the limits of sound public finances. Hence, fiscal space involves a trade-off between the ability to contribute to short-term macroeconomic stabilisation and the requirements for medium-term fiscal sustainability.[9] Countries with fiscal space could in principle add a discretionary budget expansion to the central bank's monetary stimulus so as to more effectively remove the slack in the euro area economy, while those without budgetary room for manoeuvre should first restore sustainable public finances in line with the requirements of the Stability and Growth Pact (SGP).

Looking at realisations, the euro area fiscal stance in terms of the structural primary balance turned slightly expansionary in 2015-16, and thus became more aligned with the orientation of monetary policy. However, the composition across countries was suboptimal; some contributed less to euro area stabilisation then was feasible, whereas others lacked the fiscal space and still postponed consolidation required by the rules of SGP.

For 2017, the draft budgetary plans of the member countries implied a broadly neutral aggregate euro area fiscal stance. The European Commission (2016) therefore called in November 2016 for a significantly more positive euro area fiscal stance, both in terms of a short-term fiscal stimulus to support macroeconomic stabilisation and high-quality public budgets that could help to resolve supply-side deficiencies. According to their analysis, to complement the monetary accommodation of the ECB and reduce the negative euro area output gap a coordinated euro area fiscal stimulus of between 0.3% and 0.8% was warranted. The Commission proposal was therefore to deliver a collective fiscal expansion of 0.5% of GDP in 2017 (about EUR 50 bn.), with the fiscal efforts differentiated across countries according their fiscal space and taking account of favourable spill-over effects.

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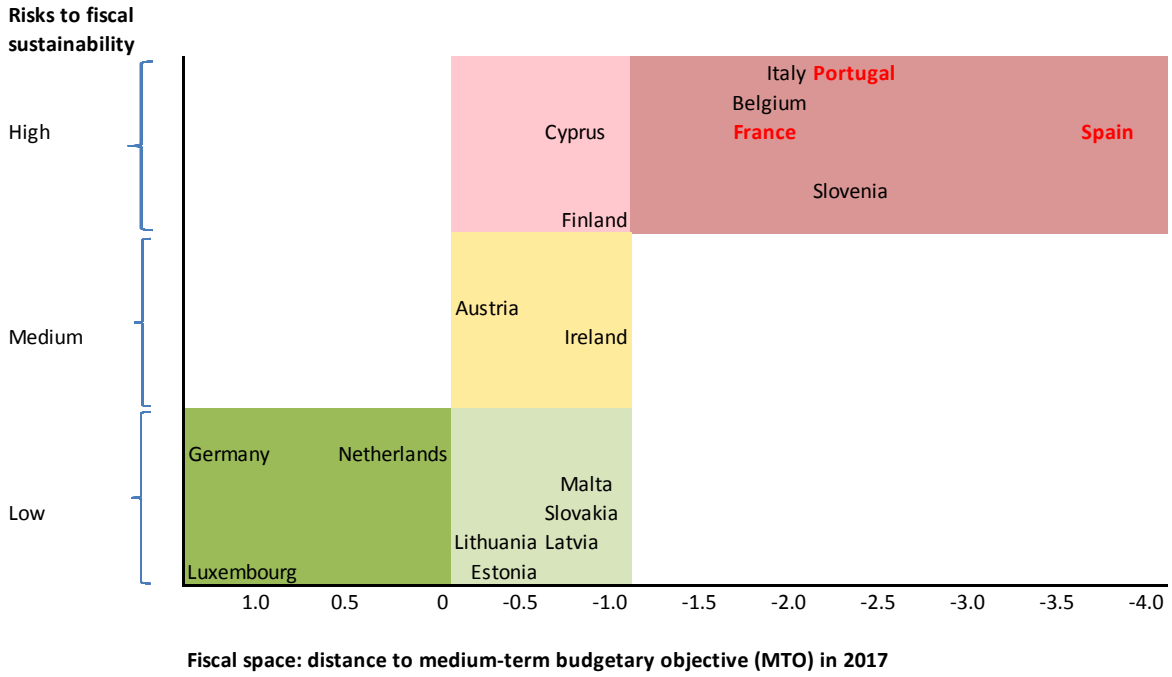
[9] See ECB (2017a) for a discussion of different approaches for estimating a country's fiscal space.

Following the European Commission's assessment, only Germany, the Netherlands and Luxembourg have fiscal space and could arrange a fiscal expansion; other euro area countries are subject to the Excessive Deficit Procedure of the SGP and/or face various risks to their fiscal sustainability position (see Figure 5.1).[10] The Eurogroup instead concluded that the broadly neutral aggregate euro area fiscal stance that emerged from the national budgetary plans for 2017 stroke an "appropriate balance" between the consolidation needs and the fiscal space in the different member countries. Those countries that over-achieved their medium-term budgetary objectives and stepped up the pace of government debt reduction of course acted in their own interests and could only be expected to make a voluntary contribution to a joint fiscal stimulus. This experience suggests that a euro area fiscal capacity would have been more conducive to achieving aggregate fiscal policy goals (see also Bańkowski and Ferdinandusse, 2017).

Figure 5.1 – Fiscal space versus risks to fiscal sustainability of euro area countries

(countries with fiscal space are shown in dark green; those in other colours have no fiscal space, but various degrees of deficit/debt sustainability issues; countries in red are subject to the Excessive Deficit Procedure, the chart excludes Greece)



Source: ECB calculations based on the European Commission's Debt Sustainability Monitor 2016 and Economic Forecast Winter 2017, as reported in ECB (2017a).

