



DIRECTORATE-GENERAL FOR INTERNAL POLICIES

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**Interaction between Monetary  
Policy and Bank Regulation**

**Monetary Dialogue  
September 2015**

**COMPILATION OF NOTES**





**DIRECTORATE GENERAL FOR INTERNAL POLICIES**  
**POLICY DEPARTMENT A: ECONOMIC AND SCIENTIFIC POLICY**

# **Interaction between monetary policy and bank regulation**

**Monetary Dialogue 23 September 2015**

## **COMPILATION OF NOTES**

### **Abstract**

As the euro area business cycle matures, will the interaction between monetary policy and supervisory policy become potentially controversial? How to avoid situations where controversy over the actions of one policy dents the credibility of the other and/or the institutions involved? And how to best exploit the positive synergies stemming from the close interaction of monetary and macro-prudential policies, especially at times of financial market turbulence?

An in-depth analysis by key monetary experts on these issues is provided in this compilation. The notes have been requested by the Committee on Economic and Monetary Affairs (ECON) of the European Parliament as an input for the September 2015 session of the Monetary Dialogue between the Members of the ECON Committee and the President of the ECB..

This document was requested by the European Parliament's Committee on Economic and Monetary Affairs.

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## INTRODUCTION

The financial crisis has shown that price stability is not sufficient to guarantee financial stability. Prior to the recent financial crisis, the framework of monetary policy was broadly converging toward a price stability (inflation) target and a short-term interest rate as a policy tool. Price stability, however, did not ensure financial stability: the financial cycle and the business cycle are not synchronised. New financial regulation tools were set up to increase the resilience of financial institutions. The newly emerging model is one in which monetary policy is primarily aimed at price stability and supervisory (macro-prudential) policy is primarily aimed at financial stability.

However, monetary and macro-prudential policies interact with each other and thus each may enhance or diminish the effectiveness of the other. Monetary policy affects financial stability by shaping, for instance, leverage and borrowing. By constraining borrowing and hence expenditure, macro-prudential policies have side effects on output and prices and, thus, indirectly on monetary policy. When both monetary and macro-prudential functions are housed within a central bank, coordination is improved but safeguards are needed to counter the risks from dual objectives.

As the euro area business cycle matures, will the interaction between monetary policy and supervisory policy become potentially controversial? How to avoid situations where controversy over the actions of one policy dents the credibility of the other and/or the institutions involved? And how to best exploit the positive synergies stemming from the close interaction of monetary and macro-prudential policies, especially at times of financial market turbulence? An in-depth analysis by key monetary experts on these issues is provided in this compilation. The main conclusions and policy recommendations are summarised below.

The notes have been requested by the Committee on Economic and Monetary Affairs (ECON) of the European Parliament as an input for the September 2015 session of the Monetary Dialogue between the Members of ECON and the President of the ECB.

**Marek Dabrowski** (CASE). For the first decade of its existence, the ECB was operated as a “pure” central bank with a sole price-stability mission, using short-term interest rates as its only policy tool. However, since 2008, at the culmination of the global financial crisis, its status, tasks and toolkit started to change. First, like the US Fed and other central banks, the ECB had to act, on various occasions, as the lender of last resort (LOLR). Second, due to the disruption of the interbank market, it had to substitute its role, providing banks with liquidity support of various maturities and conducting two-way open market operations. Third, since the eruption of Greece’s debt crisis in 2010, the ECB became involved in offering support to distressed sovereigns and banks in crisis-affected countries (especially in Greece), evidently going beyond its mandate and probably breaching Article 123 of the Treaty of the Functioning of the European Union, which prohibits the ECB and national central banks to finance governments. Fourth, since 2011, the ECB has become indirectly involved via the European Systemic Risk Board (ESRB) in macro-prudential oversight. Fifth, since 2014, the ECB has become directly involved in micro-prudential regulation and the supervision of the largest euro area banks within the Single Supervisory Mechanism (SSM).

All of these novelties form serious challenges for the ECB in terms of coordinating its various policies and protecting its independent status. While the ECB’s involvement in macro-prudential policies and micro-prudential regulation and supervision, although not free of risks, may offer substantial euro area-wide externalities (completing financial market integration, reducing financial stability risks and fears of the disintegration of the euro area), other engagements must be considered temporary and a clear timetable of

their termination should be adopted. This concerns, in first instance, its quasi-fiscal support to the distressed sovereigns and banks.

Rapidly launching the SRM and a common deposit insurance scheme for the euro area can diminish the risk of ECB involvement into bank rescue operations in the future. On the other hand, the adoption of the third rescue package for Greece in July-August 2015 financed by the European Stability Mechanism (ESM) will facilitate the gradual ECB disengagement from financing Greece's sovereign debt and supporting its distressed banking sector.

**Daniel Gros** (CEPS). The purpose of macro-prudential policy is to avoid financial crisis. One contention is that the cost of a crisis is higher when debt which was accumulated during a boom was used to invest in Ponzi projects (= projects without returns that pay for debt service, e.g. excess housing, consumption). A second contention is that financial crises are much more severe if the debt is owed to foreigners because savings always have a strong home bias.

One corollary of these two observations is that savings surplus countries are unlikely to have acute financial stability problems as they are unlikely to have excess construction or consumption financed by foreign debt (otherwise they would not have a savings surplus). Macro-prudential policy should thus look not only at financial variables, but also at the current account and investment rates. Hence, there is a case to link the Macroeconomic Imbalances Procedure (MIP) to the work of the European Systemic Risk Board (ESRB).

A final argument is that macro-prudential concerns might reduce the impact of monetary policy, especially at the present juncture. Ultra-low interest rates along the entire maturity spectrum have failed to induce the most solvent agents (those in the savings-surplus countries of the euro area) to spend more. These same low-interest rates seem to have had an impact mainly on the highly indebted agents in the (formerly) deficit countries to spend more, but these are the agents who should run down their debt. The slower the pace of debt reduction in the periphery, the higher the risks for financial stability should interest rates normalise. There is little the ECB can do to escape this conundrum, but it should be aware of the limitations of its policy.

**Rosa M. Lastra** (DIW Berlin / Queen Mary University of London), **Charles Goodhart** (LSE). The banking system is strongly linked to financial markets and other non-bank systemically important financial institutions (SIFIs). This gives grounds for discussion about the limits of the ECB's macro-prudential powers as well as measures and instruments that can be used in the pursuit of financial stability and cooperation with other supervisory authorities.

Not until the post-great financial crisis (GFC) normalisation of monetary policy occurs, will we be able to determine whether the new framework that relies upon the expansion of the balance sheet of the ECB has been effective in securing financial stability without undermining the primary objective of price stability. The Federal Open Market Committee (FOMC) in the USA has just now, in an addendum to its July minutes, mandated a study of monetary policy procedures in the post-GFC framework. Perhaps the ECB might undertake a similar exercise.

Unlike other central banks the ECB has highlighted the separation between monetary policy and banking supervision within its institutional structure. But the benefits of having different functions housed within the central bank cannot be ignored. Lender of last resort (LOLR) / Emergency Liquidity Assistance (ELA) links monetary policy and supervision. The ECB's own restrictive interpretation of the European System of Central Banks (ESCB) Statute that prevents it from acting as a LOLR to individual institutions should, perhaps, change with banking union.

The widening of the ECB's mandate poses a challenge to the independence of the institution itself, as it is more likely to become subject to external pressure especially when it comes to banking supervision and the pre-resolution phase.

Attempts to stretch further the limits of the existing legal framework in the pursuit of financial stability might raise questions about the legitimacy of such actions. Legitimacy and accountability are of paramount importance when dealing with unelected technocratic institutions like independent central banks.

**Angel Ubide** (PIIE). The macro-prudential framework of the euro area is fragile, especially on the borrower side, and its legal basis should be strengthened, especially within the Single Supervisory Mechanism (SSM) area.

This could be achieved via both institutional change and legislative change. On the institutional side, it would be important to harmonize the structure of macro-prudential institutions across the member states and to consolidate them into a European System of Macro Prudential Agencies (ESMPA). This would be composed of the national macro-prudential agencies plus the SSM. Domestic macro-prudential decisions would remain the competence of the national agencies, but the SSM would have the legal ability to initiate actions should it deem it necessary. From a subsidiarity principle standpoint, failure to take decisive macro-prudential action in a particular country could have spillovers onto the rest of the member states – for example, by preventing the ECB to adopt the optimal monetary policy for fear of exacerbating financial stability risks in that particular country.

On the legal side, it would be important that the relevant macro prudential instruments are based on European law. This could be achieved by establishing a minimum set of borrower-based instruments in the European macro-prudential framework, mirroring the European standards for lender based instruments. One option would be to include it in the framework of the CRR/CRDIV (Capital Requirements Regulation and Directive).

As the euro area business cycle matures, the interaction between the ECB and the SSM, between monetary policy and supervisory policy, will become more relevant and, at times, potentially controversial. There are strong arguments to formally separate the two institutions, to avoid situations where controversy over the actions of one institution dents the credibility of the other. At the same time, there could be positive synergies in the close interaction of these institutions, especially at times of financial market turbulence. This is a debate that will require careful attention in the coming years.

**Eddie Gerba, Corrado Machairelli** (LSE). The governance structure in the euro area might strike the right balance between macro- / micro- prudential at both European and national level. What is crucial is that the ECB be able to retain both micro-prudential responsibilities (i.e. balance sheet assessment, through the Single Supervisory Mechanism), and, in coordination with the European Systemic Risk Board, direct macro-prudential competences to “guide” the policy stance of individual national authorities (through the CRR/CRD IV). The ECB/Single Supervisory Mechanism should therefore be able to internalise any tensions between macro- vs. micro-prudential policies and establish a well-defined hierarchy between them.

Some of the new ECB competences are certainly likely to result into a conflict of interest / institutional bias especially when the ECB acts in its liquidity provision role (i.e. lender of last resorts for banks). Hence communication between different parties and a clear mandate, prioritising objectives, should be ensured in order to reduce the intersection of responsibilities, and align preferences at the same time. Here, coordination with national macro-prudential authorities will be essential. National macro-prudential authorities should internalise any tensions between monetary and macro-prudential policies.



**DIRECTORATE GENERAL FOR INTERNAL POLICIES**  
**POLICY DEPARTMENT A: ECONOMIC AND SCIENTIFIC POLICY**

# **Interaction between monetary policy and bank regulation**

**Marek DABROWSKI**

## **IN-DEPTH ANALYSIS**

### **Abstract**

The ECB recently became engaged in macro-prudential policies and the micro-prudential supervision of the largest euro area banks. These new tasks should help complete financial integration, and make the euro area more resilient to financial instability risks. However, the multiplicity of mandates and instruments involves a risk of their inconsistency which could compromise the ECB's core price-stability mandate as well as its independence. The experience of central banks during the recent global financial crisis confirms that such risks are not purely hypothetical.

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## EXECUTIVE SUMMARY

- After the global financial crisis of 2007-2009, the ECB became engaged in macro-prudential oversight of the financial system via the European Systemic Risk Board and, more recently, in banking regulation and supervision within the Single Supervisory Mechanism. Although this would be nothing exceptional in the practice of other central banks, this is quite a new situation for the ECB, which began its operations in 1999 as a “pure” monetary authority.
- Policymakers do not always realize that financial regulations, monetary conditions and monetary policy remain interlinked in various ways. Financial regulations affect monetary conditions via the money multiplier and money velocity, i.e. money supply and demand for money. On the other hand, monetary conditions resulting from monetary policy decisions have an impact on financial stability and financial institutions’ incentives. Both high inflation and deflation have devastating effects for financial stability. However, although sustainable low inflation provides the best macroeconomic environment for financial stability, it is not totally free of risk. Under specific circumstances, such as those prevailing in the early and mid-2000s, it may be conducive to building financial and asset bubbles.
- The above interdependencies as well as other potential synergies (use of the same statistical databases and scarce human resources) may serve as an argument in favour of central banks’ involvement into both macro- and micro-prudential regulation and supervision. On the other hand, the multiplicity of central bank mandates, which requires using multiple instruments, involves the risk of their potential inconsistency which may lead to compromising the core mandate of price stability and central bank independence. The experience of numerous central banks, including the ECB, during and after the recent global financial crisis, confirms that such a risk is not purely hypothetical.
- It is still too early to assess the effects of the new ECB mandates. While its involvement in macro-prudential policies and micro-prudential regulation and supervision is not free of risks, it may offer substantial euro area-wide externalities such as completing financial market integration, reducing financial stability risks and fears of euro area disintegration. Other crisis-related engagements of the ECB, in particular, quasi-fiscal support to the distressed sovereigns and banks, must be considered temporary and should be terminated as soon as possible.

## 1. INTRODUCTION

Apart from its core price stability mandate and monetary policy task, the European Central Bank (ECB) has recently become engaged in the macro-prudential oversight of the financial system via the European Systemic Risk Board (ESRB) (since January 2011) and in banking regulation and supervision within the Single Supervisory Mechanism (SSM) (since November 2014). Although this would be nothing exceptional in the practice of other central banks (most of which are also involved in both macro-prudential policies and banking supervision), this is quite a new situation for the ECB, which started its operations in 1999 as a “pure” monetary authority.

The multiplicity of central bank missions and mandates, which requires using multiple instruments and analytical approaches, has raised theoretical and practical questions regarding their potential inconsistency or even conflicting goals which, under specific circumstances, could lead to compromising the basic mandate of price stability. In particular, the pros and cons of mandating central banks with the tasks related to banking regulation and supervision, macro-prudential policy, and financial stability have been discussed in the literature related to central bank independence and financial vs. business cycles.

This debate came to the forefront again after the 2007-2009 global financial crisis when most central banks, especially in advanced economies, became involved in rescue operations aimed at restoring financial stability; their engagements in macro- and micro-prudential policies expanded and the operational framework of monetary policymaking changed dramatically. Still, several issues remain either open or underexplored both in conceptual and practical terms, especially those concerning the interaction between monetary policy and financial/ banking regulation. Relatively little is reflected in daily operational practices in both spheres of how monetary policy decisions affect financial stability, on the one hand, and how changes in regulatory regimes influence monetary conditions.

The purpose of this brief is to answer some of those questions in the context of the ECB institutional mandate and activity. We start with an analysis of the impact of bank regulation on money supply and demand for money, and the impact of inflation and monetary policy on financial intermediation and financial stability (Section 2). Then we look at the impact of financial instability on monetary policymaking in the context of the recent global financial crisis (Section 3). In Section 4, we discuss the pros and cons of central banks’ involvement in macro- and micro-prudential regulation and supervision. Section 5 brings the previous analysis to the particular context of the ECB’s institutional mandate, governance framework, and operational practices. Section 6 offers a summary of discussions and conclusions.

## 2. THE INTERPLAY BETWEEN FINANCIAL REGULATION AND MONETARY POLICY

In this section, we will briefly discuss the impact of financial regulation (and the microeconomic behaviour of banks and other financial institutions) on monetary conditions and vice versa, i.e., the impact of inflation and monetary policy on the conditions in which the financial sector operates.

### 2.1. The impact of bank regulation on money supply and demand for money

To understand the potential impact of bank/financial regulation on monetary conditions it is helpful to remember basic money supply and money demand equations, especially money multiplier and money velocity, the two parameters which determine both broad money supply and demand for money balances.

The money multiplier is defined as the ratio between the broad money aggregate (i.e. money created by commercial banks and non-banking financial institutions) and the central bank's base money (also called reserve money, monetary base or high-powered money). While there are various definitions of broad money, ranging from the sum of cash in circulation, demand and time deposits (M2) to broader aggregates which also include various quasi-money instruments (M3, M4 or M5)<sup>1</sup>, this does not change the basic characteristic of the money multiplication mechanism of a fractional-reserve banking system.

In our analysis, the two most important questions are: (i) the role of the money multiplier in determining money supply and (ii) factors that may cause changes in the money multiplier.

As for the first question, the higher money multiplier increases broad money created by a unit of the central bank's base money. In turn, as suggested by the quantity theory of money,<sup>2</sup> an increase in broad money without simultaneous changes in demand for money (as determined by changes in money velocity and real GDP) must have inflationary consequences. In the case of a decrease in the money multiplier, the consequences are exactly the opposite, i.e., it leads to less broad money creation and deflationary impact (other things being equal). Putting this in other, more practical words, a higher money multiplier narrows the central bank's room for manoeuvre in an environment of changing base money.

As for the second question, changes in the money multiplier can result from monetary policy instruments, banking and financial sector regulations, and changes in the demand for various types of money balances from economic agents.

The mandatory reserve requirements (MRR) have been the traditional monetary policy instrument. The MRR set the minimum ratio of customer deposits that commercial banks must keep in liquid form (most frequently on a special central bank account). An increase in the MRR rate slows down the mechanism of money multiplication, i.e., makes the money multiplier lower and vice versa. However, several central banks in advanced economies *de*

<sup>1</sup> These definitions vary between monetary jurisdictions. The ECB uses aggregates of M1 (the sum of currency in circulation and overnight deposits), M2 (the sum of M1, deposits with an agreed maturity of up to two years and deposits redeemable at notice of up to three months) and M3 (the sum of M2, repurchase agreements, money market fund shares/units and debt securities with a maturity of up to two years) – see <http://www.ecb.europa.eu/stats/money/aggregates/aggr/html/index.en.html>. While the M1 represents “narrow” money, M2 and M3 are two various measures of “broad” money.

<sup>2</sup> See Friedman (1987) for a historical overview of this theory.

*iure* or *de facto* abandoned this instrument in the last two decades. It is still of use in emerging-market and developing economies, for example, in China<sup>3</sup>.

Banking and financial sector regulations may have a similar although sometimes less direct impact on the money multiplier. In particular, this concerns the liquidity coverage ratio (LCR) and capital adequacy ratios (CAR). Increasing the LCR has a similar (negative) effect on the money multiplier and broad money creation as increasing MRR (see above). Increasing CAR can also suppress the money multiplier at least in the short term until commercial banks supplement their capital. The same concerns fiscal instruments such as taxes on banking transactions, e.g., a financial transaction tax proposed by the European Commission and introduced or considered to be introduced in several EU member states<sup>4</sup> would inevitably lead to financial disintermediation and a dampening of the money multiplier.

The way in which various regulatory standards are defined may also affect changes in the money multiplier. This concerns, for example, the methodology of calculating risk-weighted assets introduced by the Basel-II accord. Apart from its obvious pro-cyclicality with respect to banks and other financial institution activity (risk decreases during a boom and increases during a downfall – see Repullo and Suarez, 2008), it also has a pro-cyclical impact on money multiplier and money supply.

Finally, the size of the money multiplier also depends on a bank's own liquidity and capital adequacy preferences beyond the MRR, LCR and CAR. Especially in a time of financial distress and market uncertainty, commercial banks may conduct a more "conservative" business model, preferring to retain additional liquidity and capital margins (beyond what is required by prudential standards) rather than become engaged in risky lending. Such practices can explain the phenomenon of excess voluntary reserves kept by commercial banks in central banks. In monetary policy terms, this means a lower money multiplier as compared to when banks work at full lending capacity (i.e., within the limits set by regulatory norms).

Bank regulation may also have a certain impact on demand for money. Tighter banking regulation increases the costs of financial intermediation and can lead to an increase in the demand for cash and narrow money aggregates (M1) at the cost of demand for broad money. The same concerns periods of financial distress when the liquidity of quasi-money instruments comes under question. Such fluctuation in demand for money can cause changes in the velocity of various monetary aggregates.

Regretfully, policymakers do not always understand the impact of changes in the banking/financial sector regulatory regimes on money supply and demand for money. As a result, they are rarely taken into consideration in monetary policymaking and regulatory policies.

## **2.2. The impact of inflation and monetary policy on financial intermediation and financial stability**

Inflation and monetary conditions have an impact on financial intermediation and financial stability and, therefore, on financial regulations and their effectiveness. The vast empirical experience demonstrates that high inflation discourages and distorts financial intermediation and may undermine the stability of banking and financial systems (Bordo et al. 2001; Borio and White 2003; Poole and Wheelock 2008). This is due to high-inflation volatility and unpredictability with respect to its exact rate, resulting in difficulties in assessing the future real rate of return, a worsening of the asymmetric information

<sup>3</sup> When mandatory reserves remain non-remunerated, i.e., at zero interest rate or at an interest rate below market level they also play the role of a quasi-tax on commercial banks' money balances, which is transferred to the treasury via the central bank's profit share mechanism.

<sup>4</sup>[http://ec.europa.eu/taxation\\_customs/taxation/other\\_taxes/financial\\_sector/index\\_en.htm](http://ec.europa.eu/taxation_customs/taxation/other_taxes/financial_sector/index_en.htm)

problems between lenders and borrowers, and frequent recessions following high-inflation periods (Issing 2003). High inflation also leads to the real depreciation of bank capital.

Changes in inflation levels (especially if unexpected) create numerous risks. In periods of inflation acceleration, banks suffer losses resulting from a maturity mismatch. They must borrow in the short-term at higher nominal interest rates (adjusted for higher inflation) to finance their long-term lending contracts and other assets which previously offered lower interest rates. The disinflation process, often associated with a slowdown in economic activity or even recession, leads to the deterioration of banks' assets portfolios (an increase in the non-performing loan ratio) even if the above-mentioned maturity mismatch allows borrowing at lower rates.

Deflation is perhaps even worse for the financial system. The real value of debt is increasing even if interest rates are close to zero. Most frequently, deflation is associated with output stagnation or decline. The ratio of non-performing loans is increasing. Assets prices are going down; the same is true for the value of credit collateral.

Based on the above analysis, one can draw the conclusion that sustainable price stability is the best macroeconomic environment for ensuring financial stability. In principle, this is true but it does not mean that a low-inflation environment is free of risks. On the contrary, success in bringing actual inflation and inflationary expectations down can weaken the perception of potential risks among both financial institutions and their clients (Borio and White 2003; Issing 2003; Adrian and Liang 2014). This may manifest itself in under-pricing risk, accepting excessive maturity mismatches and leverage, and preference for complex financial instruments (see Adrian and Liang 2014). Low nominal and real interest rates in commercial banks (resulting from the absence of inflationary pressure) can tempt economic agents to invest their money balances in more risky but higher-yield financial instruments, so financial institutions feel pressed to provide them with such opportunities.

Furthermore, the disappearance of immediate inflation risk (as occurred in most advanced economies in the 1990s) may shift monetary policy's focus on stabilizing output and employment, which can sometimes result in more expansionary monetary policies than dictated by the price stability goal alone. As a result, the additional money supply created by a looser monetary policy stance combined with a low risk perception can fuel credit and asset bubbles. Because asset prices are not part of the consumer price basket, the most frequent measure of inflation, i.e., consumer price index (CPI), does not reflect changes in their level. Therefore, they can remain unnoticed by the monetary authority if it focuses on price stability in a traditional, narrow sense (see Section 4).

Historical experience confirms the dangers of building up financial sector instability in low-inflation periods, for example, in the US in the 1920s, 1990s and early 2000s, in some of the EU in the early and mid-2000s, in Japan and Scandinavia in the 1980s, or in East and South East Asia in the 1990s. In particular, there is vast evidence that the low interest rates of major central banks in the early and mid-2000s may have contributed to building financial and asset bubbles, which eventually led to the 2007-2009 financial crisis (see e.g. De Larosiere et al. 2009; Taylor 2010; Maddaloni and Peydro 2013). It may also happen that the current period of historically record-low interest rates will contribute to building up new financial bubbles.

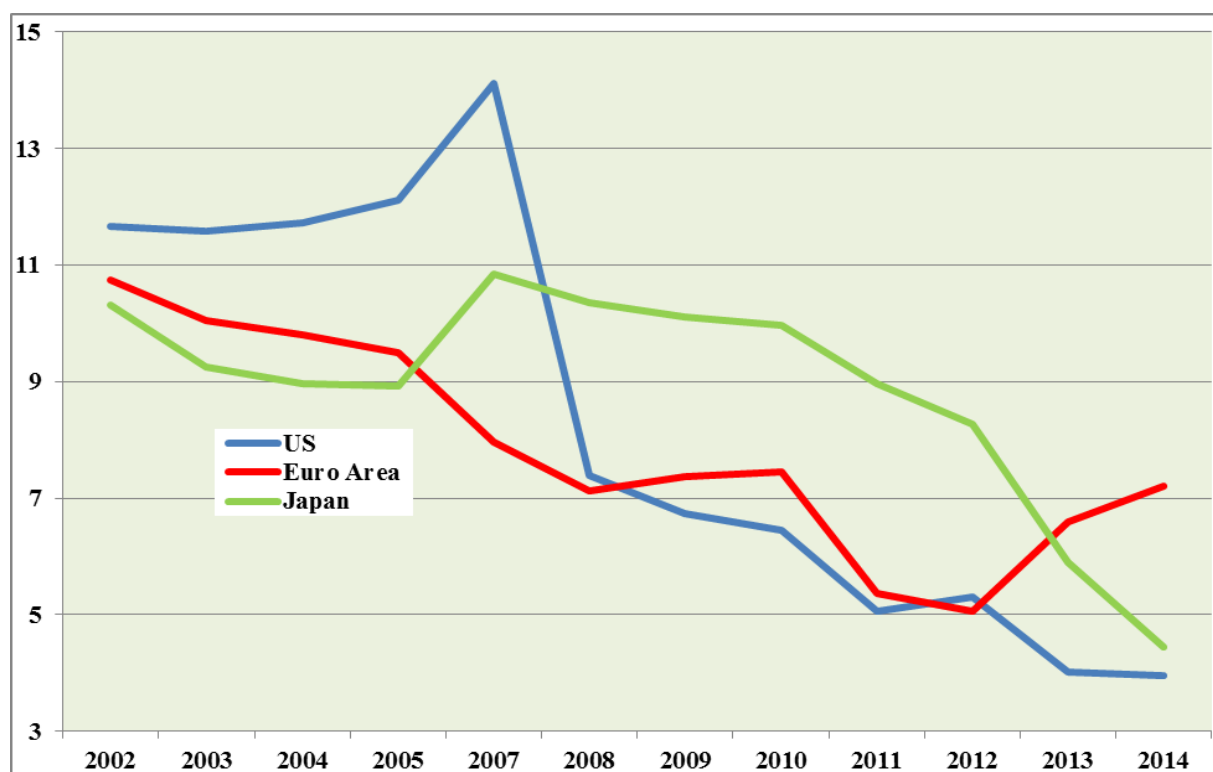
### 3. THE IMPACT OF FINANCIAL INSTABILITY ON MONETARY POLICY MAKING

Periods of financial instability radically change the environment in which monetary policy is conducted. Liquidity and solvency problems faced by banks and other financial institutions impair their ability to continue their previous business strategies and practices. Furthermore, the difficulty of any larger bank (sometimes only suspected) in meeting its obligations vis a vis depositors can trigger a far-reaching confidence crisis in the entire banking system (systemic banking crisis). If this happens, a massive deposit withdrawal may follow, which would dry up the interbank market and possibly cause a flight from the national currency (in economies which suffer from currency substitution). As a result, the level of financial intermediation drastically collapses, at least temporarily. In such a situation, economic agents prefer to keep their money balances in liquid form, often outside banks. In turn, commercial banks want to keep more of their assets in cash and as demand deposits in the central bank. The money multiplier collapses (Adrian and Liang 2014) and broad money supply shrinks.

The central bank must step in not only as the lender of last resort (LOLR) to stop/ limit the liquidity crisis but also to avoid the monetary crunch caused by a decline in the money multiplier. Thus, it must compensate for the decline in the money multiplier with additional base money supply.

**Figure 1: Money multiplier in the US, euro area and Japan, 2002-2014**

(broad money/ base money)



**Source:** International Monetary Fund, International Financial Statistics ([www.data.imf.org](http://www.data.imf.org)) and author's own calculation

In countries which suffer from the limited credibility of their currencies, the demand for money balances denominated in the local currency also collapses as a result of financial crisis (because of the flight to foreign currency) which will be reflected in increasing money velocity. In such cases, the room for manoeuvre of the central bank to provide emergency



liquidity to local banks and compensate for the decreasing money multiplier remains limited. However, in advanced economies, this is rarely a problem. On the contrary, a financial crisis usually results in increasing demand for (the decreasing velocity of) base money and narrow money (M1).

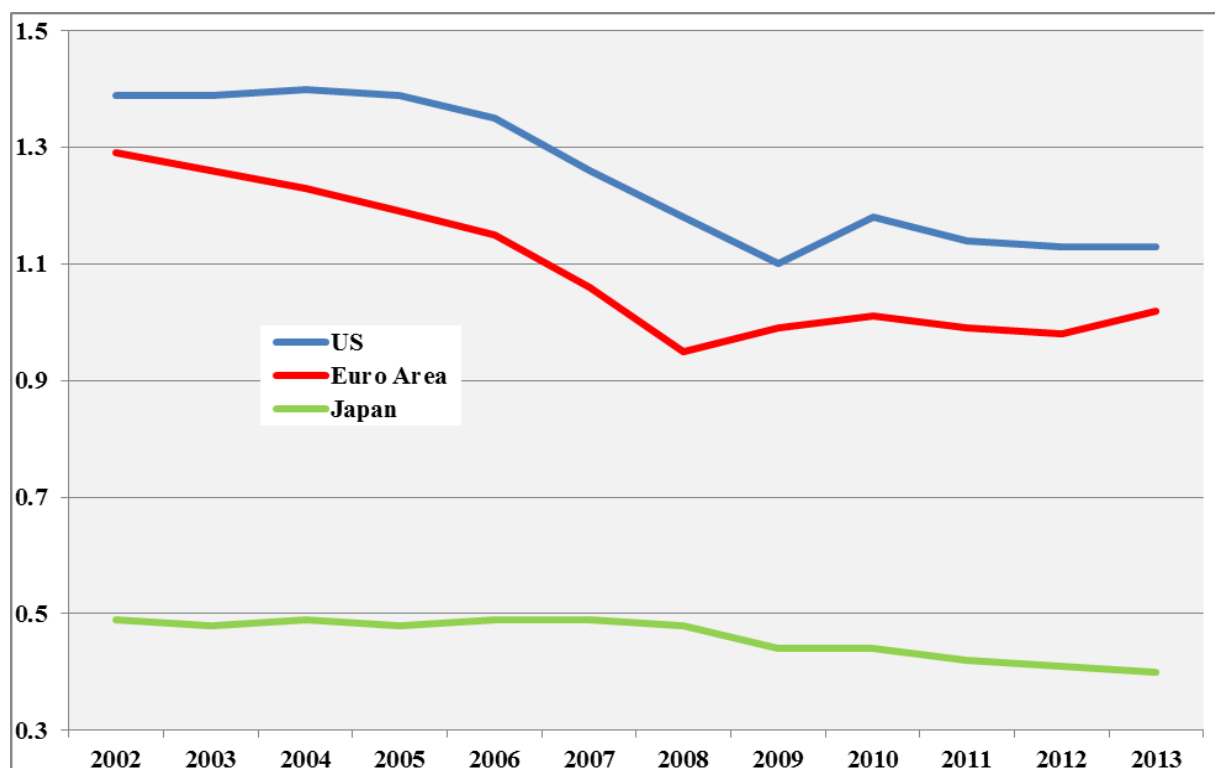
The recent global financial crisis, which was triggered by the bust of the subprime mortgage market in the US in the summer of 2007, provided good empirical evidence of how a major episode of financial instability can affect monetary policymaking and central bank functioning.

Figure 1 demonstrates a dramatic decline in the money multiplier in three major monetary jurisdictions: the US, euro area and Japan. At the beginning, this was the result of spontaneous financial disintermediation caused by the financial crisis. In subsequent years, this effect was magnified, however, by tighter prudential regulations (see Section 2).

On the other hand, broad money velocity recorded a modest decrease (Figure 2), which reflects the increasing demand of economic agents for money balances. Given these two trends (decreasing multiplier and velocity), central banks had to rapidly expand their monetary bases and, consequently, balance sheets, which was done in a relatively short period of time (Figure 3) to avoid a monetary crunch and deep deflation of the sort observed in the early 1930s.

**Figure 2: Broad money velocity in the US, euro area and Japan, 2002-2014**

(nominal GDP/ broad money)



**Source:** International Monetary Fund, International Financial Statistics ([www.data.imf.org](http://www.data.imf.org)) and Author's own calculation

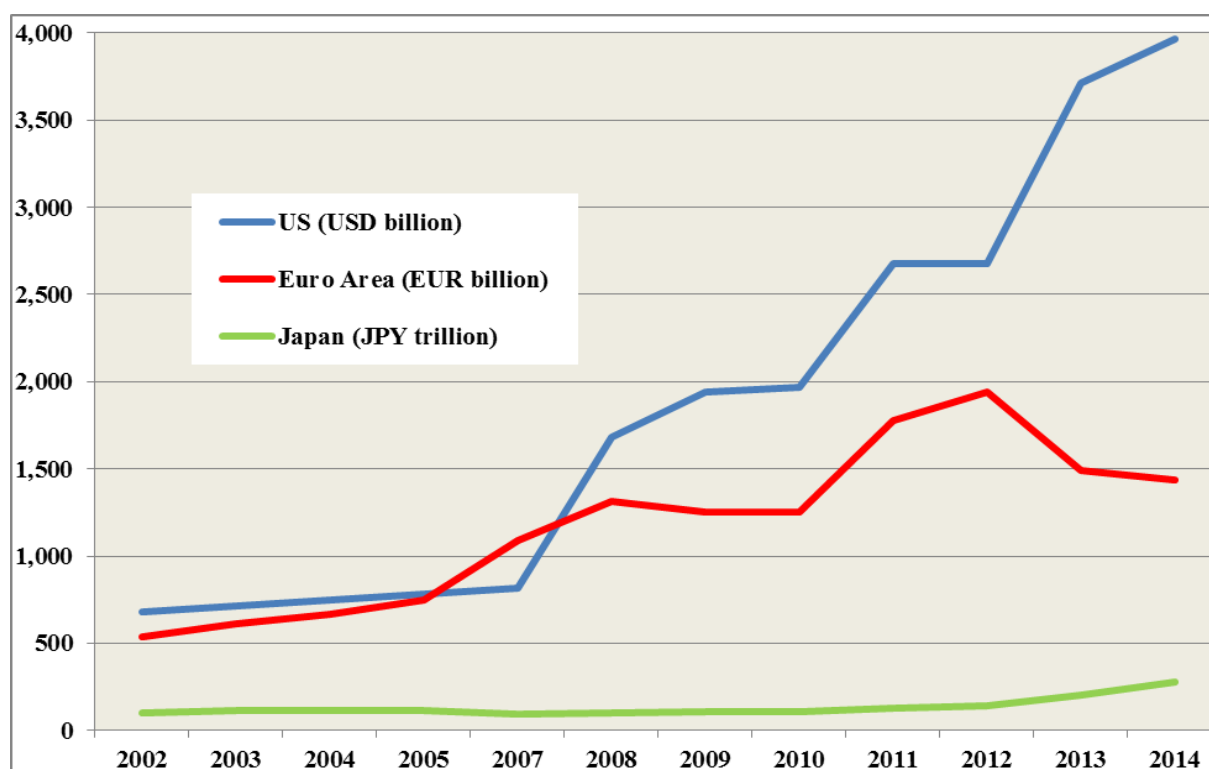
The US Federal Reserve Board (the Fed) recorded the largest expansion of its base money (almost 5 times) between 2007 and 2014. The ECB responded in a milder way; its base money nearly doubled between 2007 and 2012 and started to decline thereafter<sup>5</sup> (Figure

<sup>5</sup> Figure 3 does not cover 2015 when the ECB launched the large-scale Public Sector Purchase Programme (PSPP), a sort of QE which, most likely, will bring a substantial expansion of its base money (see also Section 5).

3). The Bank of Japan started to follow other central banks with a significant time lag. However, between 2012 and 2014, it more than doubled its base money.

**Figure 3: Base money in the US, euro area and Japan, 2002-2014**

(in national currencies)



Source: International Monetary Fund, International Financial Statistics ([www.data.imf.org](http://www.data.imf.org))

Central banks in advanced countries had also to deal with other challenges brought on by the global financial crisis (Gerlach et al. 2009). First, they had to accept the lower quality of collateral to be able to continue extending credit to commercial banks. Second, in response to the paralysis of various segments of the interbank market, they increased the maturity of their lending to commercial banks. Third, for the same reason, they substituted the interbank market by conducting two-way monetary operations, i.e., simultaneously lending to banks faced by structural underfunding and absorbing excessive liquidity from overfunded banks.

Such an engagement could be seen as an emergency measure aimed at temporarily substituting the dead interbank market to allow for the uninterrupted operation of monetary transmission channels. However, once the central bank steps into the role of commercial banks intermediary, it may not be easy to restore the interbank market afterward.

Fourth, the aggressive monetary easing quickly brought central bank interest rates to the near-zero level. Losing their traditional “ammunition”, central banks have had to look for unconventional monetary tools such as massive asset purchases, so-called quantitative easing (QE). Furthermore, because of the limited and not always sufficiently liquid market of private securities (especially in Europe), QE has inevitably led to massive purchases of treasury bonds in a situation when public debt in most of the advanced economies has grown rapidly. In this way, central banks have become hostages of the troubled fiscal policy, even if formally the QE has been justified by money supply considerations and conducted exclusively on the secondary market.

Finally, some central banks, the US Fed for first instance, have become engaged beyond monetary policy and LOLR responsibilities. For example, they have participated in cleaning up commercial bank portfolios, taking over part of their non-performing assets, recapitalizing banks, arranging bank mergers, etc., i.e., in activities which should be conducted by governments and which often have a quasi-fiscal character which might eventually compromise central bank independence. The ECB has been much more “conservative” in this respect; however, it has become engaged in rescuing distressed sovereigns, especially in the case of Greece (Section 5).

Even if central banks did not cross the limit which might compromise their independence, their tasks expanded and operational frameworks became more complicated as compared to the pre-crisis situation. Before the crisis, most central banks in advanced economies aimed primarily at achieving/maintaining price stability (defined in various ways in individual jurisdictions<sup>6</sup>) and to achieve this goal they used a single instrument, i.e., short-term interest rates. During and after the crisis, their focus on output and employment increased, partly as a result of very low or even negative inflation. In addition, they assumed de iure or de facto new mandates, especially with respect to financial stability and prudential supervision. On the other hand, once short-term interest rates hit the zero band, central banks had to resort to other less conventional and more controversial policy tools such as QE. We will come back to these problems in the subsequent sections of this brief.

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<sup>6</sup> In terms of formal regulations, the US Fed represents a major exception here. The Federal Reserve Act established three statutory objectives for monetary policy – maximum employment, stable prices, and moderate long-term interest rates (see [http://www.federalreserve.gov/faqs/money\\_12848.htm](http://www.federalreserve.gov/faqs/money_12848.htm)).

## 4. CENTRAL BANKS AND FINANCIAL STABILITY

As previously mentioned, the statutory missions and legal mandates of most central banks go beyond price stability goals and conducting monetary policy and include various aspects of financial stability, banking and financial regulation and supervisory powers. They fall into two categories: (i) regulation and supervision of individual banks and (sometimes) other financial institutions (micro-prudential regulation and supervision) and (ii) monitoring and counteracting the system-wide risks to financial stability (macro-prudential policies), which we will discuss briefly below.

### 4.1. Central banks and banking regulation and supervision

Most central banks in the world are involved in banking regulation and supervision either directly or indirectly through autonomous regulatory bodies operating within central bank structures. In some countries (such as the US), the central bank shares regulatory and supervisory responsibilities with other, usually government bodies. As a result of the recent global financial crisis, central banks' regulatory and supervisory responsibilities have increased. In some countries, they were moved back from government regulatory bodies to central banks. The best example is the UK, where, in 2010, the newly created Prudential Regulation Authority<sup>7</sup> within the Bank of England replaced the governmental Financial Services Authority, which was in charge of banking regulation and supervision between 1997 and 2010.

With the launching of the SSM in November 2014, the ECB also joined the group of central banks involved in micro-prudential regulation and supervision (see Section 5).

### 4.2. The content and role of macro-prudential policies

Macro-prudential policy is a relatively new concept and is not always precisely defined in conceptual or operational terms. Although the origins of this approach go back to the late 1970s (Clement 2010), it was the recent global financial crisis, which made policymakers around the world excited about this idea and truly interested in its practical adoption.

The aim of macro-prudential policy is to identify and limit a systemic risk, i.e., the risk of widespread disruptions to the provision of financial services. Its focus is on the financial system as a whole, including the interactions between the financial and real sectors, as opposed to its individual components. Macro-prudential policy uses primarily prudential tools calibrated to target the sources of systemic risk (Macroprudential 2011). This means that macro-prudential policy is to build a bridge between micro-prudential regulation and the supervision of banks and other financial institutions, on the one hand, and monetary and other macroeconomic policies, on the other.

The launch of macro-prudential policies raised expectations in terms of preventing a new systemic financial crisis on the scale of the one in 2007-2009 and smoothing out both business and financial cycles (Brunnermeier et al. 2009; Angelini et al. 2012). However, it is still too early to say whether those expectations are justified and can be met. Most countries are still at the stage of building their respective governance structures, developing research and analyses, and experimenting with various policy tools. The IMF cross-country analysis for the period up to 2013 (Cerutti et al. 2015) suggests that (i) emerging-market economies more actively use macro-prudential tools than advanced economies; (ii) emerging market economies concentrate on foreign-exchange related measures (in some instances it is just a reincarnation of capital controls under a new label) while advanced economies prefer borrower-based measures such as caps on loans-to-value (LTV) and debt-to-income (DTI) ratios; (iii) some of these measures are associated with a

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<sup>7</sup> See <http://www.bankofengland.co.uk/pru/Pages/supervision/default.aspx>

reduction in the growth rates of real credit and home prices; (iv) nationally adopted measures tend to be circumvented through cross-border financial transactions.

The implementation of macro-prudential policies has been, in most cases, delegated to central banks. They are involved either directly or through external policy bodies in which they play a leading role. In the UK, it is the Financial Policy Committee within the Bank of England, which is appointed similarly to the Monetary Policy Committee<sup>8</sup>. In the case of the EU and euro area, it is the ESRB with a leading role played by the ECB (see Section 5). Only the US Fed has a less privileged position within the Financial Stability Oversight Council (FSOC).

In practice until now, a broad spectrum of macroeconomic and financial indicators has been used to detect the potential dangers of systemic risks within financial systems. However the list of those indicators and data sources is a subject of discussion and needs further improving (see Macroprudential 2011; Cerutti et al. 2015; ESRB 2014). The same concerns concrete policy tools.

The existing cross-country evidence (Cerutti et al. 2015; ESRB 2015) records the most frequent use of the following macro-prudential measures: Countercyclical Capital Buffer/ Requirement, Leverage Ratio for banks, Time-Varying/ Dynamic Loan-Loss Provisioning, LTV ratio, DTI ratio, Limits on Domestic Currency Loans, Limits on Foreign Currency Loans, Reserve Requirement Ratios, Levy/Tax on Financial Institutions, Capital Surcharges on Systemically Important Financial Institutions (SIFIs), Limits on Interbank Exposures, and Concentration Limits.

#### **4.3. The pros and cons of the central bank's involvement in bank regulation and macro-prudential policies**

Although most central banks have been involved in bank/ financial regulation and supervision for a long time and, more recently, also in macro-prudential policies, their involvement is not free of controversy.

On the one hand, there are a number of arguments in favour of central banks' engagement in banking regulation and supervision. They refer to the synergy between monetary policy and banking regulation and supervision. As discussed in Section 2, both are interlinked, i.e., banking and financial regulations have an impact on money supply (via money multiplier) and demand for money (via money velocity), and monetary conditions and monetary policy have an impact on financial stability. Thus, bringing banking regulation and supervision under a central bank's jurisdiction offers the chance of better mutual coordination. Similar arguments refer to the synergy between price and financial stability. The former cannot be sustainable and will not ensure sustainable economic growth without the latter<sup>9</sup>.

Furthermore, the legal and operational independence of central banks from both the executive and legislative branches of government offers the opportunity to carry out micro-prudential supervision in a less politicized way, disregarding the political cycle (as compared to the model where these tasks belong to a government agency even if the latter possesses a high degree of operational autonomy).

Other, more practical, arguments refer to the similarity of professional skills and knowledge (sometimes of a unique character) required by both monetary policy and banking supervision and use of the same statistical data sources based, to a large extent, on bank reporting.

<sup>8</sup> See <http://www.bankofengland.co.uk/financialstability/Pages/fpc/default.aspx>

<sup>9</sup> De Grauwe (2007) argues in favour of mandating central banks with the responsibility to prevent financial bubbles and supervise all financial institutions, not only banks.

The above arguments sound even stronger in the case of macro-prudential policies, which are closer to monetary policy in terms of their substance, potential synergies, statistical databases and required professional expertise than in the case of traditional, micro-prudential regulation and supervision. Some analyses take for granted that they should be conducted by central banks or under their leadership (see e.g., Brunnermeier et al. 2009; Gersbach 2010; Adrian and Liang 2014). Others make a strong argument in favour of such a mandate (De Larosiere et al 2009).

The opposite opinions argue that price and financial stability do not always go hand-in-hand (see Section 2) and achieving them requires different policies, which may be contradictory in a given point in time. Furthermore, the concept of financial stability is not always precisely defined in operational terms (Issing 2003; Wall 2014) and there are no good operational models, which can guide central banks in how to achieve financial stability goals by using monetary policy tools (Wall 2014).

This argument can be further developed by referring to the so-called Tinbergen rule, which says that the number of policy goals cannot exceed the number of instruments at the policymakers' disposal. Thus if a central bank uses the short-term interest rate as its only instrument, it cannot focus on two different goals – price stability and financial stability (however it is defined).