Note: Risks to fiscal sustainability according to overall assessment by the European Commission of medium-term risks, taking account of the level of the government debt-to-GDP ratio relative to the 60% reference value for the position of each country.

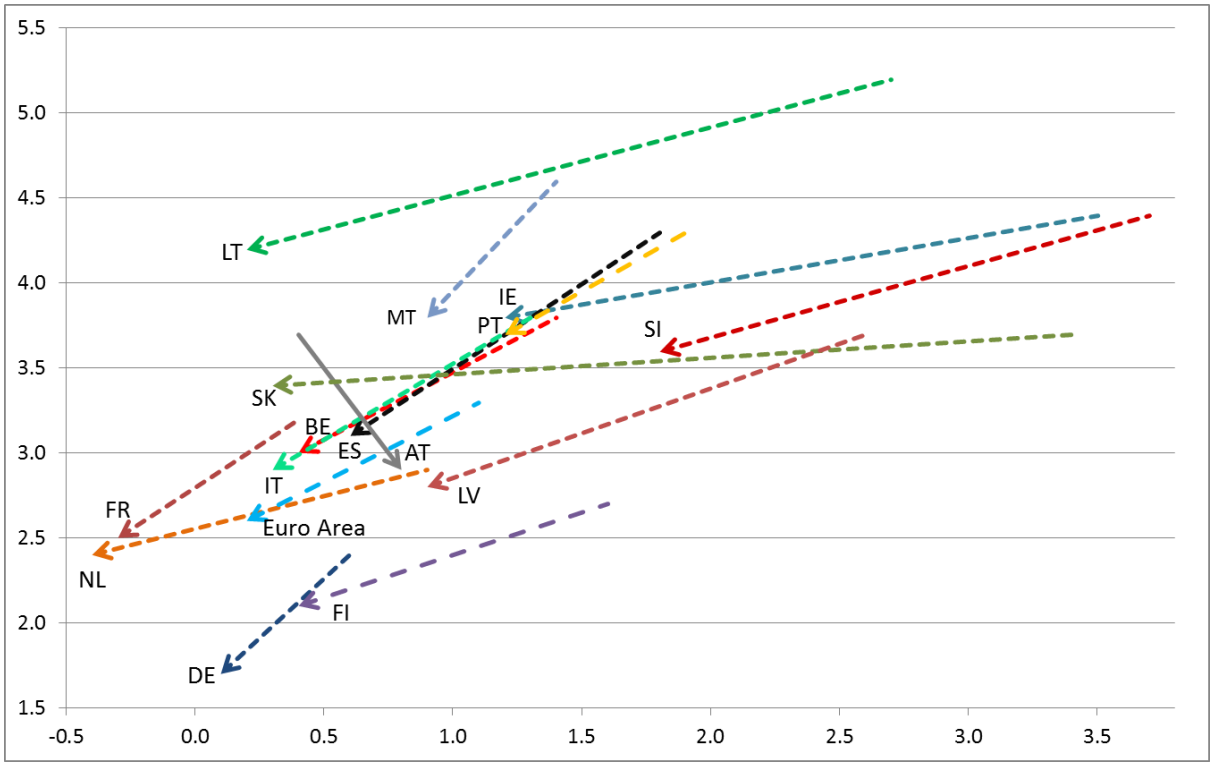
[10] See Bouabdallah et al. (2017) for the building blocks of the ECB's public debt sustainability analysis.

The priority that several euro area countries give to public debt reduction rather than a fiscal expansion in the common interest may be understood from three perspectives.

First, the substantial monetary accommodation engineered by the ECB is rightly treated as an exceptional budgetary windfall. The lower interest payments on government debt (as shown in Figure 5.2) and the higher nominal GDP growth rates spurred by monetary easing have helped to reduce the national budget deficits. Moreover, the monetary efforts to prevent deflation avoided an undue rise in the real value of public debt. Monetary policy over the period 2014-16 has therefore significantly alleviated the trade-off between macroeconomic stabilisation and fiscal sustainability.

Figure 5.2 – Average yield on government debt securities of euro area governments

(x-axis: yield on debt securities issued over the last 12 months in Dec. 2016 compared to May 2014, y-axis: yield on stock of debt securities in Dec. 2016 compared to May 2014; percentages per annum)



Source: ECB. Latest observation: December 2016.

Note: Euro area government debt securities are non-consolidated. National data exclude Greece, Cyprus, Estonia and Luxembourg due to data availability constraints. The deviating pattern for Austria may be related to the downgrade of its credit rating from AAA to AA and its issuance of two relatively expensive bonds with an unusually long maturity of 30 years and 70 years.

However, at some point, the ECB will reverse its monetary course again and leave sovereign bond yields to be fully determined by market forces, which may pose a renewed challenge for the semi-safe sovereigns of the euro area. Most governments are therefore

well-advised to use the window of opportunity of ultra-low interest rates and the economic recovery for implementing well-designed fiscal, financial and structural policies that make their economies more resilient to future shocks and strengthen public and private sector buffers to absorb them.

Second, some of the concerns of the old view of fiscal policy of course still apply. While several studies find that the fiscal multiplier with regard to output stabilisation is higher when interest rates are very low, there remain valid doubts whether a discretionary fiscal stimulus can be organised in a timely manner, targeted at a productive allocation of resources and restricted to be temporary (TTT criteria).