However, as we discussed in Section 3, since the 2007-2009 global financial crisis, most central banks in advanced economies are not able to conduct monetary policies using only one instrument, i.e., the short-term interest rate. The largest central banks (the US Fed, the ECB, the Bank of Japan, the Bank of England) are involved in various forms of QE. Thus, they use more than one instrument, and de facto take care of financial stability goals. To formalize this practice, Gersbach (2010) proposes setting two central bank policy goals, price stability and the stabilization of output fluctuations, by avoiding or reducing financial instability. This can be accomplished by using two separate instruments (the short-term interest rate and the aggregate equity ratio of the banking sector).

While Gersbach's (2010) proposal can solve the dilemma related to the Tinbergen rule, it may not be able to ensure the consistency of price stability and financial stability goals at a given point in time. As discussed in Section 2, price stability can encourage, under certain circumstances, excessive risk taking and there can be a discrepancy between business and financial cycles. Thus, at least hypothetically, central banks' engagement in macro-prudential policies may expose them to the necessity of pursuing conflicting policy goals.

These kinds of risks increase when the central bank is involved in micro-prudential regulation and supervision and takes outright responsibility for the stability of the banking and financial system. What seems to be its institutional advantage, i.e., independence from government (see above), may be compromised when the central bank deals with the politically sensitive issues of bank/ financial sector regulation, supervision and resolution (in the case of failures), which also involve fiscal responsibility.

This danger has been discussed in the literature on central bank independence (e.g. Cukierman 1996), in particular, in the case of emerging-market and transition economies. However, the experience of the recent global financial crisis (see Section 3) demonstrates that this is also a serious challenge for central banks in advanced economies, due to their deep involvement in policies of rescuing and rehabilitating the financial sector. This was also the reason why the De Larosiere (2009) report did not recommend mandating the ECB with the task of micro-prudential supervision.



## 5. THE EXPERIENCE OF THE ECB

The ECB started its operations in 1999 as a “pure” monetary authority following the tradition of the German Federal Bank (Bundesbank). Its primary objective is to maintain price stability, which has been operationalized by the ECB Governing Council as maintaining “...inflation below, but close to, 2% over the medium term” (ECB 2011, p.7). In its monetary policy decisions, the ECB follows the stability-oriented two-pillar strategy based on economic and monetary analysis (ECB 2011, p. 69-72), which differs from both traditional monetary targeting and direct inflation targeting frameworks but draws from the experience of both<sup>10</sup>.

In the first decade of its operation, the short-term interest rates (the rate on the main refinancing operations, the rate on the deposit facility and the rate on the marginal lending facility, mutually interlinked) served as the main monetary policy tools. Since 2008, the ECB started to use several “non-standard” measures aimed at addressing the consequences of the global financial crisis and then, since 2010, of the European sovereign debt and financial crisis. In January 2015, after its short-term interest rates hit the zero-level band, the ECB launched large-scale QE operations (Constancio 2015), which primarily target the sovereign debt market (due to the insufficient supply of commercial bonds and papers).

The global and European financial crises also led to the ECB involvement in financial-stability related tasks, including prudential regulation and supervision. Following the recommendations of the De Larosiere (2009) report, the European Parliament and Council approved two EU regulations in December 2010 which created the ESRB and determined ECB tasks with respect to its functioning<sup>11</sup>. The ESRB started its operations in 2011 as the part of the European System of Financial Supervision (ESFS) with the mission of macro-prudential oversight of the EU financial system. The main tasks of the ESRB include identifying and prioritizing systemic risks, issuing warnings in the case of significant risks and offering recommendations for remedial actions<sup>12</sup>.

The ECB plays a leading role in the ESRB operation. First, the ESRB General Board includes the President and Vice-President of the ECB and the governors of national central banks of EU member states. The ECB President chairs the ESRB General Board. Second, the ESRB Steering Committee is led by the Chair of the ESRB (i.e., the ECB President) and includes the ECB Vice-President and four members of the General Council of the ECB. Third, the respective department of the ECB performs the role of the ESRB Secretariat.

It is still too early to make a comprehensive assessment of the ESRB's activity and its effectiveness in reducing financial stability risks. It is even more difficult to discuss at this stage the potential synergies or conflicts between macro-prudential policies and their tools and monetary policy goals and instruments. Macro-prudential policy in the EU is still in a relatively early stage of operationalization and, even more, implementation. The two major macro-prudential regulations - the Capital Requirements Directive (CRD)<sup>13</sup> and the Capital Requirements Regulation (CRR)<sup>14</sup> – became effective as recently as January 1, 2014. Their implementation remains, primarily, in the hands of national regulatory and supervisory authorities, which are proceeding at various speeds, and retain a wide room for manoeuvre

<sup>10</sup> A focus on monetary conditions (second pillar) can be considered an advantage as compared to “pure” inflation targeters because it allows for detecting potential credit bubbles in their early stages (see Issing 2003).

<sup>11</sup> <https://www.esrb.europa.eu/shared/pdf/ESRB-en.pdf?6a0e8a41588689e67237056e5be9da51>,  
<https://www.esrb.europa.eu/shared/pdf/ESRB-ECB-en.pdf?ba8979bdee8b7e6bcf42965df740cfb6>

<sup>12</sup> It is also important to note that the Macroeconomic Imbalance Procedure (MIP) operated by the European Commission since 2012 (with respect to the EU member states) has somewhat similar goals. It focuses on sources of potential macroeconomic instability but is not limited to the financial sector only.

<sup>13</sup> <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013L0036&from=EN>

<sup>14</sup> <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013R0575&from=EN>

in terms of their interpretation and concretization. The role of the ESRB is mainly overseeing and monitoring this process.

Finally, contrary to the recommendations of the De Larosiere (2009) report, the ECB has become involved since the end of 2014 in the micro-prudential regulation and supervision of the largest banks in the euro area via the SSM. The SSM constitutes one of the pillars of the Banking Union, which has the chance to make a substantial contribution to the euro area and EU-wide financial stability, increasing the transparency of its banking system, reducing the hypothetical risks of euro area disintegration, deepening financial market integration and, therefore, making the monetary transmission mechanism in the euro area more efficient.

The increasing market calm in the euro area financial markets (even during the period of the returning risk of Grexit in the first half of 2015) may serve as evidence of the substantial externalities provided by the Banking Union project and the positive expectations of economic agents related to its launching. Whether those expectations prove justified will depend on the speed of implementation of the Banking Union (which still remains incomplete) and its practical operation, especially in the case of financial market distress.

If successfully implemented, the other pillars of the Banking Union, i.e., the Single Resolution Mechanism (which is in early stages of implementation) and the euro area-wide deposit insurance system (the lacking element), can diminish the risk of pressure on the ECB to provide support to the banking system beyond its price stability mandate and the LOLR role. The experience since 2010 demonstrates that this is not a purely hypothetical risk. The ECB involvement into rescue programs to peripheral euro area countries suffering various forms of public debt and financial crises (especially Greece) raised doubts and instigated heated public debate over whether the ECB went beyond its statutory mission and became involved in quasi-fiscal activities, a debate which goes beyond the remit of this analysis.



## 6. CONCLUSIONS

Historically, many central banks around the world have been involved in various tasks related to financial stability and prudential regulation. This involvement is not free of controversy. On the one hand, it allows for better coordination of monetary policy and banking/ financial sector regulation, which affect each other. On the other hand, under certain circumstances, such a dual mandate can lead to compromising the central bank's core mission, i.e., price-stability oriented monetary policy and – as a result – the central bank's independence.

The developments during and after the global financial crisis of 2007-2009 have confirmed these concerns. Central banks' involvement into banking and financial sector regulation and supervision increased and a new framework of macro-prudential policies with central banks playing a leading role emerged. Several central banks provided quasi-fiscal support to the distressed financial institutions and, sometimes, sovereigns, going well beyond their statutory remit.

For the first decade of its existence, the ECB was free of this dilemma. It operated as a "pure" central bank with a sole price-stability mission, using short-term interest rates as its only policy tool. However, since 2008, at the culmination of the global financial crisis, its status, tasks and toolkit started to change. First, like the US Fed and other central banks, the ECB had to act, on various occasions, as the LOLR. Second, due to the disruption of the interbank market, it had to substitute its role, providing banks with liquidity support of various maturities and conducting two-way open market operations. Third, since the eruption of Greece's debt crisis in 2010, the ECB became involved in offering support to distressed sovereigns and banks in crisis-affected countries (especially in Greece), evidently going beyond its mandate and probably breaching Article 123 of the Treaty of the Functioning of the European Union, which prohibits the ECB and national central banks to finance governments. Fourth, since 2011, the ECB has become indirectly involved (via the ESRB) in macro-prudential oversight. Fifth, since 2014, the ECB has become directly involved in micro-prudential regulation and the supervision of the largest euro area banks within the SSM.

All of these novelties form serious challenges for the ECB in terms of coordinating its various policies and protecting its independent status. While the ECB's involvement in macro-prudential policies and micro-prudential regulation and supervision, although not free of risks, may offer substantial euro area-wide externalities (completing financial market integration, reducing financial stability risks and fears of the disintegration of the euro area), other engagements must be considered temporary and a clear timetable of their termination should be adopted. This concerns, in first instance, its quasi-fiscal support to the distressed sovereigns and banks.

Rapidly launching the SRM and a common deposit insurance scheme for the euro area can diminish the risk of ECB involvement into bank rescue operations in the future. On the other hand, the adoption of the third rescue package for Greece in July-August 2015 financed by the European Stability Mechanism (ESM) will facilitate the gradual ECB disengagement from financing Greece's sovereign debt and supporting its distressed banking sector.

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## NOTES



DIRECTORATE GENERAL FOR INTERNAL POLICIES  
POLICY DEPARTMENT A: ECONOMIC AND SCIENTIFIC POLICY

# Macro-prudential policies and monetary policy: Three neglected issues

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## IN-DEPTH ANALYSIS

### Abstract

Macro-prudential policy is taken to be a natural complement to monetary policy. The standard division of labour is that monetary policy sets the interest rate aiming at price stability whereas macro-prudential policy aims at ensuring financial stability. In reality, there might also be conflicts of interest. At the present time, it appears that the ECB seeks to stimulate more expenditure because it is undershooting its price-stability target. But the most solvent agents (in the core countries) do not respond, and more expenditure by the highly indebted agents in the euro area's periphery is not desirable as it would delay the necessary deleveraging.

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## EXECUTIVE SUMMARY

The relationship between macro-prudential and monetary policy has been a popular subject of research over the last few years. Most of the literature concludes that macro-prudential policy should be seen as a natural complement to monetary policy and there should be close coordination between the two. Under the principle that one policy (instrument) should be assigned to one goal, the natural division of labour recommended is that monetary policy sets the interest rate aiming at price stability whereas macro-prudential policy aims at ensuring financial stability.

But in reality there might also be conflicts between these two policies. At the present time, it appears that the European Central Bank (ECB) seeks to stimulate more expenditure because it is undershooting its price-stability target. But the most solvent agents (in the core countries) are not responding and more expenditure by the highly indebted agents in the euro-area's periphery is not desirable as it would delay the necessary deleveraging.

This note also discusses two more often-overlooked aspects of macro-prudential policy.

The first point concerns the main indicator of potential instability that macro-prudential policy should be looking at. This is usually taken to be leverage, or rather the ratio of credit to GDP. This contribution argues that the macro-prudential authorities should also be on the look-out for large-scale mis-investment. The background to financial crisis is not only high leverage, but also over-investment in certain sectors, e.g. real estate in Spain and Ireland up to 2008, internet companies during the dot-com bubble.

Another important point is that a financial crisis becomes acute mainly if (leveraged) investment has been financed by foreign capital. Financial boom-bust cycles play out differently in excess savings and in deficit countries. The financial crisis of 2007-08 initially appeared to affect all EU Member States, but the subsequent 'euro' crisis affected only those countries that were running a (current account) deficit in 2008.

In sum, it matters whether one wastes one's own or other people's money.

## 1. INTRODUCTION

The relationship between macro-prudential and monetary policy has been a popular subject of research over the last years, see Galati and Moessner (2011) and IMF (2013), more recently. Most of the literature concludes that macro-prudential policy should be seen as a natural complement to monetary policy (explicit in the title of George (2015)). Given that any regulatory changes in finance are likely to affect the effectiveness of monetary policy it is not surprising that most authors also conclude that there should be close coordination between the two. An early contribution, de Grauwe and Gros (2009) argued even that the ECB should not only aim at price-, but also at financial stability. Before the creation of the ESRB (European Systemic Stability Board) this contradiction with the principle that one policy (instrument) should be assigned to one goal, the natural appeared, as second best, preferable to nobody paying attention to systemic stability at the level of the euro area.

The situation today is different, with the ESRB in existence, complemented by national macro-prudential authorities. The natural division of labour recommended today is thus naturally that monetary policy aims at price stability whereas macro-prudential policy aims at ensuring financial stability.

Most recent contributions regarding the coordination between the two are based on a DSGE (dynamic stochastic general equilibrium) model augmented with financial frictions, which is calibrated or estimated for a particular economy. The authors then simulate the consequences of different policy rules and assignments for economic variables and welfare. Some recent examples are Akinci and Olmstead-Rumsey (2015), Roldán-Peñay, Sámano and Torres (2014) and Bailliu, Meh and Zhang (2012).

The present contribution takes a different tack. It merely aims to raise three practical issues that are often overlooked in the academic literature.

We first discuss, in section 2, the warning signals that macro-prudential policy should be looking at, arguing that real disequilibria could be as important as leverage and large asset price movements. The next section then argues that there might also be conflicts between macro-prudential and monetary policy if the most solvent agents do not react to monetary policy stimuli. Section 4 then argues that the current account should feature as an important concern in macro-prudential policy.



## 2. WHAT TO LOOK OUT FOR

The key warning sign for macro-prudential policy is usually excessive credit expansion, which leads to high leverage. Leverage is the ratio between debt and equity, or more generally the ratio between debt and the capacity to service debt with income. A high degree of leverage is dangerous because it tends to amplify losses. When a borrower cannot service its debt, bankruptcy costs arise, which lead to delays, paralysis and other problems.

In the 'sub-prime' crisis of 2007-08, the canonical example was that of a US household which had bought an over-sized house with no or little money down. Banks were willing to extend these loans in the expectation that house prices would continue to go up. The calculus of lenders was that with house prices increasing, they would not lose even if the borrower were to prove unable to service its debt. This example is less relevant in Europe with its generally full recourse mortgages where the borrower remains responsible for the remaining balance if the value of the house in a forced sale had been insufficient to cover the full mortgage.

In Europe, and especially in Ireland and Spain, the largest losses arose from lending to construction companies and developers whose projects remained unfinished or could not be sold. These sectors had usually operated with high leverage, financed by bank loans on the assumption that the real-estate boom would continue. Contrary to households, developers and construction companies are usually limited-liability entities, and the recovery rates were thus much lower than on delinquent mortgages.

This example shows that leverage becomes relevant when there are losses. But these losses arise in a more pronounced form at the macroeconomic level when real resources have been misallocated. Without a widespread mis-allocation of real resources, financial losses are a zero-sum game within the financial sector and thus easier to deal with.

In other words, house prices can go up or down with little impact on the economy and few implications for financial stability. Serious problems arise mainly when construction is excessive. In the euro area, this could be seen in the different experiences of Spain and France. In both countries, house prices rose by a similar percentage up to 2008, but only Spain experienced a construction – and a financial – crisis. Alcidi and Gros (2012) develop the concept of 'housing overhang', i.e. the excess housing built during a certain period, relative to an historical norm, to estimate the overall losses from a construction boom.

The implication of this consideration is that macro-prudential authorities should not look only at asset prices and leverage, but also for signs of excessive investment in certain sectors (a housing overhang). Moreover, the main macro-prudential tool, namely loan to value ratios for households might not be relevant if the potential losses are elsewhere.

### 3. THE INSUFFICIENT DEMAND CONONDRUM

Expansionary central bank policies are used when demand is judged to be insufficient. Lower interest rates and/or easier credit conditions are supposed to stimulate investment. But what happens if solvent agents refuse to invest and consume at the level necessary for full employment (US after 2001, today?). In this case expansionary policies can work only if insolvent ('Ponzi') borrowers increase spending. This is what happened in the US after 2001. Ponzi borrowers are defined by Minsky (1986) as borrowers who can service their debt only with new debt. A zero interest rate environment, especially with long-term rates close to zero, is of course ideal for Ponzi borrowers because there is essentially no interest rate service that could provide an indication of the solvency of the borrower.

An environment of ultra-low interest rates might thus encourage or enable the marginal borrowers to spend more. But ultra-low interest rates also reduce the spending power of those with a strong asset position, i.e. those agents that are most able to spend more. This is how a conflict between monetary and macro-prudential policy can arise.

Something like this seems to be taking place at present in the euro area: zero interest rates and QE (quantitative easing) have not led to an increase in spending in the core countries. Germany's surplus is actually increasing – perhaps because lower (long-term) rates reduce the investment income of German households. However, governments and households in the periphery, which is already over-indebted, are increasing their spending. This should raise concerns for financial stability should interest rates normalise. These concerns are different from the usual ones during a boom period with 'sub-prime' mortgages for households or 'covenant-lite' loans<sup>1</sup> to firms.

The standard response to any concern about financial stability is that macro prudential policy should be used to ensure financial stability. But a tight macro-prudential policy, which does not allow heavily-indebted agents to further increase their burden, will negate the expansionary effect of monetary policy. With the central bank having a foot on the accelerator, but the regulators and supervisors having a foot on the brake, there might a lot of financial market activity, but little impact on the real economy. Monetary policy then has to stay expansionary for a longer period of time, possibly inciting more Ponzi borrowing/lending.

There is little the ECB can do to solve this conundrum if the most solvent agents in the euro area refuse to spend more. But it should be aware that the effectiveness of its policy might be limited.

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<sup>1</sup> Covenant-lite (or "covenant light") is financial jargon for loan agreements that do not contain the usual protective covenants for the benefit of the lending party. In the wake of the financial crisis of 2007–08 growth in the use of cov-lite loans stalled, but more recently they have increased in popularity again. Covenant-lite lending is seen as riskier because it removes the early warning signs lenders would otherwise receive through traditional covenants.

## 4. BETTER NOT WASTE OTHER PEOPLE'S MONEY

A specific problem for macro-prudential policy in a multi-country currency area is that leverage problems and capital overhangs play out differently in savings surplus countries than in deficit countries. The contrasting experiences of Japan, which always had current-account surpluses, even during its real boom of the late 1980s, and that of Spain today, provide a vivid illustration of this difference.

The key difference is that the sovereign only rarely experiences re-financing problems if the country has a savings surplus because domestic savings tend to have a strong home bias. This applies both to the sovereign (Gros, 2013) and private debt. Domestic bank deposits have tended to remain rather stable (with the exception of Greece) even during the most acute phases of the euro crisis, whereas cross-border deposits were withdrawn en masse at the very beginning of the crisis.

It is thus not surprising that no country that had a current account surplus in 2008 and/or a positive net external-asset position had to endure lasting financial stress – irrespective of the level of its public debt. For example, Belgium, which had at the outset of the crisis a higher (public) debt-to-GDP ratio than Portugal, never experienced serious financial stress and its risk premium has, on average, been over the entire period less than 90 basis points. Portugal, by contrast, had to pay such a high-risk premium that it even lost market access at some point, and had to be bailed out. The reason for this difference is that Belgium had run large current-account surpluses for a long time prior to the crisis, and had thus accumulated a net foreign creditor position of about 50% of GDP, whereas Portugal had run large current account deficits, accumulating a large foreign debt in the process (close to 100% of GDP).

This domestic bias of savings does not imply that booms and busts cannot occur in savings surplus countries, but they play out very differently if the sovereign remains solvent and able to smother the crisis and if banks do not experience deposit flight.

A first implication of this domestic bias of savings is that (national) macro-prudential authorities should take the current account position of their country into account. EU authorities do this already in the context of the Macroeconomic Imbalances Procedure, which should thus be coordinated with the work of the European Systemic Risk Board (ESRB) – there is a large overlap in the risk indicators used.

A second implication is that there is somewhat less need to be concerned with leverage and asset price swings in (external) creditor countries, like Germany and the Netherlands today.

Macro-prudential policy is thus in a certain sense a 'luxury problem', for an excess savings country.

## 5. CONCLUSIONS

The purpose of macro-prudential policy is to avoid financial crisis. One contention of this contribution is that the cost of a crisis is higher when debt which was accumulated during a boom was used to invest in Ponzi projects (= projects without returns that pay for debt service, e.g. excess housing, consumption). A second contention of this contribution is that financial crises are much more severe if the debt is owed to foreigners because savings always have a strong home bias.

One corollary of these two observations is that savings surplus countries are unlikely to have acute financial stability problems as they are unlikely to have excess construction or consumption financed by foreign debt (otherwise they would not have a savings surplus). Macro-prudential policy should thus look not only at financial variables, but also at the current account and investment rates. Hence, there is a case to link the Macroeconomic Imbalances Procedure (MIP) to the work of the ESRB.

A final argument of this contribution is that macro-prudential concerns might reduce the impact of monetary policy, especially at the present juncture. Ultra-low interest rates along the entire maturity spectrum have failed to induce the most solvent agents (those in the savings-surplus countries of the euro area) to spend more. These same low-interest rates seem to have had an impact mainly on the highly indebted agents in the (formerly) deficit countries to spend more, but these are the agents who should run down their debt. The slower the pace of debt reduction in the periphery, the higher the risks for financial stability should interest rates normalise. There is little the ECB can do to escape this conundrum, but it should be aware of the limitations of its policy.

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## NOTES

**DIRECTORATE GENERAL FOR INTERNAL POLICIES**  
**POLICY DEPARTMENT A: ECONOMIC AND SCIENTIFIC POLICY**

# **Interaction between monetary policy and bank regulation**

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## **IN-DEPTH ANALYSIS**

### **Abstract**

The expansion of the central bank's objectives and instruments in the pursuit of financial stability, with greater powers over both macro-prudential policy and micro-prudential supervision has led to a major increase in central bank powers, raising important issues in terms of the coordination of different functions and the design of adequate accountability mechanisms. This paper explores the institutional and governance issues related to the interaction between monetary policy and banking supervision in the light of the establishment of the Single Supervisory Mechanism (with the ECB at the helm) and considers the new macro-prudential function and its interaction both with micro-prudential supervision and with monetary policy (considering the range of conventional and non-conventional instruments adopted by the ECB since 2007). Financial stability considerations permeate throughout the paper.