By way of alternative, governments could also facilitate the task of the ECB by raising the quality of public finances (focusing more on public investment and tax efficiency) and facilitating public-private financing of EU investment projects. In addition, they could initiate more decisive structural reforms in labour, product and housing markets to enhance flexibility, competitiveness and the business environment and strengthen the supply-side of the economy. These structural measures are vital to reverse the euro area's declining trend of productivity growth, raise the longer-term return on capital and thereby increase the equilibrium real interest rate. Such structural policy actions give more room for standard ECB interest rate policy above the zero lower bound, improve the operation of the monetary transmission mechanism and, in general, enhance the efficacy of monetary policy (van Riet, 2006).

Giving due attention to the aspect of allocative efficiency is all the more important when the historically low cost of funding also makes uneconomical investments feasible. Low interest rates make it easier and more attractive for banks to forebear on their non-performing loans. Although progress has been made, some member countries would in this respect benefit from faster resolution regimes for corporate and private insolvencies. The ample availability of cheap money also risks that countries (again) 'kick the can down the road' in tackling their structural economic problems and harmful economic and financial imbalances. This adverse incentive is apparent in the declining reform efforts observed during 2014-16, the limited progress in implementing the EU Council's country-specific recommendations and the reservations of the European Commission in activating the tools of the Macroeconomic Imbalance Procedure (MIP) (see ECB 2017b). Hence, some countries may better use their fiscal space for smoothing the implementation costs of structural reforms and debt deleveraging than for generating domestic demand.

A third reason for euro area governments to give priority to public debt reduction is the wish to reclaim or preserve the status of their bonds as a relatively safe asset, taking due account of calculated risks to debt sustainability or estimates of the debt-to-GDP ratio beyond which the ability to service the debt may be questioned (see ECB, 2017a). This caution towards a fiscal expansion is understandable because in the context of EMU, member countries have relinquished their monetary sovereignty and face the scrutiny of capital markets for their debt financing operations (van Riet, 2017a). A fiscal expansion financed with debt securities that market participants only perceive as semi-safe is more likely to trigger concerns about growing future tax liabilities. This uncertainty may lead economic agents to increase their precautionary savings, which would annul part of the envisaged demand stimulus.

Access to a safe sovereign asset is also of great interest for domestic pension funds and insurance companies that need to match their long-term liabilities with secure claims of longer duration. Moreover, the national sovereign-bank feedback loops that turned vicious during the crisis have not been broken and could emerge again in turbulent times and undermine financial stability in the country concerned as well as in euro area as a whole. Although the steps towards a European Banking Union have helped to mitigate this concern, the ongoing weakness of the banking sector in some countries still appears to impose fiscal policy constraints. The continued country-specific credit risks associated with political upheavals, high public debt and bank failures caution against (further) increasing the domestic exposure of banks to a semi-safe sovereign.

Altogether, appropriately targeted national contributions to the euro area economic policy mix could support the ECB in meeting its price stability objective and reduce the need for advancing non-standard monetary policy in unknown territory. Although the institutional architecture of EMU does not foresee explicit monetary-fiscal-structural policy coordination, the national governments have a shared responsibility to support the ECB's fight against low inflation and mitigate any adverse side-effects of ultra-low interest rates. Going beyond a TTT-compliant fiscal stimulus by countries with fiscal space, these policies include reducing structural budget deficits to secure debt sustainability, making government budgets more growth-enhancing, tackling non-performing bank loans and implementing structural reforms.

To better align the national budgetary plans, structural reform intentions and debt deleveraging operations with euro area requirements, Eijffinger (2016) proposes the

establishment of an informal euro area presidium within the Eurogroup – comprising the French and German finance ministers, the European Commission president and vice-president responsible for the euro and the ECB president and vice-president. This new informal body could in future coordinate the fiscal, financial and structural policies of the member countries and make the aggregate economic policy mix consistent with the single monetary policy stance freely determined by the ECB, while ensuring continued compliance with the rules of the SGP and the MIP. Additional provisions are needed to ensure consultation with the social partners and democratic legitimation vis-à-vis the European Parliament.

Such a Eurogroup presidium would go far beyond the current macroeconomic dialogue established by the Treaty of Amsterdam and would pave the way for a future euro area finance minister. As proposed by Trichet (2011) and the Five Presidents (Juncker, 2015), the central ministry of finance could be given the responsibility to align national fiscal policies in the eurozone's interest, carry out surveillance of national economic policies and, when necessary in exceptional cases, enforce the prevailing rules of behaviour upon member countries. While it should maintain a balanced central budget in structural terms, it could activate a modest fiscal capacity of its own to assist national structural reforms and offer a reinsurance of national unemployment schemes.

5.3 A formal fiscal back-up for the Eurosystem

The specific setting of the eurozone also has implications for the financial relationship between the Eurosystem and the 19 national governments. The monetary income of the euro area NCBs and the net profits and losses of the ECB are in principle shared at the Eurosystem level, before being distributed to the NCBs in accordance with their paid-up share in the capital key of the ECB and subsequently transferred by them to their own euro area governments and any private shareholders in accordance with national provisions.[11] This two-step allocation of monetary income and net profits/losses, in turn, might affect the perceived room for monetary policy manoeuvre using non-standard balance sheet policies.

Henning (2015, p.18) suggests that this equal risk-sharing framework made the ECB more reluctant to act as a crisis fighter and to initiate quantitative easing operations in sovereign bond markets, anticipating that the attendant mutualisation of risks might fuel moral hazard

[11] The Nederlandsche Bank received a guarantee from the Dutch government in 2012 to cover the extra crisis-related risk exposures. This insurance could be activated in the years 2013-17 up to a maximum amount of EUR 5.7 bn.

and take individual governments 'off the hook' for fiscal and structural reforms. At the same time, so he argues, euro area countries attempted to exploit the crisis for extracting monetary accommodation from the ECB. This two-way strategic interaction prevented, in his view, a quick resolution of the crisis and delayed forceful monetary interventions that entailed the build-up of sovereign risk exposures on the Eurosystem's balance sheet. Henning (2015) states that instead an *ex ante* bargain could have been struck with euro area governments indemnifying their own NCB as well as the ECB against the potential losses on large-scale public sector bond purchases in order to overcome this stalemate. For example, the Nederlandsche Bank received a guarantee from the Dutch government in 2012 to cover the extra crisis-related risk exposures. This insurance could be activated in the years 2013-17 up to a maximum of EUR 5.7 bn.[12]

Corsetti et al. (2016a) make a similar point, stressing the risk of large capital losses for the Eurosystem and the potential need for a recapitalisation by the euro area governments. The prevailing *ex ante* uncertainty about the availability of fiscal support to its balance sheet might make the Eurosystem overly cautious with unconventional monetary policy measures, notably when it wishes to activate large-scale balance sheet operations, commit to 'last resort' lending, and relax the collateral eligibility criteria. Corsetti et al. (2016a) fear that such a bias towards a too tight monetary policy, especially at the zero lower bound, would lead to an under-reaction to a financial crisis, more sluggish economic growth and too low inflation.

The Governing Council of the ECB decided to double its subscribed capital by EUR 5 bn. in 2010, a possibility that the EU Council had approved already in the year 2000. The euro area NCBs paid their additional capital contributions in three instalments between 2010 and 2012. An automatic fiscal back-up arrangement for the Eurosystem has never been formalised. A further recapitalisation of the monetary authority by the national fiscal authorities, if ever necessary, is complicated to agree *ex post* in a setting whereby the European Parliament and the European Commission must be consulted and 19 national governments all have to give their blessing. The ECB's quantitative easing operations in government bonds therefore necessitated a careful design, both to limit risk exposure and to counter monetary financing concerns. The public sector purchase programme (PSPP) that is

[12] This fiscal back-up may be compared with the case of the Bank of England which can use an Asset Purchase Facility for monetary policy purposes. Such asset purchases are carried out by a subsidiary of the Bank of England, the Asset Purchase Facility Fund. The UK government has provided an indemnity to cover any losses arising from this facility.

being implemented in secondary markets since March 2015 covers debt instruments issued by euro area central, regional and local governments, as well as by recognised public sector agencies and European supranational institutions located in the euro area. The allocation of the monthly purchases between euro area countries is guided by the ECB's capital key.[13]

Eligibility is restricted to marketable euro-denominated investment-grade nominal and inflation-linked bonds with a remaining maturity of between 2 and 30 years and with yields at the time of purchase at least standing above the ECB's deposit facility rate. These criteria were relaxed somewhat in December 2016, when eligibility was extended to include the maturity range of 1 to 2 years. In addition, it was allowed, if necessary, to buy public sector bonds yielding below the deposit rate, which implies accepting a small cost. The total amount of public sector bond purchases is capped at 25% of a given issue (which was raised to 33% as from November 2015)[14] and an aggregate holding limit of 33% per issuer.[15] These ceilings serve to preserve market discipline and safeguard *pari passu* (equal) treatment with respect to private creditors. Moreover, the Eurosystem observes a black-out period (during which its secondary-market purchases are suspended, also for securities with neighbouring maturities) around the dates when new public sector bonds are issued in the primary market.[16]

The PSPP is furthermore subject to a special regime for sharing possible losses (Figure 5.3). Only 20% of any (unforeseen) losses on the portfolio of public sector securities will be fully shared within the Eurosystem. This part covers the ECB's own acquisitions (first accounting for 8% of the total, since April 2016 for 10%), as well as the NCBs' purchases of securities issued by European supranational institutions (initially covering 12% of the total, but 10% since April 2016). Hence, potential losses on the remaining 80% of the

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[13] Government bonds of euro area countries receiving EU/IMF financial assistance (notably Cyprus and Greece), which did not meet the minimum credit quality threshold, could benefit from a waiver, provided that their adjustment programme could be assessed as being on track. After mid-2015, the Eurosystem was able to add government bonds issued by Cyprus to the PSPP.