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## EXECUTIVE SUMMARY

- The ECB is no longer just a price stability oriented monetary authority. With the advent of Banking Union, the ECB has become the key micro supervisory authority in the euro area and it has also been granted some macro-prudential powers in the pursuit of financial stability.
- The contours between macro-prudential policy and micro-prudential supervision are not always clear, since the former relies upon many of the instruments used by the micro-supervisory authorities and other traditional central bank instruments, such as the provision of ELA/LOLR.
- Supervision and crisis management are part of a seamless process, which requires timely communication and coordination between the competent authorities. The ECB is also involved in the resolution process via early intervention measures, thus adding further complexity to the interaction between monetary policy, banking supervision and crisis management.
- The overlap among policy areas and the pursuit of several objectives is a challenge for the ECB in the discharge of its multiple responsibilities.
- The restrictive interpretation by the ECB of the ESCB Statute preventing it from acting as a lender of last resort to individual banks should be revisited.
- The separation between the monetary and the supervisory functions within the ECB is challenging, as the primary law did not envisage a separate decision-making structure for the supervisory activities. This, in turn, poses risk to ECB independence from external pressure.
- Monetary policy has entered uncharted territory following the great financial crisis. While prior to the crisis it had broadly converged toward one with a price stability (inflation) target and a short term interest rate as a policy tool, there is now a 2<sup>nd</sup> variant of monetary policy, which involves varying both the size, and perhaps, the composition of a central bank's balance sheet, with implications for monetary policy and also for financial stability.
- Asset markets – especially the housing market – are not homogeneous throughout the euro area. Thus, while the ECB can, and should, aim for a single euro-wide macro-prudential policy, for the foreseeable future macro-prudential policies should be heterogeneous across markets and countries.
- Responsibility for macro-prudential policy is currently shared between the ECB, national authorities/councils of financial stability and the ESRB.
- The limits of the ECB's authority in the pursuit of financial stability remain open, considering also the interconnection between banking markets and other markets (sovereign debt, derivative, etc.) and the designation of systemically important financial institutions. The role of law and judicial review in the demarcation of such limits also needs further clarification.

# 1. DEFINITIONAL ISSUES

Though the assignment title mentions ‘bank regulation’, this paper deals with the interaction between monetary policy, macro-prudential policy and micro-prudential supervision. From a conceptual point of view the terms supervision and regulation are different.

## 1.1. Banking regulation

Banking regulation refers to the establishment of rules, to the process of rule-making and encompasses a wide range of norms, emanating from national authorities (laws, statutes, statutory instruments), supra-national institutions (at the EU level there is primary law and secondary law, and the ECB also has its own regulatory powers), international entities (often soft law standards like the Basel rules on capital) and self-regulatory organizations.

## 1.2. Banking supervision – micro and macro

The notion of banking supervision is multi-faceted. After the crisis a consensus has emerged that distinguishes between macro-prudential policy and micro-prudential supervision. According to the 2009 House of Lords Report on EU financial regulation and supervision:

‘Macro-prudential supervision is the analysis of trends and imbalances in the financial system and the detection of systemic risks that these trends may pose to financial institutions and the economy. The focus of macro-prudential supervision is the safety of the financial and economic system as a whole – the prevention of the materialization of systemic risk. Micro-prudential supervision is the day-to-day supervision of individual financial institutions. The focus of micro-prudential supervision is the safety and soundness of individual institutions and also consumer protection. The same or a separate supervisor can carry out these two functions. If different supervisors carry out these functions they must work together to provide mechanisms to counteract macro-prudential risks at a micro-prudential level’. (House of Lords, 2009)<sup>1</sup>

Macro-prudential policy, as we explain below, relies upon many of the instruments used by the micro-supervisory authorities as well as other traditional central bank instruments, such as the provision of ELA (Emerging Liquidity Assistance)/LOLR (Lender Of Last Resort).<sup>2</sup>

As regards the nature of micro-prudential supervision, in a broad sense supervision can be understood as a process with four stages or phases: (1) licensing or authorization (entry into the business), (2) supervision *stricto sensu*, (3) sanctioning or imposition of penalties in the case of non-compliance with the law, fraud, bad management, or other types of wrongdoing, and (4) crisis management, which comprises lender of last resort, deposit insurance, resolution and bank insolvency proceedings (Lastra, 2015).<sup>3</sup> The SSM (Single Supervisory Mechanism) regulation<sup>4</sup> deals with (1), (2), (3) and part of (4).

Supervision in a narrow sense (supervision *stricto sensu*) refers to the oversight of financial firms’ behaviour, in particular risk monitoring and risk control, and enforcement. Micro-prudential supervision (the 2<sup>nd</sup> stage of the supervisory process as defined in the preceding

<sup>1</sup> House of Lords’ European Union Committee (2009). “The future of EU financial regulation and supervision”, at <http://www.publications.parliament.uk/pa/ld200809/ldselect/lddeucom/106/106i.pdf>

<sup>2</sup> Ignazio Angeloni, ‘Towards a macro-prudential framework for the single supervisory area’, 20 April 2015, <https://www.bankingsupervision.europa.eu/press/speeches/date/2015/html/se150420.en.html>. “There is virtually no instrument commonly regarded as macro-prudential that cannot, in essence, be used also by the micro-prudential supervisor (...). It is the *logic* of their use and the *scope of application* that are different”.

<sup>3</sup> See Chapter 3 of Rosa Lastra, *International Financial and Monetary Law* (OUP, 2015).

<sup>4</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:287:0063:0089:EN:PDF>

paragraph) is the on-going monitoring and oversight of the health of the banks and the banking system, in particular asset quality, capital adequacy, liquidity, management, internal controls and earnings. This exercise by definition requires judgment, a degree of discretion. According to Principle 1 of the Basle 2012 Core Principles of Banking Supervision, "The primary objective of banking supervision is to promote the safety and soundness of the banks and the banking system. If the banking supervisor is assigned broader responsibilities, these are subordinate to the primary objective and do not conflict with it."

There is a seamless process between supervision and crisis management (comprising lender of last resort, deposit insurance, resolution and bank insolvency proceedings) that requires timely communication and coordination between the relevant competent authorities.

## 2. INSTITUTIONAL AND GOVERNANCE ISSUES

### 2.1. The framework for price stability and financial stability

Central banks, as other institutions, are creatures of their time. A price-stability-oriented independent central bank was a basic tenet in the early 1990s supported by economic theory and empirical evidence which became embedded in the Maastricht Treaty and widely accepted in the developed and developing World. This explains why price stability is unambiguously mentioned in Art 127(1) TFEU as the primary objective of the ESCB while the tenuous reference to financial stability in Art 127(5) TFEU indicates the hesitant tone of the treaty drafters in giving this goal equal footing to the goal of price stability (“The ESCB shall contribute to the smooth conduct of policies pursued by the competent authorities relating to the prudential supervision of credit institutions and the stability of the financial system”). The enabling clause advocated by Tommaso Padoa-Schioppa auspiciously found its way in the final text of the Treaty - Art. 127(6), thus providing a Treaty basis for the SSM. Times have changed after the crisis and though in practice the primary objective of central banking has become financial stability (also for the ECB) (Buiter, 2015),<sup>5</sup> the Treaty remains unaltered.

Functionally when it was created the ECB resembled the ‘Bundesbank model’ of one agency (the central bank), one primary objective (price stability) and one main instrument (monetary policy), in line with the Tinbergen rule. This relative simplicity (one goal, one instrument, one authority) in the pursuit of monetary stability contrasts with the multiplicity and complexity that characterize the pursuit of financial stability and the conduct of central banking in the aftermath of the global financial crisis.

Financial stability co-exists with other goals (such as price stability, growth, employment, consumer protection); there are multiple instruments to achieve this goal (supervision, regulation, lender of last resort/ELA, resolution and crisis management, monetary policy, fiscal policy etc.) and the central bank shares responsibility for maintaining financial stability with other authorities at different levels of governance (national, European and international).<sup>6</sup> Financial stability (systemic risk control) is a goal that transcends geographic boundaries and institutional mandates. But the very definition of financial stability remains a matter of controversy.

The Dodd Frank Act 2010 in the USA reinforced the financial stability mandate of the Federal Reserve System (the overriding objective) and the law governing the Bank of England in the UK has also been revised to reflect the twin mandate of monetary stability and financial stability. At the EU level, while the hierarchy of objectives remains (price stability reigns supreme in the Treaty), the mandate of the ECB has been substantially expanded via secondary legislation (the SSM regulation and ensuing normative) into the field of prudential supervision.

The ECB is no longer just a monetary agency. Since November 2014, the ECB is the key supervisory authority for credit institutions in the euro area. The ECB has also some macro-

<sup>5</sup> See Willem H. Buiter at <http://willembuiter.com/sintra.pdf>

<sup>6</sup> The Financial Stability Oversight Council (FSOC) in the US is a good example of the multiple authorities involved in the pursuit of financial stability. The FSOC is made up of ten voting members under the chairmanship of the Secretary of the Treasury (the other nine members are the Chairman of the Board of Governors of the Federal Reserve System, the Comptroller of the Currency, the Director of the Bureau of Consumer Financial Protection, the Chair of the SEC, the Chair of the Commodity Futures Trading Commission, the Chair of FDIC, the Chair of the Federal Housing Finance Agency, the chair of the National Credit Union Administration, and an independent member with insurance expertise) and five nonvoting members.

prudential powers, according to Article 5 of the SSM Regulation, as we further discuss below. And the ECB is also involved in the pre-insolvency phase in resolution.

## 2.2. Supervision and resolution

Early intervention (in the context of the SSM regulation) comprises actions taken before the threshold conditions for resolution are met, and before the institution is insolvent or likely to become insolvent. The boundaries between supervision at the 'end of the supervisory spectrum', early intervention/PCA, recovery and resolution are not always clear. Given its role as micro-prudential supervisor with powers for early intervention, the ECB is likely to play a major role in the commencement of resolution proceedings. This imposes an additional challenge.

According to Art 4.1 (i) of the SSM Regulation the ECB is empowered:

"To carry out supervisory tasks in relation to recovery plans, and early intervention where a credit institution or group in relation to which the ECB is the consolidating supervisor, does not meet or is likely to breach the applicable prudential requirements, and, only in the cases explicitly stipulated by relevant Union law for competent authorities, structural changes required from credit institutions to prevent financial stress or failure, excluding any resolution powers."

## 2.3. Legitimacy and accountability

These developments signify a major expansion of the ECB powers. And with power, mindful of Lord Acton's dictum, comes responsibility, accountability and limits. Central banks as technocratic institutions need to act within the limits of their legal mandate (a mandate that provides 'formal legitimacy').

Amendments to the Treaty are notoriously difficult. Thus, a combination of the art of legal interpretation - stretching the limits and opportunities the Treaty provides - and political realities and compromises have provided the way forward in the construct of the new design in which a number of functions have been transferred to the ECB. There are of course limits to compromises, since 'societal legitimacy' is essential for the long-term survival of any rules, whether they be laws, treaties or constitutions ('formal legitimacy').

## 2.4. The new financial architecture

The twin financial and sovereign debt crises in Europe have evidenced the weakness of the euro's institutional design, given the asymmetry between a centralized monetary policy and decentralized fiscal policies (the strong M and weak E of EMU). The first wave of responses to the financial crisis led to the establishment of the European System of Financial Supervision, with the European Supervisory Authorities (ESAs) and the European Systemic Risk Board (ESRB). These 2010 innovations under de Larosi re reform, introduced for the single market/EU three silos of coordination of the financial sector (European Banking Authority (EBA), European Securities and Markets Authority (ESMA) and European Insurance and Occupational Pensions Authority (EIOPA)) with some override powers over national supervisors, albeit still relying upon the principles of decentralisation or national competence and segmentation. However, as the financial crisis turned into a sovereign debt crisis in some euro area Member States and the very survival of the euro was questioned, in 2012 the European approved a bold project of centralization of bank supervisory responsibility: a 'banking union' for the euro area.<sup>7</sup>

<sup>7</sup> The name 'banking union' is a bit of a conceptual accordion, with different layers. Arguably, the first layer of a banking union has already been achieved via European regulation, namely the Directives and Regulations that form the corpus of common rules under which banks operate in the EU/European Economic Area "EEA". Of course,

Banking Union consists of three pillars. While the first pillar of Banking Union, 'single supervision' has already been completed with the establishment of the Single Supervisory Mechanism (SSM), the second pillar, 'single resolution', with the Single Resolution Mechanism (SRM) - aligned with the EU Bank Recovery and Resolution Directive (BRRD) - and a Single Resolution Fund, is still in the process of being implemented. The third pillar, 'common deposit protection', is yet to be constructed. Furthermore, a fourth missing pillar, namely the lender of last resort function, requires further clarification (as we discuss below).

After these two major sets of reforms, the financial architecture of Europe is now rather complex both jurisdictionally and structurally. The jurisdictional domain of the ESAs and ESRB is the whole EU/single market, while the jurisdictional domain of the SSM is restricted to the euro area and those countries that adopt close cooperation agreements with the ECB. The structure of supervision is now divided between centralized powers in banking and decentralization and segmentation in other areas of the financial sector. This will require the ECB/SSM to cooperate very closely with national securities and insurance regulators (further discussed in section 3.2).

In the context of the current institutional set-up one and the need for adequate accountability one should ask:

- a) How can the ECB balance the pursuit of several objectives (price stability and financial stability) in the light of TFEU?
- b) How will the ECB monetary policy responsibilities affect the complicated interaction between supervision and resolution?

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this first layer, this 'narrow' banking union, was incomplete—as evidenced by the financial crisis—due to the lack of effective rules on cross-border crisis management and insolvency. See Lastra, 2015, Chapter 10.

### 3. MONETARY POLICY AND MACRO-PRUDENTIAL POLICY

#### 3.1. Monetary policy before and after the GFC

Prior to the Great Financial Crisis (GFC) the framework of monetary policy had broadly converged towards one with a price stability (inflation) target and a short-term interest rate as a policy tool. In this context the size of commercial bank reserves held at the Central Bank was determined by the demand for such reserve balances by the banking system, given the interest rate set by the ECB and any regulations on required cash reserve holdings. There were still issues about which assets the ECB might buy, or more commonly lend against, in its Refinancing Operations, since this would affect the pattern of rates in, and structure of, money markets and also the portfolio preference among commercial banks for different (short-term) assets. But this was generally perceived as a largely technical issue, of second-order public policy importance.

Once, however, interest rates had reached the zero lower bound (ZLB), this context changed quite dramatically. Once at the ZLB, interest rates could not be lowered too far into negative territory, (because of the available alternative of holding currency), but the size of a Central Bank's balance sheet could then be expanded, without any clear limit, and was so by most Developed Markets (DM) Central Banks, notably by Quantitative Easing (QE).

This raises some new problems for Central Banks when normalisation (to some positive level of interest rates) eventually occurs. Thus there will now be two alternative methods of tightening policy. The first will be to raise the level of official short rates, including essentially the rate payable on commercial bank deposits at the ECB, while keeping the ECB's balance sheet size unchanged. The second will be to sell ECB asset holdings back into the market (or let them run off at maturity without replacement), while keeping the pattern of official short-term rates unchanged. Of course the policies can be used in a combined form, but for analytical purposes, it is better to regard these as distinct.

One presumes that the choice between these policies will affect, at least to some degree the following:

- a) The shape of the yield curve.
- b) The seignorage profitability of the ECB.
- c) The volume of reserves held by commercial banks and the structure of their asset portfolio.

This raises a number of questions which need to be answered, especially by Central Banks such as the ECB:

- 1) How much difference will this policy choice make to the slope and shape of the yield curve?
- 2) What principles should be adopted for choosing between those policies?
- 3) How much attention should be paid to the effects of that choice on the ECB's seignorage profitability?
- 4) What should be the optimal size of commercial bank reserve holding at the ECB? How far should intra-bank surplus/deficits be settled over the books of the ECB rather than through money markets?



So there is now a second variant of monetary policy, that is changing the size of the ECB's balance sheet, while keeping official rates constant. But there is now also a second, rediscovered, policy objective, financial stability. Given the Tinbergen principle (i.e., that a controlling authority needs as many instruments as it has objectives to operate most efficiently), this has led to a search for a second set of instruments, which have been generically described as macro-prudential instruments. One major problem is that such macro-pru measures are generally not separate from, but overlap with, both monetary policy and micro-prudential instruments.

Thus Sir Jon Cunliffe recently (28 July) stated that there needs to be:

“a recognition that what distinguishes ‘macroprudential’ from ‘macroeconomic’ is its objective of financial system stability rather than the instruments it deploys. Macroprudential authorities like the FPC use many of the same instruments as microprudential regulators such as bank capital standards. And in the very final resort, monetary policy may need to be used to counter financial stability risk. But the objective of ensuring the financial system as a whole is stable is different to the objective of promoting the safety and soundness of individual firms or that inflation is kept at target.”

What makes this problem even more difficult in the euro area is that financial stability concerns frequently arise from the interaction of asset markets and the banking system, wherein the key asset markets, especially the housing market, are not homogeneous throughout the euro area, but disparate, even within countries.<sup>8</sup> So while the ECB can, and should, aim for a single euro-wide macro-prudential policy, it would seem, at least for the foreseeable future, that macro-pru policies should be heterogeneous and distinct both across markets and across countries/regions.

### 3.2. Responsibility for macro-prudential policy

This raises the (constitutional/structural) issue of which bodies should be responsible for macro-pru within the euro area. Up until the end of 2014, the structural arrangements within the EU were, according to the EBA Report (July 2015), ‘On the Range of Practices Regarding Macroprudential Measures Communicated to the EBA’, as follows:

- a) The ESRB provided general analytical advice;
- b) The competent (or designated) authority within each Member State took the actual decisions whether, and what, macro-prudential measures to apply;
- c) The EBA attempted to coordinate.

But now the situation has changed.<sup>9</sup> Given its new role in the SSM, the ECB has direct responsibility for monetary policy and ultimate responsibility for micro-prudential

<sup>8</sup> For a recent study on macro-prudential tools (mostly in the real estate sector), see IMF Working Paper 15/123 on ‘Experiences with Macroprudential Policy – Five Case Studies’ by Salim M. Darbar and Xiaoyong Wu at <http://www.imf.org/external/pubs/ft/wp/2015/wp15123.pdf>

<sup>9</sup> This is indicated from the following quotation from the same EBA Report (pp 25/26): “Given that the ECB took over its supervisory role for SSM countries at the end of 2014, it is not surprising that over the period in scope of this report notifications were received from national competent or designated authorities only. Based on Art. 5 of the SSM Regulation [Council Regulation (EU) No. 1024/2013] the ECB has binding macroprudential competences for articles in scope of the CRR/CRD. It can apply higher requirements for capital buffers than those applied by national competent or designated authorities and apply more stringent measures aimed at addressing systemic or macroprudential risks. Some questions arising from the ECB's role and the observations made regarding first notifications are the following:

- Process requirements, e.g. regarding notifications and consultations, should hold in the same way for the ECB as for national authorities. Art. 5 of the SSM Regulation also requires that, in a separate notification, the ECB should be informed in advance of national macroprudential measures that fall under the CRR/CRD.



supervision. So it must, surely, take a leading role in setting macro-pru which lies in between, but exactly what role? There are a range of unanswered questions:

- What does the ECB see as its future responsibilities for setting macro-prudential instruments?
- What will be the division of responsibility between the ECB and member state authorities for varying macro-prudential instruments? What will happen if they should disagree? Will each have a veto, or does the final decision then go somewhere else, e.g. Ecofin?
- The ECB can, and will, do its own analysis of the need of macro-prudential supervision and seek to manage coordination among member states. What role, if any, is then left for the ESRB and EBA in this respect? [NB This is *not* a proper question for the ECB to answer. It should be posed to the EC instead.]

Responsibility for macro-prudential supervision is thus currently shared between the ECB, national authorities/councils of financial stability<sup>10</sup> and the ESRB (though the latter's 'powers' are limited).<sup>11</sup>

Besides questions relating to the appropriate allocation of powers for macro-prudential supervision, there are also now a series of questions relating to the ambit of such measures, especially perhaps when undertaken by an unelected Central Bank within a community of sovereign member states. Central Banks have historically been responsible for setting, and adjusting, regulations over the banking system, but should they have the same role in other financial markets? This arises with particular relevance in the housing market. Of the 32 macro-prudential measures reported to the EBA, half related to real estate (op cit Table 2, p. 13). Most of these related to the way in which *banks* should treat mortgage finance, e.g. add-ons for risk weights. Does the proper dividing line occur between macro-prudential measures, such as requiring a change in loan-to-value (LTV) or loan-to-income (LTI) ratios, to be imposed on banks only, or on all sources of mortgage finance? If the former, does not this risk greater disintermediation? If the latter, does not this take the ECB too far into interference with other, politically sensitive, markets?

Much the same issue arises with the question of whether, and which, non-bank financial intermediaries might be designated as 'systemically important financial institutions' (SIFIs).<sup>12</sup> Should Central Banks, notably the ECB, impose and adjust regulations on some,

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- The need for coordination across microprudential and macroprudential authorities will include the ECB, in particular as competent authority for all SSM banks. The output of the ECB's macroprudential activities related to Art. 5 of the SSM Regulation are communicated and shared with the NCAs through several committees and finally up to the SSM Supervisory Board. In this way these measures are communicated within the SSM at an early stage.
  - Regarding the use of Pillar 2 for macroprudential purposes, the same coordination issues arise as described above but with a more complex governance structure and with potentially less widespread effects, in that an SSM-wide decision using Art. 103 CRD could at least ensure consistency between SSM participating countries. Hence, coordination issues would be relevant mainly between SSM and non-SSM countries but would also take advantage of the more integrated governance structure offered by the SSM."

<sup>10</sup> The CRD IV/CRR includes a number of macro-prudential instruments, such as counter-cyclical capital buffers, systemic risk, buffers for global systemically important institutions (G-SII) and other systemically important institutions (O-SII).

<sup>11</sup> Angeloni (2015) "Country specific risks are better addressed at an early stage by national macro prudential measures (...). This justifies the fact that in the euro area financial architecture macro prudential policy is a shared competence between national and European authorities. (...) Several member states have introduced measures to address excessive credit growth mainly related to mortgage lending...such as caps on loan-to-value ratios."

<sup>12</sup> The ECB competence vis-à-vis non-bank financial institutions was analysed in *United Kingdom v ECB*, Case T-496/11. The ECB was challenged for its attempt to adopt a broad interpretation of its own mandate and for adopting a policy that required the CCPs clearing euro-denominated securities beyond certain threshold to be located within the euro area ('location policy'). The Court rejected such broad interpretation and annulled the

i.e. the biggest, or all insurance companies and wealth management companies, for example, in pursuit of financial stability? What are, or should be, the limits on a Central Bank's powers to intervene in the operations of non-bank financial intermediaries for this purpose? The question is currently being raised in several arenas, e.g. Met Life's court case in protest against its SIFI designation in the USA, but no generic answers have yet been forthcoming.

### 3.3. Central bank's authority in the pursuit of financial stability

This question of what should be the limits a Central Bank's proper authority in pursuit of financial stability goes much wider yet. The structure and risk management of many financial markets, e.g. sovereign debt, derivative, money market, etc., is clearly crucial for financial stability. Should Central Banks have primary, or partial, responsibility for setting such market risk-management conditions and requirements, and, if so, in which markets; should this include corporate debt and equity markets, for example?

Again during the GFC several financial markets became dysfunctional, with a marked adverse effect on financial stability and on the transmission mechanism of monetary policy. How far is a Central Bank then justified in becoming the 'market maker of last resort',<sup>13</sup> to use W. Buiter's phrase, as in the case, for example, of credit easing in the USA (to support the mortgage market) or Outright Monetary Transactions (OMT) in the case of the ECB?