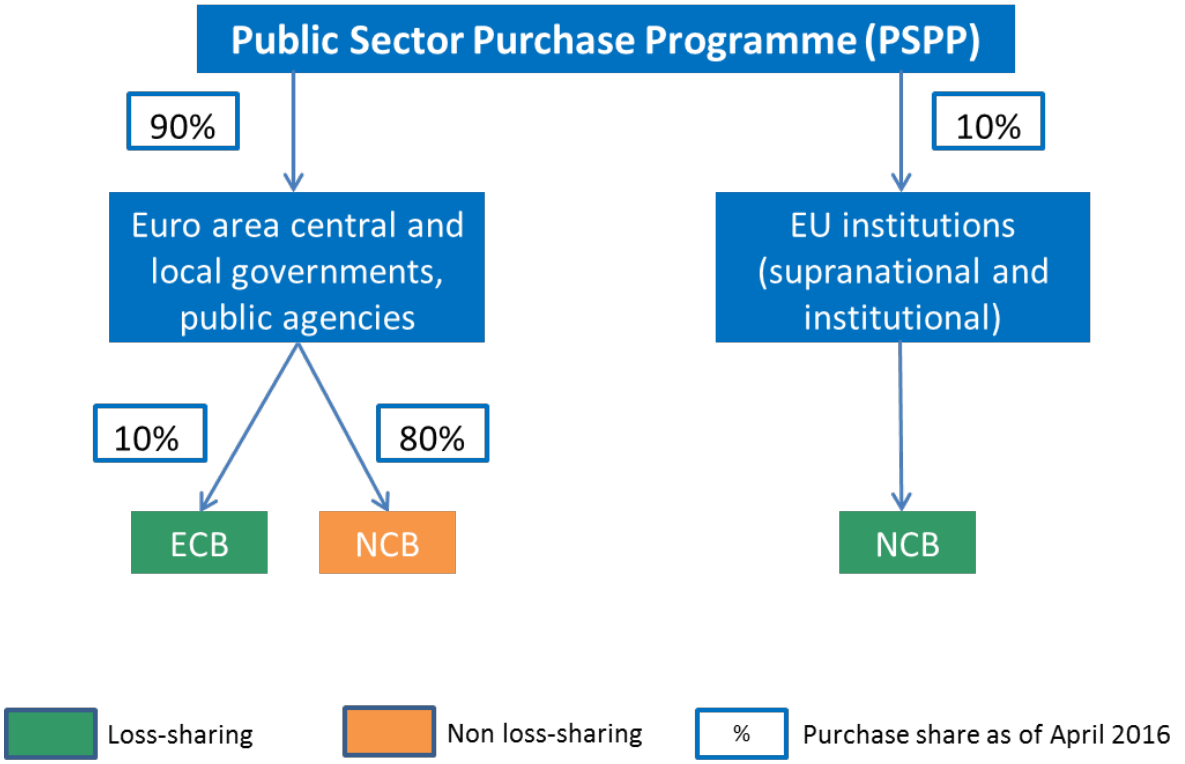
[14] The issue limit refers to the maximum share of a single PSPP-eligible security that the Eurosystem was prepared to hold so as to avoid having a blocking minority in case collective action clauses in a bond contract would be activated in an orderly debt restructuring. The original issue limit of 25% still applied for public debt securities containing a collective action clause that differs from the model used by euro area governments as of January 2013, unless it was confirmed that holding 33% would not lead the Eurosystem to have a blocking minority. For European supranational institutions the issue limit was further raised to 50% in April 2016.

[15] The issuer limit refers to the maximum share of a single issuer's outstanding securities that the Eurosystem was prepared to hold so as to safeguard market functioning and price formation as well as to mitigate the risk of the Eurosystem becoming a dominant creditor of euro area governments. For European supranational institutions the issuer limit was raised to 50% in April 2016.

[16] Given the large scale of the PSPP and its market impact the ECB as well as some NCBs make the securities they have purchased available to interested counterparties for securities lending, also accepting cash as collateral, in order to support bond and repo market liquidity and collateral availability.

portfolio are for the sole account of the NCBs contributing with purchases of public sector bonds of their own country, in proportion to their share in the ECB's capital key. This part of the portfolio comprises domestic bonds issued by the respective central, regional and local governments and recognised public sector agencies.

Figure 5.3 – The Public Sector Purchase Programme: Loss-sharing regime between European Central Bank (ECB) and NCBs (NCBs)



This specific loss-sharing regime was felt to be appropriate for two reasons (Praet, 2015). First, the large-scale public sector asset purchases started at a time when public debt-to-GDP ratios were (very) high, making it necessary to contain the associated moral hazard on the part of sovereigns if they could impose a substantial part of the costs of a potential debt restructuring on all euro area taxpayers rather than their own. This prevented introducing a fiscal transfer union by the back door. A second motivation for this specific agreement is to preserve monetary dominance vis-à-vis the 19 euro area governments. Given the Maastricht Treaty arrangements, the single monetary policy coexisted with 19 national fiscal policies without a federal government and therefore sovereign credit risks should not be mutualised. As a consequence, NCBs are buying the public sector bonds issued by their own country without sharing the related risk of losses at the ECB level. Only in a genuine EMU, with a

fully-fledged fiscal union, a full sharing of the common central bank's profits as well as its losses among the shareholders would be the most natural approach.

A harmonised Eurosystem accounting framework ensures that the ECB and the NCBs all apply prudent principles for the recognition of monetary income and use part of it to build adequate financial buffers against the various risk exposures in order to protect their financial strength. By contrast, the rules for retaining earnings and distributing profits follow national conventions (Bunea et al., 2016). For example, valuation losses on the bond portfolio due to rising interest rates in the future could be absorbed by general reserve funds when they exceed the revaluation accounts. Several NCBs are therefore using the interest payments on their sovereign bond portfolio to build up extra reserves to cater for future valuation losses and therefore pay a smaller dividend to their government and any private shareholders. A few other NCBs instead broadly maintain their seigniorage payments without making special precautions, implicitly relying on contingent national fiscal support.

As stated by the ECB (2016, p.25), "financial independence … implies that an NCB should always be sufficiently capitalised. In particular, any situation should be avoided whereby for a prolonged period of time an NCB's net equity is below the level of its statutory capital or is even negative, including where losses beyond the level of capital and the reserves are carried over. Any such situation may negatively impact on the NCB's ability to perform its ESCB-related tasks but also its national tasks. Moreover, such a situation may affect the credibility of the Eurosystem's monetary policy. Therefore, the event of an NCB's net equity becoming less than its statutory capital or even negative would require that the respective Member State provides the NCB with an appropriate amount of capital at least up to the level of the statutory capital within a reasonable period of time".

NCBs that face major credit impairments related to a potential own sovereign default and the obligation to compensate the Eurosystem for the corresponding central bank reserves have to carry the losses forward for the part that cannot be covered by their risk provisions and capital base. This could temporarily lead to a negative equity position until the day when it can be fully offset against future retained profits.[17] This accounting solution has major political advantages (see also Durré, 2016). The country concerned may face serious funding constraints in replenishing the capital base quickly in a situation of fiscal stress.

[17] No negative equity would have to be reported when the losses are recorded as claims against the national government, but this would imply a form of monetary financing.

The possibility to carry the losses forward avoids a politically contentious transfer of scarce financial resources to the NCB or of having to draw on conditional EU/IMF support facilities for a direct or indirect recapitalisation.

Overall, even with effective risk controls in place, a negative monetary income may occur more frequently, in particular in the context of the Eurosystem actively using its balance sheet as a 'last resort' for monetary policy purposes. Considerable losses might also materialise in the context of large-scale refinancing operations or emergency lending assistance to liquidity-constrained but solvent banks, although the required collateral should mitigate this risk (Linzert and Smets, 2015). Technically speaking, the Eurosystem could still carry out its normal monetary policy operations, even if its reserves and capital base were exhausted, because it could rebuild its financial buffers with the seigniorage revenues accruing over time before resuming dividend payments. Still, a prolonged balance sheet constraint of a large size could fuel doubts over its monetary capabilities and may lead the public to question the value of the Eurosystem's liabilities (see Hall and Reis, 2015). Continuing with negative equity could therefore undermine the credibility of the single monetary policy and eventually its price stability objective (cf. Del Negro and Sims, 2015). Moreover, it could raise political and communication concerns.[18]

Confidence in the Eurosystem could therefore benefit from an unconditional political commitment from all participating countries to respect not only the monetary authority's statutory independence but also to maintain its financial strength for the credible pursuit of its mandate. This special feature of EMU governance has gained special importance in the age of new central banking with the ECB using unconventional tools to achieve its price stability objective. The related EMU-specific coordination challenge can in principle be overcome with democratically legitimised national fiscal guarantees against large monetary losses (Illing and König, 2014). The 19 member countries could provide an explicit fiscal protection, committing when necessary to recapitalise their NCB and the ECB. This fiscal support in the background underpins public trust in the monetary capacity of the Eurosystem and clarifies that euro area governments carry ultimate responsibility for the balance sheet risks that it assumes on behalf of taxpayers. Once a fiscal union has been established, the national fiscal guarantees can be taken over by the euro area treasury.

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[18] The US Federal Reserve has to possibility to record a negative liability in a deferred account and then balance it using retained earnings accruing in the future. Yet, the Fed would face "a political and public relations problem" if it had to suspend dividend payments to the US Treasury while it continued making interest payment to banks – many of them foreign-owned – for their reserve account holdings (Bernanke, 2015, p.542).

5.4 A safe sovereign asset for the eurozone

Even in the absence of further fiscal integration, one of the building blocks still necessary to strengthen the architecture of EMU is a single safe sovereign asset that functions as the cornerstone of a stable and a truly single euro area financial system (for a discussion see van Riet, 2017a). A low-risk euro area sovereign bond would enhance financial stability in the euro area as a whole because it meets the financial sector's rising demand for high-quality and liquid assets needed to comply with the EU's prudential capital and liquidity requirements. Furthermore, it is an effective tool to break the 'diabolic feedback loop' between national governments being exposed to systemic banks in their jurisdiction and weak banks in turn being dependent on rescues by their own sovereign.[19]

As it promotes asset diversification and enhances financial integration it could also support an even transmission of the single monetary policy across the eurozone. A low-risk euro area sovereign instrument would further be an attractive form of collateral for secured interbank lending and may be pledged by banks drawing on the ECB's refinancing facilities. Such a relatively safe instrument would also be very suitable as the preferred monetary policy tool for the Eurosystem to undertake large-scale open market operations in government bonds whereby the (by construction low) risk of losses could simply be shared evenly across NCBs according to the ECB's capital key.

Historically, before the start of EMU, national sovereign bonds performed the role of safe benchmark instrument for their domestic economy. With the start of EMU, however, the position of national governments has changed fundamentally. Participating Member States relinquished their monetary sovereignty and were thus no longer able to issue bonds in a currency under their own monetary control. This restriction of their sovereign powers made their new position comparable to that of subsidiary governments like the American States that can only issue semi-safe debt and depend on federal fiscal stabilisers to enhance their safety – supranational elements which in the EMU context are missing.

The pre-crisis convergence of sovereign bond yields to the low level of Germany, considered to be the benchmark state, reflected the monetary regime change implied by euro participation and the integration of capital markets. A continued observance of the economic convergence criteria after joining EMU, extended with broad-based structural

[19] The European Systemic Risk Board (ESRB) is currently investigating the feasibility of creating sovereign bond-backed securities consisting of both senior and junior claims on a diversified portfolio of national sovereign bonds.

reforms, an effective harmonisation of national financial regulation and strict financial supervision, would have been conducive towards stronger country fundamentals and a greater resilience to shocks. This would have broadened the group of ‘safe haven’ nations and ensured sustainable financial market integration. This risk reduction could have been the stepping stone for agreeing to a wider risk sharing and ultimately a fiscal union.