The concept that Central Banks should only hold government debt on their balance sheets is patently incorrect. Historically, e.g. in the 19<sup>th</sup> century, Central Banks mainly operated in private sector commercial bills. Whereas government debt is generally less risky than private sector debt, it is not completely riskless, (n.b. Greece, Puerto Rico, etc.). Nevertheless should Central Banks generally seek some agreement (and perhaps indemnification) from the fiscal authorities before embarking on sizeable purchases of private sector assets, as the Bank of England did when initiating QE? But, even if this was desirable, how could it be done in the euro area where the ECB has no single fiscal counterpart?

There is a misleading, but commonly used, phrase about some Central Bank operations having 'quasi-fiscal' effects. All Central Bank operations on their balance sheet, and to affect the level and pattern of interest rates, have fiscal implications, perhaps especially the most traditional open market operations in Treasury Bills to adjust the official short-term interest rate. But there is now, following on from the post-GFC allocation of responsibility for financial stability, and for the manipulation of micro and macro-prudential instruments, a far wider allocation of non-traditional operational functions to Central Banks. It has been akin to the opening of Pandora's Box.

The fundamental question raised here is whether any clear limit to such non-traditional functions can be applied? These issues have so far for the most part been treated pragmatically, 'whatever is necessary'. Pragmatism, and the accretion of good practice into a form of common law, has much to commend it, and is in accord with the Anglo-Saxon tradition. But can any generic principles, basic rules, be obtained to set the limits for Central Bank (macro-prudential) operations in pursuit of financial stability?

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location policy. It also stated that if the ECB considers the power to regulate CCPs to be necessary to perform its basic tasks, then it should request the EU legislature to include an explicit reference to securities clearing into the statute.

<sup>13</sup> Ludek Niedermayer's paper, 'Greek lessons for central banks acting as lenders of last resort' (at <http://www.niedermayer.cz/uvod/articles/187>) questions whether it is appropriate for a central bank that acts as lead financial supervisor, like the ECB, to act as LOLR at a time when its actions are becoming quasi-fiscal in nature.

## 4. CHALLENGES FACED BY THE ECB MONETARY POLICY IN THE CURRENT GOVERNANCE FRAMEWORK FOR FINANCIAL REGULATION AND SUPERVISION

### 4.1. Complementarity or separation of central banking functions

While the Fed and the Bank of England have emphasized the complementarity between monetary policy, macro-prudential policy, lender of last resort and micro-prudential supervision, the ECB on the other hand has highlighted the separation between monetary policy and banking supervision in a Decision of 17 September 2014, in accordance with Article 25(2) of the SSM Regulation.<sup>14</sup> However, the reality of central banking is one of complementarity of functions, which explains why they are placed under the same roof; if one wants to have the functions truly separate, then assign them to different entities.<sup>15</sup>

The Fed conceives of its monetary policy as having been largely grafted onto its stabilization and supervisory functions, and regards such functions as a prerequisite and complement of its monetary policy responsibilities.<sup>16</sup> In the UK, the Bank of England launched its One Bank – One Mission strategic plan in March 2015 stressing the links between the 3Ms: Monetary policy, macro-prudential and micro-prudential supervision.<sup>17</sup>

“Monetary policy not only affects inflation rates, but the price (and thus the amount) of risk taking. An excessively accommodating Federal Reserve convinced actors that they would be saved from their folly (the famous ‘Greenspan put’) and led to excessive risk taking. Thus, those in charge of monetary policy need to know the amount of risk and instability in the system. Moreover, the absence of stable prices harms the stability of the financial system, while financial fragility in turn, negatively affects monetary stability.”<sup>18</sup>

Conflicts of interest between monetary policy and banking supervision are of course possible, but there are ways to solve or mitigate them. The SSM Regulation establishes a mediation panel to deal with such conflicts.<sup>19</sup>

<sup>14</sup> Article 25(2) SSM Regulation: “The ECB shall carry out the tasks conferred on it by this Regulation without prejudice to and separately from its tasks relating to monetary policy and any other tasks. The tasks conferred on the ECB by this Regulation shall neither interfere with, nor be determined by, its tasks relating to monetary policy. The tasks conferred on the ECB by this Regulation shall moreover not interfere with its tasks in relation to the ESRB or any other tasks.”

<sup>15</sup> On the subject of separation between monetary policy and supervision the seminal article by Charles Goodhart and Drik Schoenmaker, ‘Should the Functions of Monetary Policy and Banking Supervision be Separated?’ (1995) Oxford University Papers, Vol. 47, No. 4, 539-560, summarizes the pros and cons.

<sup>16</sup> In a presentation to the Legal Committee of the ECB by the General Counsel of the Federal Reserve Bank of New York on 11 December 2014, Thomas Baxter explained his personal view that there is complementarity rather than conflict between the supervisory policy and monetary policy functions. In his experience, having direct, front line information on the condition of the banking system can enhance the conduct of monetary policy. Similarly, access to information on the condition of the economy may, in turn, assist in the development of supervisory policies and procedures, such as stress testing. He further added that bank supervisory information may be useful for evaluating economic conditions that could have financial stability implications. For example, an ailing banking sector may signal emerging weakness such as poor credit underwriting that could be the harbinger of larger problems. One of the lessons learned in the financial crisis is that effective supervision must address macro-prudential risks.

<sup>17</sup> <http://www.bankofengland.co.uk/about/Pages/strategicplan/default.aspx>

<sup>18</sup> See Luis Garicano and Rosa M Lastra, ‘Towards a new Architecture for Financial Stability: Seven Principles’, *Journal of International Economic Law*, Vol. 13, No. 3, September 2010, p. 610. “Of course, extracting synergies never comes without organizational costs. One key problem with combining tasks has to do with the difficulty in providing adequate incentives and measurement on the stability task.”

<sup>19</sup> Article 25(5) of the SSM Regulation: “With a view to ensuring separation between monetary policy and supervisory tasks, the ECB shall create a mediation panel. This panel shall resolve differences of views expressed by the competent authorities of participating Member States concerned regarding an objection of the Governing Council to a draft decision by the Supervisory Board.”

## 4.2. Lender of last resort

LOLR/ELA links monetary policy and supervision. Only the ultimate supplier of money can provide the necessary stabilizing function in a nationwide scramble for liquidity, as the financial crisis amply demonstrated, with conventional and non-conventional monetary policy measures. As evidenced by the Northern Rock crisis in the UK, which caught the Bank of England by surprise, having timely information is particularly crucial during financial crises and the best way to ensure access is to have daily supervision by the central bank, as the literature has noted. Assistance on a rainy day requires surveillance on a sunny day.<sup>20</sup> The ECB provides market liquidity (Art. 18 ESCB Statute) and support of the payment system (Art. 127(2) TFEU). But when it comes to individual liquidity assistance to illiquid but solvent institutions, national central banks (NCBs) provide such assistance subject of course to a number of procedures, and the risks and costs arising from such provision are incurred by the relevant NCB. This is due to the ECB's own restrictive interpretation of Article 14.4 of the ESCB Statute, which was reiterated by the ECB in a clarification of ELA procedures on 17 October 2013.<sup>21</sup>

The question arises: Is it appropriate to keep such arrangement when de facto, only the ECB can provide emergency liquidity assistance to the institutions that it now supervises? Moreover, when no treaty amendment is needed to establish the missing fourth pillar of banking union, but merely a change in interpretation, is it practical to follow the existing practice?

## 4.3. Governance issues

The decision-making structures of the ECB were designed primarily for monetary policy and this poses challenges with regard to the actual conduct of supervision, Entrusting the ECB with banking supervision under the so-called 'enabling clause', Article 127(6) TFEU, required embedding a sufficiently 'insulated' supervisory decision-making structure under the existing Treaty provisions. The Supervisory Board established by the SSM Regulation is a creature of secondary law while both the Executive Board and the Governing Council are creatures of primary law, established by the Maastricht Treaty and the main decision making bodies of the ECB. This of course creates a subordination in terms of the governance of the SSM<sup>22</sup> despite the organizational separation established in the SSM

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According to Article 32(1) of the SSM Regulation The European Commission is due to evaluate by the end of 2015 the effectiveness of the separation between supervisory and monetary policy functions within the ECB.

<sup>20</sup> The Commission 'Banking Communication' of July 2013 on state aid support measures for banks <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52013XC0730%2801%29&from=EN> states in Paragraph 62: The ordinary activities of central banks related to monetary policy, such as open market operations and standing facilities, do not fall within the scope of the State aid rules. Dedicated support to a specific institution (commonly referred to as 'emergency liquidity assistance') may constitute state aid rules unless the following cumulative conditions are met:

- (a) the credit institution is temporarily illiquid but solvent...
- (b) the facility is fully secured by collateral...
- (c) the central bank charges a penal interest rate...
- (d) the measure is taken at the central bank's own initiative, and in particular is not backed by any counter-guarantee of the state.

<sup>21</sup> [https://www.ecb.europa.eu/pub/pdf/other/201402\\_elaprocedures.en.pdf?e716d1d560392b10142724f50c6bf66a](https://www.ecb.europa.eu/pub/pdf/other/201402_elaprocedures.en.pdf?e716d1d560392b10142724f50c6bf66a)

<sup>22</sup> Article 26(5) of the SSM Regulation prohibits appointing the ECB representatives who perform duties directly related to monetary function of the ECB, to the Supervisory Board.

regulation.<sup>23</sup> The 'non-objection' procedure gives the Governing Council the upper hand as it can reject (object to) a decision prepared by the Supervisory Board.<sup>24</sup>

#### 4.4. Judicial review and accountability issues

While the domain of monetary policy has a clear primary law (treaty) basis, the domain of supervision is subject to secondary law. The Treaty says almost nothing about the domain of supervision and what it says is somewhat dated - like the omission of insurance undertakings in Article 127(6). This has important implications in the jurisprudence of the Court of Justice of the European Union. And lest we forget: Supervision is resource and personnel intensive, litigious, prone to reputational damage; generally a 'thankless task' in which failures are magnified and success are often hidden.

The contours of Article 18 of the ESCB Statute (on open market and credit operations) are rather broad, which has allowed the ECB to conduct a large array of conventional and non-conventional measures of monetary policy since 2007.<sup>25</sup> This broad mandate notwithstanding, the OMT Case (ECJ - Outright Monetary Transactions programme, Case C-62/14 - German Constitutional Court referral for CJEU for preliminary ruling questions the compatibility of the programme with the Treaty) has cast some light on the domain of monetary policy and on the willingness of the ECJ judges to engage with economic theory and evidence and, wherever necessary, to defer to the discretion of the ECB. According to the Advocate General's opinion, the ECB must have a broad discretion when framing and implementing the EU's monetary policy, and the courts must exercise a considerable degree of caution when reviewing the ECB's activity, since they lack the expertise and experience which the ECB has in this area. The ECB mandate does require limits, and since only the ECJ can judge the ECB, it is important for the Court to carefully delineate such limits. Furthermore, while judicial review of monetary policy measures might be limited, the same cannot be said with regard to the review of supervisory decisions (actions or omissions).

How much law is needed in the exercise and review of monetary policy decisions? What is the difference between a monetary policy measure and an economic policy measure (fiscal measure) and should the ECJ have a role in determining the parameters?

The new supervisory tasks also pose a challenge to the independence of the ECB, since the wider the role of the central bank, the more it is likely to become susceptible to political pressures, in particular in matters as sensitive to Member States as the functioning of the

<sup>23</sup> Separation at the organisational level, including staff (art. 28 SSM Regulation), exchange of information and professional secrecy (arts. 25(2) and 27) and resources (arts. 29 and 30).

<sup>24</sup> Article 26(8) of the SSM Regulation states: 'If the Governing Council of the ECB objects to a draft decision of a Supervisory Board, the reasons for the objection, in particular monetary policy concerns, must be clearly stated'.

<sup>25</sup> The list of non conventional measures adopted by the ECB since 2007 is long, comprising in chronological order: credit easing and amendments to the General Documentation in 2007 (<http://www.ecb.europa.eu/press/govcdec/otherdec/2007/html/gc071026.en.html>); swap arrangements with the Federal Reserve Bank of New York in 2008 (see <http://www.ecb.europa.eu/press/govcdec/otherdec/2008/html/gc080111.en.html>) and relaxation of collateral requirements (<https://www.ecb.europa.eu/press/pr/date/2008/html/pr081015.en.html>); Enhanced Credit Support (see Monthly Bulletin, June 2009, p.9-10) and covered bonds purchase programme in 2009 (<http://www.ecb.europa.eu/pub/pdf/mobu/mb200906en.pdf>); Securities Markets Programme in 2010 (see [https://www.ecb.europa.eu/ecb/legal/pdf/L\\_12420100520en00080009.pdf](https://www.ecb.europa.eu/ecb/legal/pdf/L_12420100520en00080009.pdf)); LTRO or Long term refinancing operations in December 2011 and February 2012 ([http://www.ecb.europa.eu/mopo/pdf/mb201201en\\_box4.pdf?388e30a8c509bdb462e4ef995c16e413](http://www.ecb.europa.eu/mopo/pdf/mb201201en_box4.pdf?388e30a8c509bdb462e4ef995c16e413)); Outright Monetary Transactions in August 2012 (see the press release of 6 September 2012, Monthly Bulletin, Oct 2012 and Introductory Statement by the ECB in the proceedings before the Federal Constitutional Court); forward guidance in July 2013 (see <https://www.ecb.europa.eu/press/key/date/2013/html/sp130806.en.html>); negative interest rates 2014 (see <http://www.ecb.europa.eu/press/pr/date/2014/html/pr140605.en.html>) and Quantitative Easing, in Jan 2015 ([https://www.ecb.europa.eu/press/pr/date/2015/html/pr150122\\_1.en.html](https://www.ecb.europa.eu/press/pr/date/2015/html/pr150122_1.en.html))

banking system. The general principle of independence of the ECB's supervisory arm is articulated in Article 19(1) of the SSM Regulation,<sup>26</sup> which is written in similar terms to the general principle of ECB independence (enshrined Art 130 TFEU and Art 7 of the ESCB statute). However, supervisory independence is not the same as monetary independence due to the difference with regard to goals, means/instruments, personnel and the very nature of supervisory work (confidentiality, etc).<sup>27</sup> And supervisory accountability is not the same as monetary accountability, given the involvement of national authorities in the exercise of some supervisory responsibilities as well as resolution and bank recapitalization.<sup>28</sup>

Inevitably we shall see an increasing number of cases seeking to challenge the ECB before the ECJ. And one should ask:

- a) How to make sure that supervisory accountability does not undermine the ECB's independence in general?
- b) Is the ECB expected to consider the effects of its monetary policy decisions upon the supervisory and resolution process without violating the internal separation between its monetary and supervisory functions?

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<sup>26</sup> Article 19.1 of the SSM Regulation stipulates that "The members of the Supervisory Board and the steering committee shall act independently and objectively in the interest of the Union as a whole and shall neither seek nor take instructions from the institutions or bodies of the Union, from any government of a Member State or from any other public or private body."

<sup>27</sup> See Lastra, *International Financial and Monetary Law* (OUP 2015), chapters 2 and 3.

<sup>28</sup> The ECB is accountable to the European Parliament and the Council for the implementation of the separation (SSM Regulation, art. 25(2)) and for the implementation of the SSM Regulation in general (art. 20). Article 20 of the SSM Regulation sets out the ECB accountability for its banking supervisory mandate similarly to the ECB accountability for its monetary policy mandate. The new role of the national parliaments - introduced into the Lisbon Treaty - is also reflected in Article 21 SSM Regulation.



## 5. CONCLUSIONS

The ECB was set up in 1999 as a monetary agency with a primary objective, price stability, clearly anchored in the Treaty (Article 127(1) TFEU). After the GFC financial stability has been rediscovered as a key policy objective for central banks, though its definition is still subject to controversy. This justifies the range of non-standard monetary measures adopted by the ECB since 2007 in the euro area as well as the establishment of European Banking Union. The multiplicity of equally ranking objectives was not envisaged at the time the ECB was established.

When discussing the interaction between monetary policy and banking regulation, it is important to realise that regulation refers to the rule-making process, while the key challenge for the ECB is to understand the interaction between monetary policy, macro-prudential policy, micro-prudential supervision and resolution. The ECB is now the key supervisory authority in the euro area/SSM. Supervision is both micro and macro, but responsibility for the latter is shared with the ESRB and national authorities. Macro-prudential measures sit in-between monetary policy and micro-supervision.

The banking system is strongly linked to financial markets and other non-bank SIFIs. This gives grounds for discussion about the limits of the ECB's macro-prudential powers as well as measures and instruments that can be used in the pursuit of financial stability and cooperation with other supervisory authorities.

Not until the post-GFC normalisation of monetary policy occurs, will we be able to determine whether the new framework that relies upon the expansion of the balance sheet of the ECB has been effective in securing financial stability without undermining the primary objective of price stability. The Federal Open Market Committee (FOMC) in the USA has just now, in an addendum to its July minutes, mandated a study of monetary policy procedures in the post-GFC framework.<sup>29</sup> Perhaps the ECB might undertake a similar exercise.

Unlike other central banks the ECB has highlighted the separation between monetary policy and banking supervision within its institutional structure. But the benefits of having different functions housed within the central bank cannot be ignored. LOLR/ELA links monetary policy and supervision. The ECB's own restrictive interpretation of the ESCB Statute that prevents it from acting as a LOLR to individual institutions should, perhaps, change with banking union.

The widening of the ECB's mandate poses a challenge to the independence of the institution itself, as it is more likely to become subject to external pressure especially when it comes to banking supervision and the pre-resolution phase.

Attempts to stretch further the limits of the existing legal framework in the pursuit of financial stability might raise questions about the legitimacy of such actions. Legitimacy and accountability are of paramount importance when dealing with unelected technocratic institutions like independent central banks.

<sup>29</sup> <http://www.federalreserve.gov/monetarypolicy/fomcminutes20150729.htm>

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**DIRECTORATE GENERAL FOR INTERNAL POLICIES**  
**POLICY DEPARTMENT A: ECONOMIC AND SCIENTIFIC POLICY**

# **The interaction between monetary policy and macro-prudential policies: challenges faced by the ECB**

**Angel UBIDE**

## **IN-DEPTH ANALYSIS**

### **Abstract**

One of the main lessons from the global financial crisis is that price stability is not sufficient to guarantee financial stability. The mandate of monetary policy is to ensure price stability in the real economy, and doesn't include, and should not include, addressing potential instability in financial markets. Financial stability should be the remit of macro-prudential policy, with the objective of safeguarding the stability of the financial system and containing systemic risk. The ECB is very likely going to have to keep interest rates at zero for several years in order to fulfil its price stability mandate, and therefore it is critical its policy action is complemented by effective, preemptive and coordinated macro-prudential policies. However, the macro-prudential framework of the euro area is fragile, especially on the borrower side, and its legal basis should be strengthened, especially within the Single Supervisory Mechanism area.

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## EXECUTIVE SUMMARY

One of the main lessons from the global financial crisis is that price stability is not sufficient to guarantee financial stability. The mandate of monetary policy is to ensure price stability in the real economy, and doesn't include, and should not include, addressing potential instability in financial markets. Financial stability should be the remit of macro-prudential policy, with the objective of safeguarding the stability of the financial system and containing systemic risk.

The ECB is very likely going to have to keep interest rates at zero for several years in order to fulfill its price stability mandate, and therefore it is critical its policy action is complemented by effective, preemptive and coordinated macro-prudential policies. However, the macro-prudential framework of the euro area is fragile, especially on the borrower side, and its legal basis should be strengthened, especially within the SSM area.

This could be achieved via both institutional change and legislative change. On the institutional side, it would be important to harmonize the structure of macro-prudential institutions across the member states and to consolidate them into a European System of Macro Prudential Agencies (ESMPA). This would be composed of the national macro-prudential agencies plus the Single Supervisory Mechanism (SSM). Domestic macro-prudential decisions would remain the competence of the national agencies, but the SSM would have the legal ability to initiate actions should it deem it necessary. From a subsidiarity principle standpoint, failure to take decisive macro-prudential action in a particular country could have spillovers onto the rest of the member states – for example, by preventing the ECB to adopt the optimal monetary policy for fear of exacerbating financial stability risks in that particular country.

On the legal side, it would be important that the relevant macro prudential instruments are based on European law. This could be achieved by establishing a minimum set of borrower-based instruments in the European macro-prudential framework, mirroring the European standards for lender based instruments. One option would be to include it in the framework of the CRR/CRD IV (Capital Requirements Regulation (CRR) and Directive (CRD IV)).

As the euro area business cycle matures, the interaction between the ECB and the SSM, between monetary policy and supervisory policy, will become more relevant and, at times, potentially controversial. There are strong arguments to formally separate the two institutions, to avoid situations where controversy over the actions of one institution dents the credibility of the other. At the same time, there could be positive synergies in the close interaction of these institutions, especially at times of financial market turbulence. This is a debate that will require careful attention in the coming years.

# 1. INTRODUCTION: WHY MACRO PRUDENTIAL POLICY IS NEEDED

One of the main lessons from the global financial crisis is that price stability is not sufficient to guarantee financial stability. The so-called financial cycle and the business cycle can become out of synch, especially during periods of persistent structural change, and risks can emerge in the periods of “disconnect” between the two cycles. For example, in the run-up to the global financial crisis, imbalances were building-up in the housing and financial sectors while inflation was low and stable. At present, the prolonged period of low interest rates, necessary to restore price stability and sustainable growth, is causing some to worry about potential financial stability risks.

The mandate of monetary policy is to ensure price stability in the real economy, and doesn't include, and should not include, addressing potential instability in financial markets. Monetary policy has one mandate, price stability, and one instrument, the term structure of interest rates (influenced via a combination of changes in the short term interest rate, asset purchases, and liquidity operations). Financial stability should be the remit of macro-prudential policy, with the objective of safeguarding the stability of the financial system and containing systemic risk.

Therefore, macro-prudential policies aimed at addressing systemic risk are essential for an economy. Even more so if a country is part of a monetary union and thus the common monetary policy stance may not be optimal for the specific needs of some of its members, as it was clearly the case for some euro area countries prior to 2007.

Macro-prudential policy uses regulatory measures to deal with systemic financial risk which may originate from three types of sources: first, macroeconomic shocks that can make the financial sector vulnerable; second, contagion that may stem from default of a few financial institutions as a result of the growing interconnectedness within the system; finally, the development of endogenous financial imbalances associated with credit booms, excessive leverage, and risk taking by financial institutions.

A systemic approach is critical, because one of the lessons from the crisis was that a sound capital and liquidity situation at the level of individual institutions, as monitored by micro-supervision, does not guarantee the stability of the system as a whole. Systemic risk arises from the intrinsic excess procyclicality of the financial system and the complex interconnections across institutions.

In this context, macro-prudential policy has two main objectives: to enhance the resilience of the whole system and to smoothen the financial cycle. The instruments available for macro-prudential policy span the domain of lenders and borrowers, and include most of the micro-supervision instruments related to capital and liquidity when applied to the system as a whole, beyond the specific characteristics of individual exposures. They also extend to other categories, like limits to loan-to-value ratios (LTV) in housing credit, counter-cyclical capital buffers, global leverage ratios, or haircuts and margin requirements in securities' transactions or clearing activities.

There are several reasons why monetary policy cannot, and should not, be used to deal with financial instability in asset markets. Firstly, price stability and financial stability objectives can at times lead to contradictory policy needs, and monetary policy cannot abandon its publicly stated priorities. It would be highly controversial, for example (assuming it would be possible to fine tune such an experiment), to engineer a mini recession to cool down asset markets while inflation were in line with price stability, or to refrain from boosting economic activity as needed to achieve the inflation target in order to guard against perceived financial excesses. As the recent Swedish experience shows (see the discussion below), the latter strategy could seriously endanger the price stability mandate of the central bank, and dent its credibility as a result. Secondly, it is higher unclear whether monetary policy, through its interest rate policy instrument, can effectively influence and target asset market prices. There is no theory or model establishing a reliable

relationship between interest rates and asset price targets and, as Alan Greenspan famous “irrational exuberance” speech showed, verbal interventions have very limited, if at all, effectiveness. Thirdly, monetary policy simultaneously affects all sectors of the economy and it is therefore a very rough and ineffective tool to cope with specific imbalances in the financial sector. Fourth, it is essentially impossible to define an operational interest rate rule to deal with financial instability, given the very vague, imprecise and often contradictory evidence on the effects of interest on asset prices and of asset prices on economic activity. Finally, by independently addressing financial stability concerns, macro-prudential policy provides monetary policy with additional input for its decision and room for maneuver to better focus on ensuring price stability, thus enhancing the welfare of the economy.

## 2. MACRO PRUDENTIAL TOOLS

The first challenge for macro prudential policy is to identify the variables policy should aim to lean against, in order to reduce excess procyclicality and interconnectedness. Standard variables include equity, interest rate, housing and credit markets, as integral components of the financial cycle. Among this, research shows that the most important driver of the financial cycle is credit flows into real estate. The correlation between mortgage credit flows and house prices is strongly self-reinforcing (see Favara, G., and J. Imbs, (2015))

Therefore, having the tools to address the credit-real estate link is critical for the success of macro-prudential policy. In addition to monitoring measures of valuation and activity in housing markets, there are conceptually two ways to manage the credit-real estate nexus: acting on the lender side, and acting on the borrower side.

Acting on the lending side involves imposing conditions on banks and other lending institutions that either enhance the resilience of the financial institutions in case of losses – capital based instruments – or in case of funding crises – liquidity based instruments. These conditions include capital buffers, sectoral risk weights, loan to deposit ratios, or loan to core funding ratios. The Basel Committee on Banking Supervision (BCBS (2010)) suggests that a 1 percentage point increase in capital requirements reduces the likelihood of a systemic crisis by 20-50 percent.

Acting on the borrower side involves imposing restrictions on borrowers that limit their risk taking and reduce their probability of default and loss given default. These restrictions include, among others, loan to value ratios, loan to income ratios, or debt service to income ratios.

It is important to stress that both sets of instruments are necessary. There are several potential problems with using only lending side instruments to smooth the financial cycle. First, capital-based measures tend to be focused on building resilience and are hence applied in a static way (with the exception, of course, of the counter-cyclical buffer). In addition, even if applied in a more dynamic fashion, such measures have only indirect and limited effects on the costs of loans and thus on mortgage lending growth, limiting their effectiveness in environments of optimistic expectations of house price appreciation. Finally, it is very unclear that lending side instruments would have any effectiveness during an asset price downturn. Lending side instrument are essentially ways to force banks to adopt a more conservative valuation of their balance sheet during boom times, something that markets could agree on. However, it would be very difficult to make a convincing case in favor of a more aggressive valuation during downturns, and to convince markets of it. There is therefore a certain degree of asymmetry in lending side instrument that could be very difficult to overcome.

Borrower side instruments are in general more effective in curtailing excessive credit growth via lower bank leverage and weaker asset growth during booms (see Cerutti, Claessens, and Laeven (2015)). Whenever possible, these indicators should be constructed as ratios to income, and not to prices, to prevent undesirable procyclicality. As the recent experience in the United States and Spain shows, during housing booms loan to value ratios will likely underestimate the true amount of leverage that borrowers are taking on. These indicators should be time varying in order to be effective and avoid procyclicality. An alternative to varying the ratios over time would be conduct borrower stress tests that incorporate interest rates, house price and employment uncertainty and speed of repayment.

Borrower side instruments should be applied based on activity (lending) rather than on institutional characteristics (bank vs non-bank) to minimize leakage. Institution based application can lead to leakage via cross border activities of branches and cross sector activity of non-bank lending activities. These leakages are likely to be dynamic – financial markets will evolve as new regulations and policies are put in place – and therefore monitoring of coverage has to be continuous.

### 3. INTERNATIONAL EXPERIENCE WITH MACRO PRUDENTIAL POLICIES

One of the first adopters of macro-prudential policies was Spain, which started to apply dynamic provisioning in 2000. Dynamic provisions are forward-looking provisions that before any credit loss is individually identified on a specific loan build up a buffer of bank own funds from retained profits in good times that can be used in bad times to cover the realized losses. The buffer build up accordingly is counter-cyclical, because the required provisioning in good times is over and above specific average loan loss provisions, and in bad times there is a release of the buffer so that it helps to cover specific provision needs. The Spanish experience had three phases: (1) the introduction of dynamic provisioning in 2000, which entailed an additional non-zero provision requirement for most banks; (2) the modification in 2005, which implied a net modest loosening in provisioning requirements for most banks; and (3) the lowering of the floor of the dynamic provision funds in 2008 that allowed for a greater release of provisions (and hence a lower impact on the profit and loss of the additional specific provisions made in bad times).

The analysis of the Spanish experience shows that, even though dynamic provisioning wasn't the silver bullet that avoided an excessive housing boom (among other reasons because the lack of good historical evidence on long housing booms and busts made it very difficult to properly calibrate the program), it did mitigate bank procyclicality in credit supply. The dynamic buffers contracted credit availability in good times and expanded it in bad times. Jimenez, Ongena, Peydro and Saurina (2012) show that, during the recent crisis, credit grew by 19 percentage points more at banks with an average level of countercyclical provisions compared to banks with zero provisions.

Another important early adopter of macro-prudential policies has been Canada. Canada entered the crisis with a buoyant housing market, highly indebted households, and well capitalized banks. As the Bank of Canada drastically cut rates to 0.25 percent to offset the impact of the global financial crisis, the Canadian authorities reacted by tightening their macro-prudential stance to avoid an acceleration of the house price and household debt boom. Since 2008, the Canadian government undertook four rounds of measures to tighten mortgage lending standards. Key measures included reducing maximum amortization periods, imposing a minimum down payment, introducing maximum total debt service ratios, tightening LTV ratios, and withdrawing government insurance backing on lines of credit secured by homes. After some false starts, these measures have been effective and have moderated mortgage credit growth and house price inflation, allowing the Bank of Canada to focus on its inflation target. IMF estimates suggests that a one percentage point reduction in the LTV ratio lowered annual credit growth by 0.25 to 0.5 percentage points (see Krznar and Morsink (2014)).

Overall, the experience so far shows that macro-prudential tools have been used primarily to address risks in the real estate sector. Partly for this reason, the loan-to-value limit has been the most popular macro-prudential tool. Some jurisdictions have used multiple tools to help the effectiveness of the measures. For instance, Hong Kong SAR (Special Administrative Region) and Singapore have used the debt service-to-income (DSTI) ratio and taxes applied to real estate transactions along with the LTV ratio. Switzerland, Sweden and Hong Kong SAR also have imposed additional capital requirements for mortgages.

Macro-prudential policy has also been used to enhance the resilience of the banking system. Most of these measures were adopted in response to the global financial crisis. New Zealand, for instance, moved quite quickly and imposed gradually increasing liquidity requirements to contain bank funding risks. Sweden did the same in 2013, as its banks rely heavily on wholesale funding. Countercyclical capital buffers will take effect in Sweden late in 2015 and in Hong Kong SAR in phases beginning 2016. Furthermore, systemically important institutions will have to hold additional capital buffers in Switzerland, Sweden, Hong Kong SAR and the Netherlands.



It is too early to gauge the full impact of the measures that have been undertaken. In addition, some measures will only take effect in the future, and their impact during the eventual downturn will be key for a wholesale evaluation. Nevertheless, there is some early evidence that the implementation of macro-prudential measures have enhanced banking system resilience and helped reduce the build-up of housing sector leverage in most cases. For instance, LTV ratios declined in Hong Kong SAR, New Zealand, and Singapore following the adoption of LTV limits. House prices growth was also affected. For example, the rate of growth of house prices peaked in New Zealand following the imposition of a cap on LTVs. House prices also levelled off in Hong Kong SAR under the combined weight of macro-prudential tools and taxes, with the taxes appearing to have a more immediate impact.

The experience of Sweden is a very good case study of the conflict between price stability and financial stability, and the risk of using monetary policy to address both rather than using macro-prudential policies. In recent years, Sweden's economy has experienced robust growth combined with still high unemployment and low inflation. At the same time, household debt has grown rapidly and house prices have remained buoyant. In response, as the Swedish FSA (Financial Supervisory Authority) was resisting repeated calls from the Riskbank for the adoption of macro-prudential policies, the Riksbank adopted a tighter monetary policy stance than purely macroeconomic considerations would have called for. De facto, near term inflation and unemployment goals became subordinated to reduce the risks to financial stability that stemmed from Sweden's high level of household debt. The outcome, partly driven by factors unrelated to the policy stance, such as the lack of pricing power experienced by Swedish firms competing in global markets and heavily exposed to the euro area, has been a very long period of below target inflation. Svensson (2015) has argued that the Riksbank's monetary policy actions induced a significantly higher rate of unemployment and a sustained shortfall of inflation relative to its target. Sweden's dilemma is not an isolated example; a similar set of issues has faced Norway's central bank, the Norges Bank.

The FSA finally yielded to the demands of the Riskbank and slowly started to implement macro-prudential policies, increasing risk weights for mortgages, introducing a countercyclical capital buffer, and studying the introduction of an amortization requirement for mortgages (most mortgages in Sweden are interest rate only). This allowed the Riksbank to reverse course in July 2014 and aggressively ease policy. Inflation expectations rebounded, suggesting a clear link between adherence to a financial stability mandate and inflation expectations. This is an important experiment warning of the potential long-run costs of losing sight of the price stability mandate. The credibility of the inflation target in most advanced economies has been a key factor in many central banks' ability to restore growth and avoid a deflationary outcome after the global financial crisis. If this credibility of the inflation target is damaged by an excessive focus on financial factors, it would wreak lasting damage to central banks' ability to manage the business cycle, at considerable cost to the economy.

The Swedish experience showcases that the costs of using monetary policy to address financial stability risks are clear and sizable while the potential benefits of such actions are at best uncertain, due to the difficulty inherent in analysing and measuring tail risks that could develop in the future and the lack of clarity of the causal impact of monetary policy on financial stability. Svensson (2015) argues that the Riksbank's policies may have actually increased the already high household debt-to-income ratio, via lower growth, thus exacerbating financial stability risks rather than mitigating them.



## **4. THE EURO AREA SITUATION – REGULATORY FRAMEWORK AND EXPERIENCES**

At the European level, lender based measures are based on the CRR/CRDIV legislation and includes measures such as the Countercyclical Capital Buffer, the Systemic Risk Buffer and capital add-ons for systemically important institutions. It also includes large exposure limits and sectoral risk weights which can be applied to banks' exposures to the residential and commercial property sectors. Borrower based measures, however, remain at the discretion of the national authorities, therefore raising issues of coordination in content, timing and modalities of implementation across countries. In some countries borrower-based measures are codified in the context of financial stability, while in others they fall under consumer protection law. Heterogeneity also extends to the competent authorities for implementing the measures. In some countries it is the central government, in others it is the central bank, and in still others authority is in the hands of a committee that involves different national bodies. This requires coordination among different types of institutions with different mandates and time horizons which can easily lead to an inaction bias. In addition, this heterogeneity across countries and institutions creates a clear risk of regulatory leakages, across countries and financial institutions, something very relevant for the real estate sector. Overall, the effectiveness of the current European macro-prudential framework is rather limited. The ESRB (European Systemic Risk Board) can issue recommendations that operate through a comply-or-explain mechanism, but this capacity has not been used to date. In euro area countries participating in the SSM, the ECB could also play a coordinating role.

The recent experience with macro-prudential instruments in the euro area is limited. On the lender side, the Netherlands has led the process by introducing systemic risk buffers in mid-2014, and similar measures have been implemented in Estonia, Denmark, and Austria. On the borrower side, Estonia has introduced limits on LTV, DSTI and maturity restriction requirements for commercial banks issuing housing loans. Ireland has place ceilings on the proportion of mortgage lending with a high LTV and LTI ratios. The Netherlands has introduced a gradual tightening of LTV caps, reducing them by 1 percentage point per year until LTVs reach 90 percent in 2028. Slovakia has gradually tightened the share of loans with high LTV ratios and introduced recommendation on maximum maturity and requirement for income verification and internal borrower repayment assessment for banks. Lithuania introduced a Responsible Lending Regulation in 2011 and has recently made its DSTI legislation more sensitive to the financial cycle by requiring credit institutions to check whether customers would be financially able to withstand future increases in interest rates, while also reducing the maximum maturity of credit.

## 5. CONCLUSION: WHAT NEEDS TO BE DONE

The ECB is very likely going to have to keep interest rates at zero for several years in order to fulfil its price stability mandate (see the discussion in Ubide (2014)), and therefore it is critical that potential risks from housing and credit markets are addressed in an effective, preemptive and coordinated manner with sound macro-prudential policies. However, the macro-prudential framework of the euro area is fragile, especially on the borrower side, and its legal basis should be strengthened, especially within the SSM area.

This could be achieved via both institutional change and legislative change. On the institutional side, it would be important to harmonize the structure of macro-prudential institutions across the member states and to consolidate them into a European System of Macro Prudential Agencies (ESMPA). This would be composed of the national macro-prudential agencies plus the SSM. Domestic macro-prudential decisions would remain the competence of the national agencies, but the SSM would have the legal ability to initiate actions should it deem it necessary. From a subsidiarity principle standpoint, failure to take decisive macro-prudential action in a particular country could have spillovers onto the rest of the member states – for example, by preventing the ECB to adopt the optimal monetary policy for fear of exacerbating financial stability risks in that particular country.

On the legal side, it would be important that the relevant macro prudential instruments are based on European law. This could be achieved by establishing a minimum set of borrower-based instruments in the European macro-prudential framework, mirroring the European standards for lender based instruments. One option would be to include it in the framework of the CRR/CRDIV.

As the euro area business cycle matures, the interaction between the ECB and the SSM, between monetary policy and supervisory policy, will become more relevant and, at times, potentially controversial. There are strong arguments to formally separate the two institutions, to avoid situations where controversy over the actions of one institution dents the credibility of the other. At the same time, there could be positive synergies in the close interaction of these institutions, especially at times of financial market turbulence. This is a debate that will require careful attention in the coming years.

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## NOTES

# Interaction between monetary policy and bank regulation: Theory and European practice

Eddie GERBA, Corrado MACCHIARELLI

## IN-DEPTH ANALYSIS

### Abstract

The European Union has pursued a number of initiatives to create a safer and sounder financial sector for the single market. In parallel, bold unconventional monetary policies have been implemented in order to combat low inflation, foster risk taking and, ultimately, reinvigorate growth.

But monetary and macro-prudential policies interact with each other and thus may enhance or diminish the effectiveness of the other. Monetary policy affects financial stability by shaping, for instance, leverage and borrowing. Equally, macro-prudential policies constrain borrowing, which in turn have side-effects on output and prices, and therefore on monetary policy. When both monetary and macro-prudential functions are housed within the central bank, coordination is improved, but safeguards are needed to counter the risks from dual objectives.

Against this background, this paper outlines the theoretical and empirical underpinnings of macro-prudential policy, and discusses the way it interacts with monetary policy. We identify advantages as well as risks from cooperating in the two policy areas, and provide suggestions in terms of institutional design on how to contain those risks. Against this backdrop, we evaluate the recent European practice.

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## EXECUTIVE SUMMARY

- One of the key lessons from the financial downturn in 2008 was that micro-prudential supervision alone is not sufficient to guarantee the stability of the financial system. It ignores the externalities of individual actions and the constraints within on the entire financial system, or even the stability of the macroeconomy. Only a macro-prudential policy can tackle these issues from a systemic perspective. Thus, the latter has become a policy objective by its own right.
- The key aim of macro-prudential policy is that of moderating the pro-cyclicality of the system, by influencing the financial intermediation process, operating on the side of assets, liabilities and the leverage of financial institutions. In this sense, macro-prudential policy and monetary policy have much in common.
- In a perfect (and frictionless) world, a well-communicated and well-measured use of macro-prudential tools contributes to macroeconomic stability, and therefore makes monetary policy conduct smoother. The two policies complement each other. In reality, however, these policies can be conflicting, particularly over the short-/ medium- term.
- It is not clear how much of alignment of the two policies there should be in order to achieve price and financial stability. We detail three perspectives currently being discussed: the neutral, extended, and integrated perspectives.
- The neutral perspective assumes that monetary policy should remain focused on price stability. Macro-prudential policy, per sé, should stick to financial stability and use its separated toolkit to achieve its goals. Hence, the only difference with the pre-crisis consensus is the establishment of an effective and credible macro-prudential policy. The current institutional set-up of the ECB follows the logic of this perspective.
- The extended perspective suggests that macro-prudential policy should be the one that is broadly in charge of financial stability. The difference with the neutral perspective, however, is that it is assumed that it is impossible to eliminate an excessively pronounced financial cycle exclusively relying on macro-prudential policy tools. Hence monetary policy should be used more aggressively to tackle the building up of financial imbalances. This perspective is largely endorsed by the BIS. The current institutional set-up of the FED pursues this logic and we see the ECB moving in this direction.
- The integrated perspective finally advocates using simultaneously monetary and macro-prudential policies in order to ensure financial stability and price stability at the same time. Therefore a strict separation of tools by target areas is counterproductive. This view is in line with the actions taken by the Bank of Japan since the Asian crisis and several of the emerging economies' central banks at the time.
- There are clearly some limits of too close policy coordination, and these can translate into time inconsistency of monetary policy, loss of credibility for the central bank and, associated to the latter two, financial dominance, overall lessening incentives for the two policies to work effectively.
- Where monetary policy is constrained (i.e. for instance countries that are members of a monetary union like the EMU), the demand on coordination of monetary policy with macro-prudential policy will be greater. The prevailing view in Europe is that, while coordination is essential at the different governance levels, macro-prudential policies should not be overstrained, and it should rather be complemented by fiscal and structural policies.

- The governance structure in the euro area might strike the right balance between macro- / micro- prudential at both European and national level. What is crucial is that the ECB will be able to retain both micro-prudential responsibilities (i.e. balance sheet assessment, through the Single Supervisory Mechanism), and, in coordination with the European Systemic Risk Board, direct macro-prudential competences to “guide” the policy stance of individual national authorities (through the Capital Requirements Regulation and Directive). The ECB/ Single Supervisory Mechanism should therefore be able to internalise any tensions between macro- vs. micro-prudential policies and establish a well-defined hierarchy between them.
- Some of the new ECB competences are likely to result into a conflict of interest / institutional bias especially when the ECB acts in its liquidity provision role (i.e. lender of last resorts for banks). Hence communication between different parties and a clear mandate, prioritising objectives, should be ensured in order to reduce the intersection of responsibilities, and align preferences at the same time.
- Here, coordination with national macro-prudential authorities will be essential. National macro-prudential authorities should internalise any tensions between monetary and macro-prudential policies.



# 1. WHAT HAS CHANGED IN MODERN CENTRAL BANK POLICY CONDUCT?

Before the financial meltdown in 2008, there was a broad consensus that monetary policy was about maintaining price stability. Decades of experimentation with different targets and instruments had shown the best target to be the price stability one, as it was correctly anchoring the expectations of (financial) agents towards a clearly measurable and time-consistent objective. The experience also suggested that the best performing instrument was the nominal policy rate, as its transmission to other segments of the financial market was direct and relatively smooth (see also Gerba and Macchiarelli, 2015a). Based on the separation principle of Tinbergen (i.e. the idea that each goal should be pursued with a separate and dedicated tool), it was argued indeed that the one monetary policy objective of price stability should be pursued with one instrument. In this way, the information noise regarding monetary policy actions was minimized because agents understand the aim of a specific interest rate rise / drop.<sup>1</sup> Further down the line, it was shown that the best way to ensure financial stability was to maintain price stability, and any other objective or action would lead to sub-optimal outcomes.<sup>2</sup> In other words, financial stability would be a byproduct of price stability.

Previously unimaginable events that materialized following the financial market meltdown in 2008 brought this consensus into question. Financial stability had not been ensured, and more importantly the link between (economic) price-level and financial market activity had been misunderstood. At that point, bolder actions against the unraveling effects from the meltdown were needed and additional tools required. Under these circumstances, a new consensus was born regarding the objectives of a central bank. Not only should a monetary authority prevent adverse financial developments, but it should also care about financial stability as much as it does about price-level stability. The question was only whether the additional financial stability objective should be pursued in conjunction with the price-level objective, or whether these two objectives should be kept separate. In other words, should the newly created macro-prudential targets be conducted in accordance with the monetary policy target, or should they be conducted independently? At the core of the debate is the fundamental issue of the degree of interaction between the two policy targets: "How connected are these two policies?"

In this paper, we will explore these interactions and outline the various (and sometimes diverging) point of views in the literature thus far. Against this backdrop the European practice is examined. Lately, we aim at providing some recommendations on how optimal policy interaction can be achieved, and what policy combinations should be avoided. The experience with macro-prudential policy is, however, very short and the amount of studies examining the interactions very few yet. Therefore, the suggestions should be taken as preliminary and indicative rather than prescriptive since the optimal strategy will become clearer by "learning by doing" and gaining experience in macro-prudential policy-making.

<sup>1</sup> Remember that the (financial) agents can only observe interest rate movements and not the transmission. Therefore, knowing the explicit objective of a central bank, they are able to deduce what end a specific interest rate rise/drop is having. Hence we minimize the information noise with respect to their actions.

<sup>2</sup> In a seminal paper, Bernanke and Gertler (2001) show that the best way to maintain macroeconomic (and financial) stability was to have a reaction function that responds heavily to changes in inflation and output, albeit with the smaller weight on the latter. Any reaction function that included explicit response to a financial market variable, such as a change in the asset price, would result in a sub-optimal social welfare outcome generated for the entire economy. This paper, presented in Kansas City 2000 shaped the mind-set of many central bankers and academics at the time, and possible reactions to financial market developments were not questioned anymore.

## 2. MACRO VS. MICRO-PRUDENTIAL POLICY-MAKING

One of the key lessons from the financial downturn in 2008 was that micro-prudential supervision alone is not sufficient to guarantee the stability of the financial system. It ignores the externalities of individual actions and the constraints within on the entire financial system, or even the stability of the macroeconomy.