As long as national economies showed a strong growth performance, investors were happy to treat all euro area sovereigns as if they were safe creditors and to search for the highest yield among them. This behaviour was consistent with the zero-risk label assigned to government bonds in EU prudential legislation (van Riet, 2016b). However, the global financial crisis exposed the build-up of fragilities inside EMU and made investors flee to ‘safe haven’ countries, leading to a fragmentation of the euro area capital market along the line of national creditworthiness. The group of member countries in which markets placed a high degree of trust in a time of crisis turned out to be small, with Germany at the top. Most other countries find themselves in the middle of the EMU universe of sovereign bonds in terms of their value and safety (see Figure 5.4). Their high credit ratings as issuers of semi-safe bonds are fragile and only maintained in tranquil times. A debt run upon the arrival of negative news could easily push them towards or across the default boundary, as happened for Greece and Cyprus.

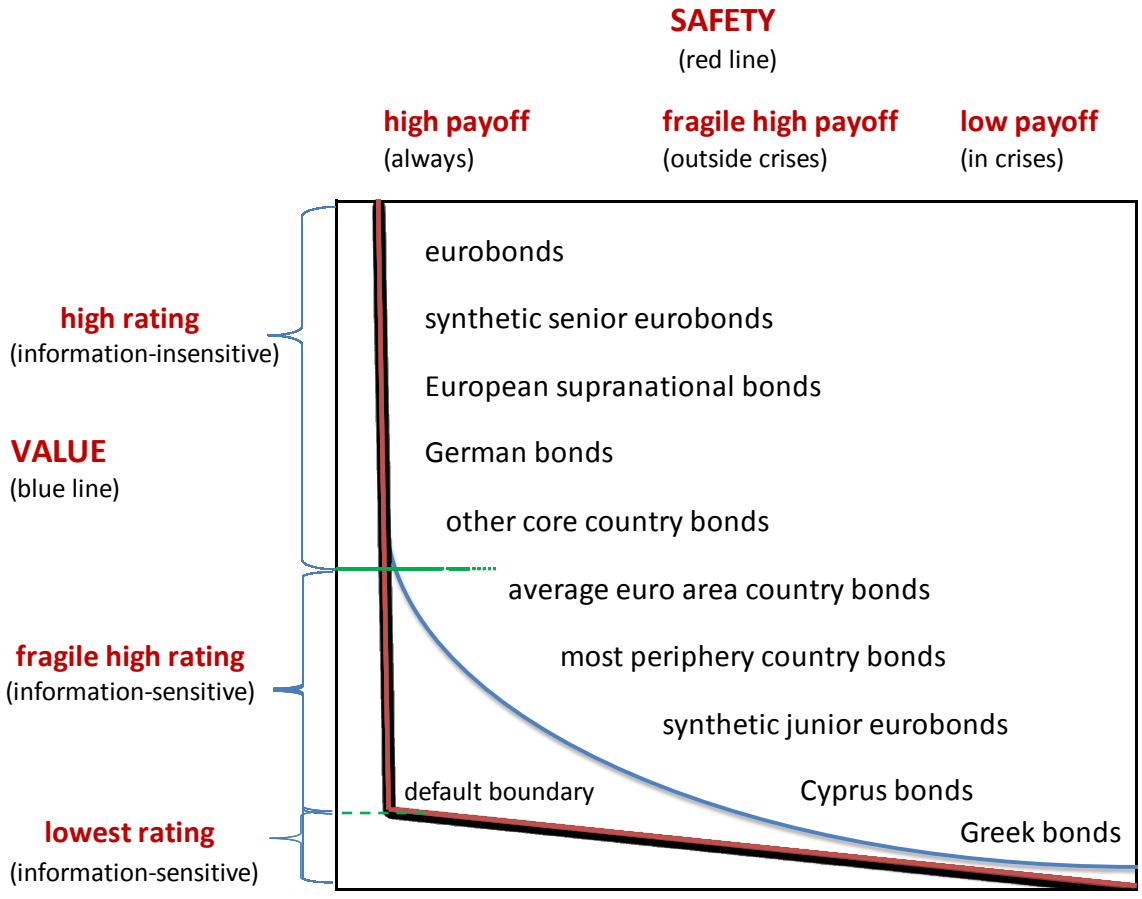
The euro area crisis showed the operation of the ‘safety trilemma’, i.e. a safe asset concentrated in the German bund or any other country is incompatible with having both free capital mobility and a stable monetary union (van Riet, 2017a). A single safe sovereign asset that functions as the cornerstone of the euro area financial system, mitigates the risk of destabilising intra-area capital flows, and facilitates an even cross-border monetary transmission. As the ‘joint sovereign’ behind the euro, European leaders have a shared responsibility for safeguarding the longer-term stability of EMU. Assuming no further steps towards a fiscal union, they are well-advised to implement a politically acceptable alternative for the issuance of eurobonds, that is, without engaging in debt mutualisation.

One attractive solution to the safety trilemma is that euro area leaders charge for example the ESM (possibly assisted by the ECB as its fiscal agent) with the task of pooling national sovereign bonds and supplying both a senior and a junior tranche of each synthetic eurobond built on this diversified portfolio; or else create the legal conditions for a similar private sector initiative (see Brunnermeier et al., 2016; Corsetti et al., 2016b). Since the senior tranche is protected from default and the junior tranche carries the credit risks, the

synthetic eurobonds would internalise a substantial part of the destabilising intra-area capital flows and generate a safer EMU financial system, especially when the banking industry would invest above all in the safe senior tranches. The risk reduction achieved by banks holding a safe sovereign asset for the eurozone could also make it easier to complete the European Banking Union with an explicit risk sharing through a common deposit insurance mechanism and a joint fiscal backstop for failing banks.

Alongside, member countries could issue GDP-linked bonds as an additional market-based safety device to protect them against a debt explosion in a deep recession (van Riet, 2017a). The enhanced overall stability of national sovereign bond markets would reduce the burden on the ECB of having to step in and stabilise the euro after a big negative shock. The risk of a renewed financial fragmentation along national lines of credit risk and/or an adverse sovereign-bank feedback loop is much smaller and, hence, an even transmission of monetary policy across the eurozone is better ensured. Moreover, it eases the pressure on the ESM to serve as a fiscal backstop for euro area countries and/or their banks.

Figure 5.4 - The EMU universe of sovereign bonds by safety and value



Source: van Riet (2017a).

The steady ESM demand for national sovereign bonds to build up and maintain the portfolio underlying the synthetic eurobonds should be expected to ease capital market access for the member countries. To contain moral hazard, the preferential treatment of national government bonds in EU prudential legislation (see van Riet, 2016b) could be gradually limited and carefully phased out, since the senior and junior component of the synthetic eurobonds would in part take their place on bank and non-bank balance sheets.

Another matter is whether such a regulatory privilege should be kept for the safe tranches of synthetic eurobonds in order to maintain a level playing field in international capital markets where the ESM as the issuing body would compete for funds with non-euro area governments. Maintaining this sovereign funding privilege for the senior tranche of synthetic eurobonds would recognise its characteristics as a safe asset that unifies the euro area financial system.

Finally, to make it interesting for investors to include these instruments as a store of value in their portfolios the EU regulatory provision that demands extra capital charges against structured products would have to be amended to recognise that synthetic eurobonds derive from underlying claims on a semi-safe public sector instead of risky private entities.

6. Concluding remarks

The main task of the ECB from 2014 to 2016 was to design a monetary stimulus that was strong enough to reach market segments that were deprived of credit and thereby to prevent a too prolonged period of low inflation taking hold. The ECB responded with a shifting combination of standard and non-standard monetary policy interventions, i.e. it reduced its policy rates to levels around zero, offered targeted long-term refinancing at very attractive conditions to banks, and actively engineered a quantitative expansion of the Eurosystem balance sheet, while giving markets forward guidance on its intended monetary stance. These exceptional monetary easing measures were instrumental in preventing deflationary forces from taking hold and generating a steady albeit modest recovery of output growth.

Being the only game in town, the ECB’s monetary policy was increasingly stretched to the limit. The extensive monetary accommodation aimed to overcome the zero lower bound for interest rates in a demand-driven secular stagnation marked by a very low or negative equilibrium real interest rate. The protracted period of credit and quantitative easing sought to engineer a sufficient relaxation of financing conditions in all asset markets. Although successful, the attendant ultra-low interest rates caused concerns about the potential for

unintended adverse side-effects. Acting as the 'joint sovereign' behind the euro, national governments could support the ECB in three important areas, staying within the boundaries of the Maastricht Treaty.

First, euro area governments could align their fiscal, financial and structural policies with the ECB's monetary policy stance and play a more active role in speeding up the euro area recovery. This aggregate economic policy mix would demand coordinated action by the Eurogroup involving a fiscal expansion in the (few) countries with fiscal space, a more growth-friendly composition of public finances, comprehensive structural reforms, faster corporate and private insolvency procedures and more decisive action to reduce non-performing loans in the banking sector. This implicit monetary-fiscal-structural policy coordination could promote a sustainable higher growth path, a faster return of inflation to price stability and limit the need for an extended period of record-low interest rates.

Second, the Eurosystem could benefit from euro area governments explicitly taking collective responsibility for the financial risks that it assumes on its balance sheet, in particular when undertaking non-standard monetary interventions. The specific EMU architecture imposes limitations on the degree of sharing capital losses between the NCBs as shareholders of the ECB, especially for purchases of semi-safe public sector bonds. National fiscal guarantees against potential central bank losses could clarify that the financial risks related to such monetary policy actions are ultimately a fiscal responsibility. Clarity on the financial strength of the Eurosystem would in turn protect its financial independence and support its fight against low inflation and a depressed economy.

Third, the monetary policy task of the Eurosystem could be facilitated by the availability of a safe sovereign asset for the eurozone, as indispensable cornerstone of the EMU financial system. The authorities could provide the framework conditions for introducing a synthetic eurobond without mutualising national government debt. The low-risk tranche of this structured euro area security could become the preferred asset in the ECB's monetary policy operations, ensure an even monetary transmission, and support financial stability. The risk reduction achieved by banks holding a safe sovereign asset for the eurozone could also make it easier to complete the European Banking Union with an explicit risk sharing through a common deposit insurance mechanism and a joint fiscal backstop for failing banks.

Each of these three support options has so far been relegated to the future, awaiting further fiscal integration. The political paralysis was to some extent comparable to that experienced during the sovereign debt crisis, when the ECB had to commit its monetary powers for preserving the euro. Eijffinger and Hoogduin (2012) feared at the time that governments might waste the window of opportunity that calmer bond markets offered to accelerate economic convergence and strengthen the EMU architecture. Although important progress was since then achieved in designing a more crisis-prone euro area, the political interest in making EMU sustainable waned as soon as the market pressures abated (van Riet, 2016a).

The consequence of the renewed political paralysis to relieve the burden on ECB monetary policy was a long-lasting period of ultra-low interest rates that was perceived as financial repression of savers and a transfer of resources in favour of borrowers, including high-debt sovereigns. These distributional implications may undermine public support for unconventional monetary policies. This could ultimately lead governments to amend the provisions of the Maastricht Treaty that so far have protected the statutory independence of the ECB (de Haan and Eijffinger, 2016).

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