Micro-prudential rules (and supervision) concentrate on the institution-level financial ratios, or in its widest form, on the developments in a financial market segment. For instance, micro-prudential rules set the capital buffer that a bank must hold, the leverage ratio of a financial firm, or the type of capital that is accepted as a cushion depending on the shocks that it faces (Tier 1, Tier 2, etc). An example of rules under this category is the Basel accords (i.e. Basel III is the most recent), or the insolvency regulation (Insolvency II the most recent) for insurance companies. Supervisors check that individual institutions adhere to these rules, as well as monitor their market practices. In cases of violations of standard market practices in a particular market segment, the supervisors can sanction the institutions involved. But the aggregate is not always the sum of individuals. What became evident during 2008 was that ensuring individual institutions' solvency does not assure full market soundness, or prevent a systemic financial crash. The size of the institutions vary, as well as their contribution to total systemic risk, their importance for the health of the financial system, or the way in which they are linked to other market actors on the financial market. Only a macro-prudential policy can tackle these issues from a systemic perspective. Thus, the latter has become a policy objective by its own right.

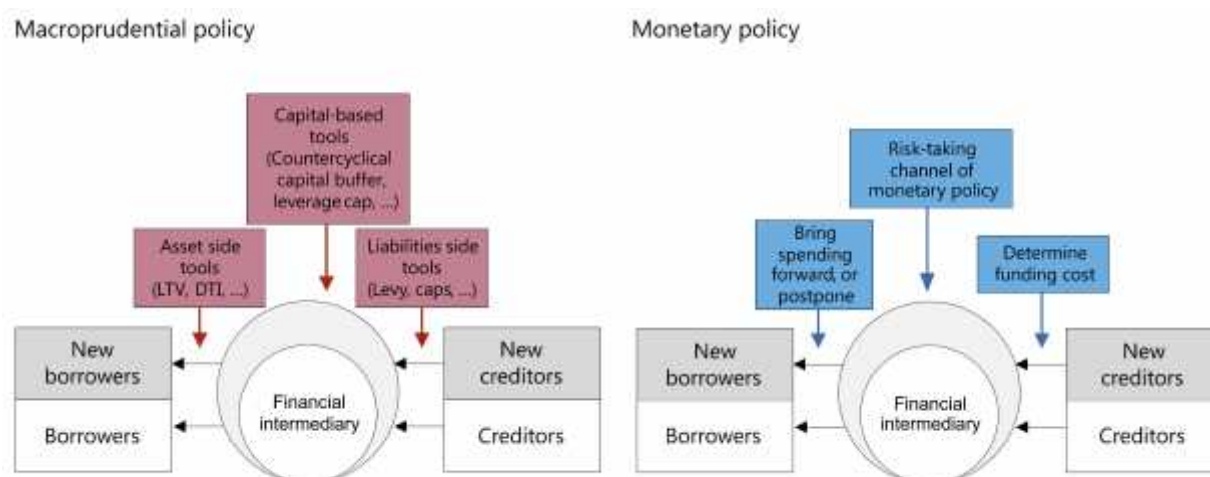
Table 1: Key Macro-prudential Instruments in the EMU

CRD IV	
Countercyclical capital buffers	Article 124
Systemic Risk buffers	Article 124d
SIFI capital surcharge	Article 124a
Sectoral capital requirements and risk weights	Article 119
CRR	
Leverage ratios	As of 2009
Liquidity Coverage Ratio	As of 2015
Net Stable Funding Ratio	As of 2019
Sectoral capital requirements and risk weights	Article 160, 443
Large exposure limits	Article 443a
Increased disclosure requirements	Article 443a
Outside Legal Texts	
Margin and haircut requirements	
Loan-to-value ratio caps	
Levy on non-stable funding	
Loan-to-income ratios	
Loan-to-deposit ratio caps	

Source: Carboni et al (2013).

Ideally, macro-prudential policy works in two ways. First, it helps curb incentives for excessive ex-ante risk-taking by making the individual institutions preventively aware of the contribution of their actions to the systemic stability, or financial stability of the system as a whole. Second, macro-prudential instruments should increase the financial system's resilience, thereby reducing its vulnerability to shocks. In other words, the key aim of macro-prudential policy is that of moderating the pro-cyclicality of the system, by influencing the financial intermediation process, operating on the side of assets, liabilities and the leverage of financial institutions. In this sense, macro-prudential policy and monetary policy have much in common (see Figure 1).

Figure 1: Comparison of macroprudential policy with monetary policy



Source: Shin (2015).

Since there are many different kinds of distortions and misaligned incentives in different areas, the macro-prudential policy area requires its own set of instruments. The type of instruments that have so far been developed are countercyclical capital buffers for banks, capital surcharges for systemically important financial institutions (SIFI), sectoral capital requirements / risk weights, loan-to-value ratios for mortgage loans, liquidity ratios for financial institutions, reserve requirements for banks, or loan-loss provisions that reduce the amount of loanable funds by financial intermediaries and increase credit spreads.<sup>3</sup> Table 1 summarizes the measures and the legal texts within which they are contained for the EMU.

In a perfect (and frictionless) world, a well-communicated and well-measured use of macro-prudential tools contributes to macroeconomic stability, and therefore makes monetary policy conduct smoother. The two policies complement each other. The need to cut interest rates to their lower bound, as well as the need to engage in non-standard monetary measures in the event of a crisis should be minimized. However, in reality, to understand this we need to analyze the way the two policies interact, and what their economic effects are. In addition, we need to specify how much of these results rely on the assumption of a perfect world, and under what circumstances these policies can be conflicting.<sup>4</sup>

<sup>3</sup> Carboni et al (2013).

<sup>4</sup> There is an additional level of complexity in the analysis that relates to the interactions between micro-prudential and macro-prudential policy. While outside the scope of the current paper, we will briefly mention the way these two interact, and under which circumstances these two can be conflicting.

### 3. THE INTERFACE BETWEEN MONETARY AND MACRO-PRUDENTIAL POLICY

#### 3.1. How do they interact?

There is a general consensus that price stability and financial stability are complementary over the long run. However, over the short-/ medium-term, the two objectives can clash. As an example, during quantitative easing (QE) programs, macro-prudential instruments designed to contain financial market leverage can run counter to monetary policy measures. While expansive monetary measures, such as quantitative or credit easing, aim to increase borrowing and spending in the economy, macro-prudential policy aimed at limiting the loan-to-value ratio of banks can instead decrease the amount of loans supplied by banks. These two objectives are clearly conflicting. Therefore aligning the two policies is important. But, aligning them too much can also be dangerous as it might lead to financial dominance of policies, or damage the reputation of the central bank.<sup>5</sup> Therefore it is not clear how much of alignment of the two policies there should be in order to achieve price and financial stability. There is neither a consensus about it. We will therefore outline the three perspectives currently being discussed: the neutral, extended, and integrated perspectives. The key difference lies in the degree of separation assumed between the two objectives and policy transmissions.<sup>6</sup>

##### Neutral (or separated) perspective

The neutral perspective assumes that monetary policy should remain focused on price stability.<sup>7</sup> Macro-prudential policy, per sé, should stick to financial stability and use its own (and separated) toolkit to achieve its goals. Hence, the only difference with the pre-crisis consensus is the establishment of an effective and credible macro-prudential policy.

The underlying assumption of this approach is that each policy area is capable of reducing the key problem in its own area accurately and effectively. Monetary policy does not make any considerable contribution to the financial imbalances, which means that the risk-taking channel (of monetary policy) is viewed as insignificant.<sup>8</sup> If, at any point, the monetary policy was to be responsible for both price and financial stability, this would result in a conflict of objectives and it would create the danger that financial stability objective takes over the price stability one, according to proponents of this view.<sup>9</sup> This is largely the perspective of the Bundesbank, among others. One could also claim that the current institutional set-up of the ECB follows the logic of this perspective.

##### Extended perspective

Although the supporters of this view believe that monetary policy should fundamentally be geared towards a clearly defined objective of price stability, they also believed that monetary policy should not focus too narrowly on achieving a short-term inflation target. Proponents of this view believe that the cost of exclusively pursuing the price stability objective is that monetary policy will not be able to combat the longer-term financial imbalances (for instances high debt accumulation) which would ultimately be at odds with price stability itself over the medium to long term.<sup>10</sup> Even under this view, it remains that macro-prudential policy should be the one that is broadly in charge of financial stability. The difference with the neutral perspective, however, is that it is assumed that it is impossible to eliminate an excessively pronounced financial cycle exclusively relying on

<sup>5</sup> More on this in the section on disadvantages from incorporating macro-prudential policy in monetary policy conduct.

<sup>6</sup> Bundesbank (2015).

<sup>7</sup> Bundesbank (2015) calls this the ideal perspective. However, to avoid normative denominations, our definition is based on the assumption of neutrality of one policy with respect to the other.

<sup>8</sup> Bundesbank (2015)

<sup>9</sup> See Ueda and Valencia (2014) for a theoretical underpinning of this perspective.

<sup>10</sup> See Borio (2014) for the analytical fundamentals of this view.

macro-prudential policy tools.<sup>11</sup> Under this perspective, monetary policy can contribute to the build-up of financial imbalances. This is the case as the monetary policy stance impacts on risk appetite of financial intermediaries, which, in turn, affects the health and stability of the financial sector, hence, the outlook for price stability.

The ideal set-up would be that of having a countercyclical monetary policy, which is stricter during upswings, even in the absence of inflationary pressures, and is aggressively eased in the short term during marked contractions. Even if, in the short run, the monetary policy stance was to cause the target variables (i.e. inflation) to differ from their desired values, this would be justified by the possibility of avoiding future (larger) deviations, such as the likelihood of a crisis. In saying so, however, one should also recognize the limitations that monetary policy faces, in particular with respect to eliminating the debt overhang that is typical of a financial downturn.

Therefore, the extended perspective stresses the risk of overloading monetary policy by attaching targets under (financial) crises times that are not reasonable to achieve. Hence, rather than using monetary policy as a crisis combat tool, the latter should be used preventively in order to avoid an overloading later on. The preventive nature of monetary policy is regarded as necessary in order to protect credibility regarding its price stability objective. The monetary policy is regarded as effective in at least containing ex ante risks to financial stability, even if this objective can be attained only in conjunction with a solid macro-prudential policy.<sup>12</sup>

The Bank of International Settlements (BIS) largely endorses this perspective. The current institutional set-up of the FED pursues this logic. In addition, there are signs that the ECB is slowly moving in this direction.

#### Integrated perspective

The proponents of this perspective argue that even the extended perspective calls for an excessively strict, and inappropriate, separation of the two policy areas, i.e. price and financial stability. The underlying assumption is that it is very difficult to separate price stability from financial stability, as well as it is hard to split the instruments and transmission mechanism of monetary policy from that of macro-prudential policy. As a result, it is highly ineffective for the monetary policy to solely focus on price stability. For instance, securities purchase programs, one of the unconventional policy measures adopted recently by the ECB, does not only have direct intended monetary policy effects, but also, through recapitalization of ailing financial intermediaries, impact on financial stability, which in turn feeds back directly into price stability.<sup>13</sup> In a similar way, macro-prudential tools that affect quantity of lending (a financial stability objective) impacts on money creation and, thus, on price stability.

Hence, this view advocates using simultaneously monetary policy (standard and non-standard) and macro-prudential instruments in order to ensure financial stability and price stability at the same time. Therefore a strict separation of tools by target areas is, according to them, counterproductive. Instead both policy areas should cooperate closely. Moreover, financial market events should always be part of monetary policy considerations.

In cases where a crisis outbreaks – despite the joint efforts an integrated perspective would call for – a “bottleneck approach” should be taken. The sectors that suffer the most from a debt overhang, and whose balance sheets were hit the hardest, should be primarily supported. Without such policy efforts, the contraction in some sectors could easily result in a broader liquidity spiral and fire sales of assets, which in turn could lead to self-reinforcing

<sup>11</sup> See Borio (2014), Feroli et al. (2014), Goodhart (2014), Stein (2014), and Woodford (2012), amongst others, for a discussion on the limitations of macro-prudential tools, and the difficulty of conceptualizing financial stability.

<sup>12</sup> Bundesbank (2015).

<sup>13</sup> See Stein (2013) for a discussion of this feed-back loop.

deflationary spirals and sudden stops.<sup>14</sup> This view is in line with the actions taken by the Bank of Japan since the Asian crisis and several of the emerging economies' central banks at the time.

An argument supporting the case of a strong coordination between the monetary and macro-prudential policies in the euro area, for instance, is the fact that the effectiveness of the policy interest rate as an instrument to prevent financial stability risks is likely to be limited, owing to the lack of synchronicity of credit and liquidity cycles in the currency area.<sup>15</sup> We will develop this argument further in Section 4.2.

### 3.2. Are there any disadvantages from policy interactions in theory?

Having discussed the possible interactions, it should be borne in mind that such interactions do not, however, come without a cost. It is therefore important to do a full cost-benefit analysis when deciding how integrated the two policies should be, and what the "optimal" institutional design is in order to achieve in order to safeguard the smooth functioning of both policies. In this section we focus on the costs, being the latter less obvious.

Talking about risks, the first hazard identified in the literature is the risk of time inconsistency arising from multiple objectives. If monetary policy is responsible for both price stability and financial stability, and the latter is influenced by private-sector debt, the two objectives might become conflicting. Initially, it may be desirable for monetary policy to pursue a low inflation rate. However, following a (negative) financial shock that results in a high level of private-sector debt, for instance, monetary policy makers could decide to reduce the real debt burden by allowing a higher inflation. The result is not only a conflict of objectives, but a time inconsistency in (monetary) policy actions, since the announced rise in interest rate to dampen inflation is rapidly followed by a fall of the policy rate, in order to reduce the debt burden.

Second, a monetary policy's independence could be questioned if it focuses too heavily on financial stability. Gearing monetary policy solely towards the goal of price stability facilitates the political acceptance of central bank independence, as the inflation target as the associated instrument can be clearly defined and assessed. For financial stability objective, on the contrary, several targets exist (credit growth, debt, asset prices, etc) and the desired levels a priori are difficult to determine. In addition, by having to get involved in solvency issues of private economic agents or countries, while trying to achieve the financial stability objective, monetary policy will move closer to the domain of (quasi) fiscal activities. Therefore, the independence of the central bank is not anymore granted, as redistributive issues would also arise.

Third, there could easily be a situation where the financial gains from an expansion dominate the mindset of policy-makers during an upswing, the so-called financial dominance. Ex ante macro-prudential policies may succumb to political and industry pressures not to lean too much against the wind (or the boom), and rely instead on monetary policy to clean the ground or anyway solve any remaining problems arising from a boom-bust cycle.

<sup>14</sup> See Mendoza (2010) for the theoretical foundations of this mechanism, and Buiter and Sibert (2008) for a discussion on the need for a 'market-maker of last resort' in such cases.

<sup>15</sup> Bundesbank (2015).



## 4. FROM THEORY TO PRACTICE: MONETARY AND MACRO-PRUDENTIAL POLICIES IN THE EMU

Talking about the EMU practice, the Commission has, since the crisis, proposed nearly 30 sets of rules for better regulation and supervision of the financial sector. As discussed previously, the ensuing Eurozone crisis added an extra dimension. It highlighted the potentially vicious circle between banks and sovereigns, highlighting in turn the limits of supervision that mainly focused on micro-prudential aspects and individual monetary and financial institutions without taking into account the financial system as a whole. This is why the EU Heads of State and Government committed to the implementation of a consistent framework that rests on a multi-level institutional approach, with a Single Supervisory Mechanism (SSM), as a part of a broader Banking Union for the euro area, and a European Systemic Risk Board (ESRB) for the EU as a whole.

This was coupled by the introduction of rules on capital requirements (Capital Requirements Regulation (CRR) and Directive (CRD IV)), which entered into force on 16 July 2013 (and applied from 1 January 2014), transposing the Basel III agreement into EU legislation.

In the next two sections, we discuss the governance of these policies in details and the possible interactions with the ECB's monetary policy. While there is obviously an international governance dimension to consider, the latter is not discussed for sake of brevity (for an overview see Figure 2).

### 4.1 The governance of monetary and macro-prudential policies: coordination at the European level

The ECB took over macro-prudential supervision by becoming a key participant in the European Systemic Risk Board (ESRB), created at the end of 2010 as a part of a new two-pillar system of financial supervision, the European System of Financial Supervision (ESFS). The ESRB represents the macro-prudential pillar at the European level, going hand-in-hand with three European Supervisory Authorities (ESAs) to cover micro-prudential supervision; representing the second pillar.<sup>16</sup>

The ESRB, according to its mandate, "shall be responsible for the macro-prudential oversight of the financial system within the Union in order to contribute to the prevention or mitigation of systemic risks to financial stability [...] that arise from developments within the financial system and taking into account macro-economic developments, so as to avoid periods of widespread financial distress" (ESRB legislation).

The ESRB was not given any legally binding authority, albeit it has the power to issue warnings and recommendations, including both admonitions calling for the attention of the addressees to identified systemic risks, or recommendations advising on policy actions to be taken to mitigate the identified risks. Addressees of the ESRB's warnings and recommendations can be the European Union, individual EU Member States and the three ESAs, as well as national supervisory authorities in the EU or the European Commission (the latter, mainly as concerns the relevant EU legislation).

Given the ESRB's General Board composition, the process leading to the adoption of warnings and recommendations and their communication involves collective consideration by a set of important bodies and institutions, including the President and Vice-President of the ECB, which makes it difficult for the addressees to simply ignore them.<sup>17</sup> Moreover, the addressees are subject to an "act or explain" mechanism, implying that addressees have to

<sup>16</sup> The three ESAs were not created ex novo but resulted from upgrading the 3 Level Lamfalussy (3L3) Committee of European Financial Supervisors and transforming them into authorities with legal personality and enhanced competencies. This new financial supervision system was established following a European Commission proposal, at the back of the results contained in the De Larosière report, supporting a new European supervisory structure.

<sup>17</sup> The ESRB board brings together the central bank governors and high-level representatives of the financial supervisory authorities from all 28 EU Member States, as well as the President and Vice-President of the ECB, a member of the European Commission and the chairs of three ESAs.

report to the ESRB on the actions taken to comply with the recommendations, or explain, if not action is taken, why. The ESRB's Board composition and its functioning thus result into a "peer-pressure" mechanism on the addressees, albeit no sanctions can be formally applied (Dierick et al., 2012).

Beyond the European Systemic Risk Board, the European supervisory tasks are related to the Single Supervisory Mechanism (SSM), the first element of the European Banking Union to be. The SSM also relates to the micro-prudential dimension of the banking system, being grounded into bank-specific assessment and supervision. The SSM, in its final composition, is composed of the ECB and national supervisory authorities.<sup>18</sup> The EU Council agreement appropriately conferred broad investigatory and supervisory powers to the ECB,<sup>19</sup> which is responsible for the effective and consistent functioning of the SSM, starting from Nov. 2104.<sup>20</sup> National authorities remain responsible for the banks remaining under their direct supervision.

Guidance on the design of an effective mechanism is provided in the Basel Core Principles – part of the wider international effort to impose stricter regulation on the financial system.<sup>21</sup> According to these principles, a number of preconditions and prerequisites must be met at the euro area level, including: (i) the implementation of coherent and sound macroeconomic policies; (ii) an established framework for financial stability policy; (iii) a well-developed public infrastructure; (iv) an effective crisis management, recovery and resolution framework to deal with bank failures; (v) an adequate safety net to deal with confidence crisis and guarantee systemic protection; and (vi) effective market discipline. On the other hand, as underlined by IMF (2013), prerequisites to establish a sound basis for the SSM include: (i) operational independence of the SSM; (ii) clear objectives and mandates; (iii) legal protection of supervisors; (iv) transparent processes, sound governance and adequate resources; and (v) accountability.

The relevant regulation seems to meet these prerequisites, albeit the risks of the SSM/ECB being trapped in a fiscal dominance game are potentially high. For instance, the ECB, in its role of lender of last resort for banks (i.e. monetary policy), could have incentives, ex ante, to minimize liquidity operations that constitute a risk to its balance sheet, while, in its SSM role, advocate larger European Stability Mechanism (ESM) interventions than what a "neutral" supervisor would do (Begg et al., 2014).

As a part of the SSM role, and in order to facilitate identification and action on systemic risks, including the internalization of cross-border externalities, shift in macro-prudential mandates and tools have been considered, away from member states and toward the ECB.

Differently from the ESRB's macro-prudential oversight role, with the SSM the ECB is given binding powers to be able to use macro-prudential instruments, by "digging" into banks' balance sheets. Importantly, Article 15 of Regulation No. 7776/1/13 gives the ECB the possibility to impose administrative sanctions "[i]n accordance with Article 132(3) TFEU and Council Regulation (EC) No. 2532/98 of 23 November 1998". In particular, "in order to enable the ECB to effectively carry out its tasks relating to the enforcement of supervisory

<sup>18</sup> The SSM final legislation consists of: (i) Regulation No. 7776/1/13, adopted on 19 March 2013, conferring specific tasks (Art 4 of the same Regulation) on the ECB concerning policies relating to the prudential supervision of credit institutions; (ii) Regulation No. 7775/13 amending Regulation No. 1093/2010 establishing the EBA.

<sup>19</sup> The legal basis for the ECB's supervisory authority is provided by the TFEU stating that "[t]he ESCB shall contribute to the smooth conduct of policies pursued by the competent authorities relating to the prudential supervision of credit institutions and the stability of the financial system" (Art. 127(5) TFEU). Further, "[t]he Council, acting by means of regulations in accordance with a special legislative procedure, may unanimously, and after consulting the European Parliament and the European Central Bank, confer specific tasks upon the European Central Bank concerning policies relating to the prudential supervision of credit institutions and other financial institutions with the exception of insurance undertakings" (Art. 127(6) TFEU).

<sup>20</sup> The ECB would directly supervise banks accounting for about 80 percent of euro-area banking assets, including banks with over €30 billion in assets or 20 percent of national GDP, or if otherwise deemed systemic (e.g., given cross-border reach).

<sup>21</sup> The so-called "Core Principles for Effective Banking Supervision", Sept. 2012 <http://www.bis.org/publ/bcbs213.pdf>



rules set out in directly applicable Union law, the ECB should be empowered to impose pecuniary sanctions on credit institutions, financial holding companies and mixed financial holding companies for breaches of such rules."

While this is very different from the ESRB, Art 18(2) anyway clarifies that the tasks conferred upon the ECB by Regulation 7776/1/13 "shall [...] not interfere with its tasks in relation to the European Systemic Risk Board or any other tasks."

Finally, the "ECB may require the competent authorities of the participating Member States [...] to provide all relevant information for the ECB to carry out a comprehensive assessment, including a balance-sheet assessment, of the credit institutions of the participating Member State" (Art. 27(4) Regulation No. 7776/1/13).

While necessary for conducting its supervisory role, balance-sheets assessments are likely to result into a conflict of interest / institutional bias especially when the ECB acts in its liquidity provision role (i.e. lender of last resorts for banks). Hence communication between different parties and a clear mandate, prioritising objectives, should be ensured in order to reduce the intersection of responsibilities, and align preferences at the same time (see also Angelini et al., 2011; Bennani et al., 2014).

## 4.2 Systemic risks and the case for a monetary union

With different degrees of integration (see Section 3), an international consensus has emerged for central banks to play a leading role in the conduct of macro-prudential policy (see Figure 2), provided that the independence of central bank is preserved.

Table 2: Examples of systemic risk indicators

Category	Time dimension indicator	Cross-sectional dimension indicator
Macroeconomic risk	Real GDP growth Current account balance-to-GDP ratio Unemployment rate General government debt-to-GDP ratio General government deficit-to-GDP ratio	Foreign exchange (currency mismatch)
Credit risk	Credit-to-GDP gap (Drehmann et al., 2010; Drehmann et al., 2011) Debt service ratio (Drehmann et al., 2012, 2013) Aggregate real credit growth Banks' charge-off rates Ratio of non-performing to total loans Aggregate gross losses of banks Credit conditions (Bank Lending Surveys)	Overall asset quality (haircut, losses, non-performing loans, VaR, lending spreads) Government (loans to governments, CDS spreads, debt-to-GDP ratings) Real estate (mortgage credit growth, price-to-rent ratios, down payments, residential property or commercial real estate prices) Households (indebtedness ratio, interest repayments over disposable income)
Market risk	Real asset price gaps (Borio and Drehmann, 2009) Price-to-book ratios Global risk aversion indicators/volatilities	Global risk aversion indicator (risk appetite survey, VSTOXX) (Market) Liquidity index
Financial soundness	Ratio of non-core liabilities over deposits (Hahn et al., 2012)	Liquidity (loan-to-deposit ratios, liquid assets to total assets, LCR, NSFR) Funding (credit and CDS spreads, bid-ask spreads, ratings, central bank funding) Profitability (ROA, ROE, lending standards, margins) Solvency (Tier 1 ratio, Z-score, distance-to-default)
Interlinkages, contagion and concentration risks		MES (Acharya et al., 2010) SRISK (Acharya et al., 2012) CoVaR (Adrian and Brunnermeier, 2008) BSI (Segoviano and Goodhart, 2008) JPoD (Segoviano and Goodhart, 2008) DiDe (Segoviano and Goodhart, 2008) Network analysis (static and dynamic) Interbank (net position, reserves, spreads) Top 5 MFIs' market share MFIs' exposure to domestic government sector over total credit Banking sector size over domestic GDP Share of G-SIFIs' assets over financial systems total assets

Source: Bennani et al., (2014).

We discussed previously that where monetary policy is constrained (i.e. for instance countries that are members of a monetary union), the demand on coordination of monetary policy with macro-prudential policy will be greater. Indeed, in the euro area, because of a single monetary policy, it will be up to macro-prudential policy to counteract the adverse side effects of (a “one size fits all”) monetary policy on financial stability, as the recent Spanish and Irish experience have shown. We should bear in mind, however, that while coordination is essential at the different governance levels, macro-prudential policies should not be overstrained, and it should rather be complemented by fiscal and structural policies (IMF, 2013), as a comprehensive toolkit against macroeconomic and systemic risk.

From a European governance point of view, the ECB certainly has a comparative advantage, as well as the technical expertise and reputation, to perform its macro-prudential role. The existence of an explicit mandate for the ECB/SSM can remove ambiguities concerning the legitimacy of the macro-prudential authority's actions, by placing macro-prudential policy in a clear statutory framework. At the same time, the mandate will be a guarantee against the bias of inaction, as it would also give the ECB/SSM adequate powers to appropriately perform the required tasks. Nevertheless, coordination with national supervisors and macro-prudential authorities will be crucial. This is what we will discuss in the next section.

Before we turn to coordination issues between European and national levels, we wish to discuss the idea of systemic risk and how this affects the governance of monetary and macro-prudential policies in a monetary union, like the EMU.

It is well understood that systemic risk is characterised by both a cross-sectional (static) and a time (dynamic) dimension, summarized here in Table 2. The cross-sectional dimension represents a snapshot of a given point in time, capturing how risks are distributed and correlated across actors at large. The time dimension captures instead the evolution of systemic risk over time, due to dynamic effects in financial market conditions, including the potential build-up of imbalances, such as credit market or asset bubbles.

The Table above delivers the message that a broad set of indicators must be employed not only to capture the different extents of systemic risk (i.e. there is no such as thing as a “one-size-fits-all” policy), but also to avoid Type I (too much emphasis on financial stability) and Type II (too much control, or “crying wolf”; see IMF, 2013) errors. This once again calls for the discussion in the next section.

The key question here is, however, that the definition of systemic risk in a currency union adds several dimensions in a setting where the central bank's (i.e. the ECB) and macro-prudential policy interact.

Members of a monetary union are thought to face a tougher budget constraint (De Grauwe, 2014) owing to the fact that financial markets will price-in the absence of a sovereigns' lender of last resort (e.g., De Grauwe and Ji, 2013). This was the case at least before the launch of the Outright Monetary Transactions (OMTs). This intrinsic “fragility” (De Grauwe, 2014) has important consequences on the extent to which particular instruments can be tailored to specific risks and address systemic issues.

As underlined by Panetta (2014), for instance, there seem to be a consensus nowadays that bank capital ratios are essentially the “only weapon in the [...] macro-prudential policy toolbox”. Higher capital requirements would certainly be the right (macro-prudential) answer in case of a heightened credit risk in the market, resulting into a liquidity dry-up. Overall, however, if a liquidity dry-up depends instead on high funding costs for banks, regardless of their individual situation (as observed recently, because of the poor condition of their sovereign), raising capital charges might work, but it would clearly be far from optimal. The ECB's monetary policy has in fact proven quite effective by using unconventional measures that affected banks' funding more directly - the Long Term Refinancing Operations (LTROs), among others. This calls not only for a clear understanding of the routing causes of financial distress, but also, in a monetary union, for clear coordination and mandates. In this scenario, it is believed national macro-prudential authorities should internalise any tensions between monetary and macro-prudential

policies. This is the case, especially in the European context, being the European Banking Union not fully operational and the sovereigns-banks doom-loop still in place (Macchiarelli, 2013). A separation principle should then be a useful guide in establishing a well-defined order between macro and micro prudential policy objectives (Panetta, 2014), hence facilitating coordination with monetary policy.

#### 4.2.1 Macroeconomic risk and the MIP

"Macroeconomic risk", as a part of systemic risk, involves monitoring macro aggregates. Of all the measures of the European governance framework recently implemented, the Macroeconomic Imbalances Procedure (MIP) is the one that comes closest to addressing the underlying political economy concerns posed by correction patterns within the currency union.<sup>22</sup>

The ECB plays actually a role in surveillance missions within the MIP (Article 121(6) of the TFEU), in the context of the legislative package agreed between the EU Council and the Parliament (the "Six Pack", entered into force in December 2011), hence making macroeconomic risks liable of possible interactions with monetary policy.

The Pack limits the discretion of national authorities, backed up by sanctions (as contained in the Excessive Deficit Procedure). Article 9 of Regulation No. 1176/2011 on the "prevention and correction of macroeconomic imbalances" in particular says that "[t]he Commission may carry out enhanced surveillance missions to the Member State concerned, in order to monitor the implementation of the corrective action plan, in liaison with the ECB when those missions concern Member States whose currency is the euro [...]". Article 13(3) further clarifies the role of the ECB in these surveillance missions saying that "[...] the Commission may, if appropriate, invite representatives of the European Central Bank to participate in surveillance missions" directly.<sup>23</sup> The results of such in-depth reviews (also with the participation with the ECB) shall be made public, albeit the ECB will not publish its own independent assessment. As for other macroeconomic surveillance roles, the ECB is hence given under the MIP a "low profile" function (Darvas and Merler, 2013).

This implies that, even if such tension may exist in the interaction with the ECB's monetary policy stance, they should be presumably of little relevance for the moment.

### 4.3 The governance of monetary and macro-prudential policies: coordination between European and national levels

Macro-prudential policy is normally is thought to operate mainly through the banking sector. This is key in the euro area, given that the latter relies greatly on bank finance.

Another distinctive feature of the euro area is the heterogeneity among member states – particularly, between core and periphery – and the fragmentation of European financial markets – at the micro level. Many European banks work generally at the retail level, and the degree of cross-border penetration has always been fairly squat in Europe (Panetta, 2014). This has placed severe strains on the monetary policy transmission mechanism. With business cycles not being generally synchronized and the recent evidence of monetary policy impulses not transmitting symmetrically, the safekeeping of relevant macro-prudential policy tools must involve a national dimension.

In this environment, country-specific macro-prudential policies can be used not only with a financial stability objective in mind, but also to prevent financial and real imbalances stemming from the one-size-doesn't-fit-all problem (Panetta, 2014). In this respect, the interaction between monetary policy and macro-prudential tools is a key constituent in the euro area design.

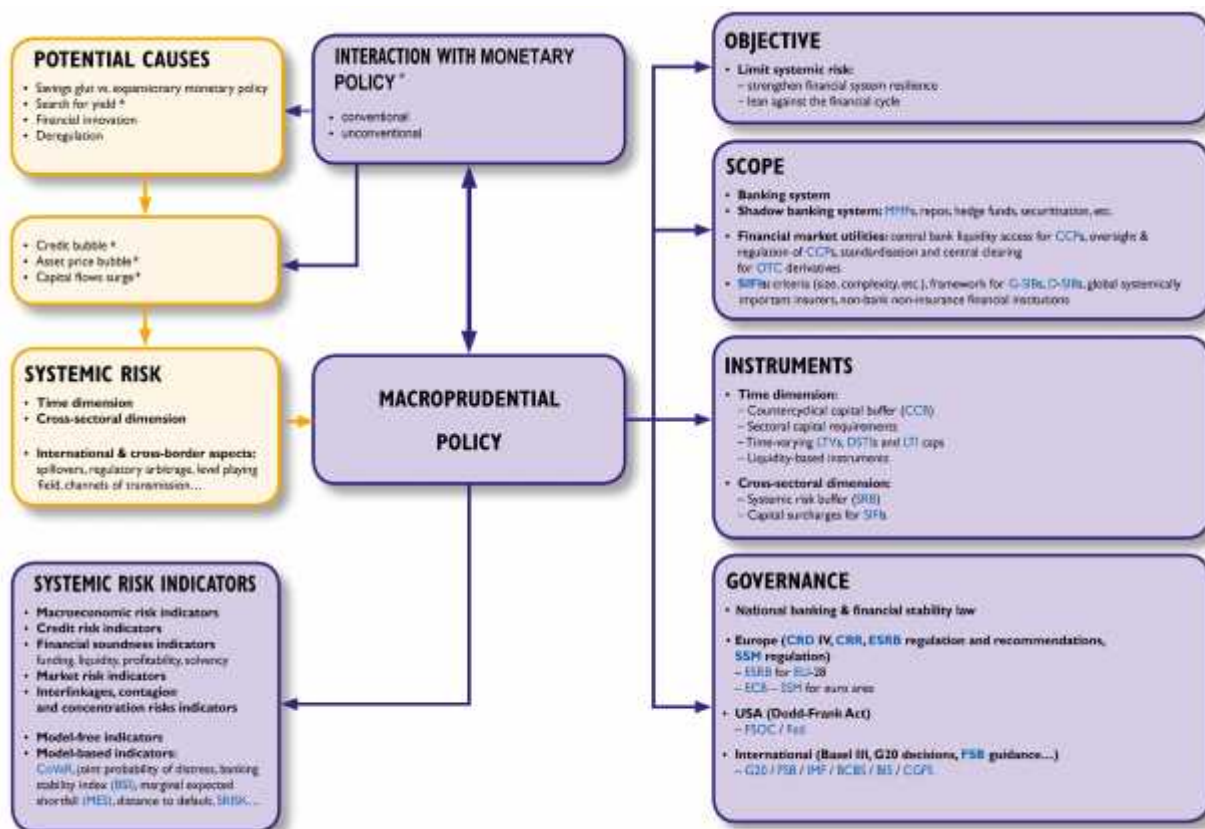
<sup>22</sup> Herzberg and Watson (2014) identify this dimension as well, even if in a dynamic setting.

<sup>23</sup> Regulation (EU) No 1176/2011 of the European Parliament and of the Council of 16 November 2011.

Related to the above mentioned problem of fragmentation, is the level of concentration of the European banking sector. One important finding of the literature on the interaction between monetary and macro-prudential policies is that the latter are significantly overlapping and the interaction between monetary and macro-prudential policies is weaker the more concentrated is the market (Panetta, 2014). Concentration makes banks' lending decisions less dependent on the monetary policy stance (see, e.g., Kashyap and Stein, 2000), as banks with high liquidity and diversified portfolios will be able to adjust their credit supply more gradually to changes in the monetary policy stance (see, e.g., Brunnermeier and Pedersen, 2009; Adrian and Shin, 2010). A high level of concentration, with credit markets dominated by a few large and liquid actors, would make it harder for monetary policy to affect the banking sector. In this scenario, liquid and diversified banks may be more reactive to macro-prudential policies. All the above, suggests a role for coordinated European and national macro-prudential decision-making in the euro area.

Of course, there are other channels through which monetary policy can affect financial stability and, indirectly, banks' lending decisions, such as the risk taking channel (e.g. Borio and Zhu, 2012; ECB, 2011). In a previous note we discussed how QE programs are in fact tailored to stimulate the economy at the zero lower bound. Hence, a certain amount of risk taking is involved (e.g. Gerba and Macchiarelli, 2015b). Nowadays monetary accommodation remains critical in supporting the recovery by encouraging real spending investment and hiring decisions by firms. However, (ultra) accommodative monetary policies face indeed a trade-off between the upside economic benefits of the recovery and the downside financial stability risks, i.e. financial risk taking. We summarized the possible feedback loop between monetary policy and macro-prudential regulation in Figure 1. Some of these effects are uncertain yet, that's why the picture should be interpreted with care (some of these relationship are more straightforward and we denoted them with an \*, along the lines of what discussed in Gerba and Macchiarelli, 2015b).

Figure 2: The macro-prudential framework and the interaction with monetary policy



Source: Adapted from Bennani et al., (2014). For a definition of systemic risks indicators, see Table 2.



In Figure 2, having QE programs in mind, we linked monetary policy to the search for yields, or the possibility of credit, asset price and capital flow surges.

In this framework, while we believe macro-prudential policy should be lessened to allow the effects of QE to display their effects, particularly to facilitate credit transmission, one should not forget that financial excesses should be anyway addressed through well-designed macro-prudential measures (see also Section 2), allowing an even bank balance sheet repair, and reducing the above mentioned fragmentation between the core and periphery in the euro zone. This view is also shared by IMF (2014). The design of both European supranational and national macro-prudential (and micro-prudential) policy measures address, in principle, these concerns.

The governance structure in the euro area might strike the right balance between macro- / micro- prudential at both European and national level. What is crucial is that the ECB will be able to retain both micro-prudential responsibilities (i.e. balance sheet assessment, through the Single Supervisory Mechanism), and, in coordination with the European Systemic Risk Board, direct macro-prudential competences to “guide” the policy stance of individual national authorities (through the CRR/CRD IV). The ECB/SSM should therefore be able to internalise any tensions between macro- vs. micro-prudential policies and establish a well-defined hierarchy between them.

At the same time, it should be borne in mind that macro-prudential measures depend on (IMF, 2014): (i) data availability to monitor the build-up of financial stability risks, (ii) analytical ability, and (iii) statutory right to use the macro-prudential policy tools, even when measures are highly unpopular (i.e. the above mentioned fiscal dominance issue, see Section 3.2). Hence, given the aforementioned concentration and fragmentation of the euro area banking system, as well as the danger of accountability gaps, the latter should be a good news for the euro area as it would place national macro-prudential authorities in a privilege position to internalise possible conflicts between macro-prudential policies and monetary policy (Panetta, 2014), as we discussed.

Effective and balanced communication of the measures undertaken between the different parties involved, both European (SSM and ESRB) and national, will be essential. In fact, political economy considerations may get in the way macro-prudential policy works. For instance, national authorities may be driven by skewed incentives, with potential adverse spillovers for financial stability in other markets.

The European financial architecture with the ECB/SSM topping up national measures on the euro area banking sector, and the ESRB, screening individual initiatives at the EU level, certainly limit the scope for strategic choices by individual countries, and partially address political economy concerns of this type. There remain, however, considerations on the feasibility of these measures in practice, together with a limited role for European banking resolution. The latter considerations underscore other risks, such as the interaction of macro-prudential and fiscal policies (see Section 3.2). These considerations go behind the scope of this paper, and many of those will be anyway clarified with the unravelling of time and “learning by doing” (see also Panetta, 2014).

## 5. WHEN IS INCLUDING MACRO-PRUDENTIAL POLICY BENEFICIAL? EVIDENCE FROM THE LITERATURE

The specific literature on this issue is at its infancy. A common thread among recent studies on interactions seems to be that macro-prudential and monetary policies are, in many instances, complementary and support each other. However, there is also a potential for trade-offs, or even conflicts of interest between them. While the exact type of trade-offs will depend on the specific model assumptions, there are some general lessons to be learned based on the (selected) literature review below.<sup>24</sup>

Angelini et al. (2014) find that in 'normal times', when the economic cycle is driven by supply shocks, macro-prudential policy yields negligible benefits relative to a 'monetary policy-only' scenario, even if the two authorities cooperate. Furthermore, if both policies are finally implemented, the economy is better off when the two cooperate, as that will prevent any conflict of interest in aims. Yet, the benefits of macro-prudential policy become more sizeable when economic fluctuations are driven by financial or property market shocks that in turn affect the supply of loans. Once again the benefits increase when the two authorities cooperate closely.

In the same vein, Quint and Rabanal (2013) show that introducing macro-prudential policies is largely welfare improving, but that there are also winners and losers from including these instruments. Under property price or risk shocks, these measures reduce the volatility of real variables by offsetting the propagation effects triggered by these shocks. However, when technology (or supply) shocks hit the economy, macro-prudential policies have the opposite effect and magnify the countercyclical behavior of the lending-deposit spread. This imposes larger fluctuations in consumption, housing investment, and hours worked for borrowers. Hence, in such circumstances, introducing macro-prudential policy would increase the welfare of savers, but reduce that of borrowers.

Similar considerations apply for an aggregate demand shock. A monetary policy response alone is optimal if it durably stabilizes output AND inflation. When stabilizing inflation comes at the cost of lower output, and when lending imposes a systemic risk externality, there is some scope for using macro-prudential policy alongside monetary policy so as to limit systemic risk stemming from the expansion in leverage.

Gelain and Ilbas (2014), on the other hand, show that the successfulness of a monetary-macro-prudential policy mix depends on how responsive macro-prudential policy is to changes in the business cycle (or output). There are considerable gains from coordination if the macro-prudential regulator has a similar response to the business cycle as the monetary policy, i.e. it has been assigned a sufficiently high weight on output gap stabilization. If, on the other hand, the main focus of the macro-prudential mandate is on credit growth, then this can reach better outcomes in the absence of coordination, even if the central bank does worse. This trade-off in coordination gains is equally present in a situation characterized by high real and financial volatility, such as experienced during the recent financial turmoil, and their results are robust to numerous definitions of financial stability.

Taking a different stance, Claessens et al (2013) argues that while interactions can enhance or reduce the effectiveness of each policy in achieving its objectives, there is no great need for coordination in most cases. However, there are exceptions, in particular when monetary and macro-prudential policies are constrained. An example of such constraint is a monetary union where individual countries do not have authority over monetary policy. In such cases, the burden on the other policy (in this case macro-prudential) increases and additional distortions can give rise to coordination issues. In such a (second best) scenario, the conducts of both policies need to be adjusted to consider the

<sup>24</sup> In the same manner, there could be conflict of interests between micro-prudential and macro-prudential policies. In such cases, according to Noyer (2014), macro-prudential policy should prevail since the latter will ensure overall macro-welfare of the economy, and guarantee the smooth financing of the economy.

weaknesses in the other.<sup>25</sup> Also, some considerations need to be addressed to exchange rate/international trade policies, which will affect financial stability and macro-prudential measures via the international financial flow channel.

Antipa and Matheron (2014) discuss the importance of macro-prudential policy as fiscal measures, and the effects on monetary policy conduct. An effective macro-prudential supervisor might have to impose levy tax or sanctions. These actions, however, are of fiscal nature and embedded into national democratic legislations. The systemic supervisors will thus have to closely engage with governments in order for sanctions and taxes to be implemented.<sup>26</sup> But this might lead to potential risks. Central banks or political interference from governments could result in pressures to continue lending to weak banks for fear that winding them up would trigger losses, or to avoid costly bank restructurings.<sup>27</sup> The only way to safeguard from such risks is to clearly separate supervisory and macro-prudential policies from resolution authorities. Such an outside mechanism alleviates the risk of fiscal dominance, contributing further to the central bank's credibility and independence.

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<sup>25</sup> There are many reasons why macro-prudential policies may not operate perfectly. Financial stability concerns are hard to capture in practice, making it difficult to determine when macro-prudential policies need to be loosened or tightened. More generally, models are still poor at capturing financial stability considerations as these often arise from nonlinear effects that are hard to model. The limits of models make for limited scope to know how to adjust either policy optimally.

<sup>26</sup> Goodhart (2011).

<sup>27</sup> Brunnermeier and Gersbach (2012).

## 6. CONCLUSIONS

The European Union has pursued a number of initiatives to create a safer and sounder financial sector for the single market. In parallel, bold unconventional monetary policies have been implemented in order to combat low inflation, foster risk taking and, ultimately, reinvigorate growth.

But monetary and macro-prudential policies interact with each other and thus may enhance or diminish the effectiveness of the other. Monetary policy affects financial stability by shaping, for instance, leverage and borrowing. Equally, macro-prudential policies constrain borrowing, which in turn have side-effects on output and prices, and therefore on monetary policy. When both monetary and macro-prudential functions are housed within the central bank, coordination is improved, but safeguards are needed to counter the risks from dual objectives.

Against this background, this paper outlined the theoretical and empirical underpinnings of macro-prudential policy, and discussed the way it interacts with monetary policy. We identified advantages as well as risks from cooperating in the two policy areas, and provided suggestions in terms of institutional design on how to contain those risks. Against this backdrop, we evaluate the recent European practice.

We conclude that the governance structure in the euro area might strike the right balance between macro- / micro- prudential at both European and national level. What is crucial is that the ECB will be able to retain both micro-prudential responsibilities (i.e. balance sheet assessment, through the Single Supervisory Mechanism), and, in coordination with the European Systemic Risk Board, direct macro-prudential competences to “guide” the policy stance of individual national authorities (through the CRR/CRD IV). The ECB/SSM should therefore be able to internalise any tensions between macro- vs. micro-prudential policies and establish a well-defined hierarchy between them.

Some of the new ECB competences are certainly likely to result into a conflict of interest / institutional bias especially when the ECB acts in its liquidity provision role (i.e. lender of last resorts for banks). Hence communication between different parties and a clear mandate, prioritising objectives, should be ensured in order to reduce the intersection of responsibilities, and align preferences at the same time.

Here, coordination with national macro-prudential authorities will be essential. National macro-prudential authorities should internalise any tensions between monetary and macro-prudential policies.



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