CefES-DEMS WORKING PAPER SERIES

The ECB after the crisis: existing synergies among monetary policy, macroprudential policies and banking supervision

Nuno Cassola, Christoffer Kok and Francesco Paolo Mongelli

No. 424 – December 2019

Center for European Studies
Department of Economics, Management and Statistics
University of Milano – Bicocca
Piazza Ateneo Nuovo 1 – 2016 Milan, Italy
http://www.cefes-dems.unimib.it/

The ECB after the crisis:
existing synergies among monetary policy, macroprudential policies and banking supervision

Nuno Cassola
CefES Univ. Milan-Bicocca and CEMAPRE Univ. Lisbon; email: nuno.cassola@unimib.it

Christoffer Kok
European Central Bank, Frankfurt am Main, Germany; email: christoffer.kok@ecb.europa.eu

Francesco Paolo Mongelli
European Central Bank, Frankfurt am Main, Germany; email: francesco.mongelli@ecb.europa.eu

Abstract

The prolonged crisis exposed the vulnerability of a monetary union without a banking union. The Single Supervisory Mechanism (SSM), which started operating in November 2014, is an essential step towards restoring banks to health and rebuilding trust in the banking system. The ECB is today responsible for setting a single monetary policy applicable throughout the euro area and for supervising all euro area banks in order to ensure their safety and soundness, some directly and some indirectly. Its role in the area of financial stability has also expanded through the conferral of macroprudential tasks and tools that include tightening national measures when necessary. It thus carries out these complementary functions, while its primary objective of pursuing price stability remains unchanged. What are the working arrangements of this enlarged ECB, and what are the similarities and existing synergies among these functions? In the following pages, focusing on the organisational implications of the "new" ECB, we show the relative degrees of centralisation and decentralisation that exist in discharging these functions, the cycles of policy preparation and the rules governing interaction between them.

Keywords: European Central Bank, monetary policy, banking union, banking supervision, financial stability, systemic risks, macroprudential policies, decision-making process

JEL codes: E42, E58, F36, G21

1 Introduction and motivations

With the launch of the euro in January 1999, exclusive responsibility for setting the single monetary policy and pursuing price stability within the euro area was transferred to the ECB. Today, the ECB is at the centre of a supranational central banking system: the Eurosystem. The system comprises the ECB itself and the national central banks (NCBs) of those EU countries that have adopted the euro, which form the euro area.[1] This represents the culmination of a process of monetary integration beginning with monetary cooperation in the 1960s, followed by various forms of monetary coordination from the 1970s on.

The first few years of the euro saw sustained growth and declining unemployment, while trade deepened and the ECB maintained overall price stability (for an in depth account see ECB (2008)).

Cross-border bank intermediation increased, but it consisted principally in short-term financial flows, funnelled by banks from “core” countries to banks in the euro area “periphery”. This enabled some countries to run substantial current account deficits, or fiscal deficits or both. These imbalances were later exacerbated by the global financial crisis (GFC) and the Great Recession. Subsequently, it became clear that financial stability could not be achieved through price stability alone. Moreover, maintaining price stability proved difficult in the aftermath of the Great Recession, following a prolonged euro area crisis with a second recession, financial fragmentation and break-up risks.[2] Recently, a “mental silos effect” has also been listed as a contributor to the crisis. The effect captures the fragmentation of knowledge and segmentation of analysis that prevailed among market participants, regulators and academics (Tett (2015) and Angeloni (2017)).[3]

Before the financial crisis, banking supervision in Europe was characterised by an inadequate exchange of information and differing supervisory practices and regulatory frameworks. Moreover, there were no joint banking resolution procedures, despite some bank mergers and rising bank funding across borders (see various ECB reports on financial integration). On the one hand, several central banks had already established analytical processes to identify and communicate threats to financial stability through financial stability reviews: for instance, the ECB has published a semi-annual financial stability review since 2004. On the other hand, in all countries, there was a lack of systematic instruments to address and prevent identified financial stability risks. Moreover, incentives to cooperate among supervisors remained weak well into the crisis, despite evident cross-border spillover effects.

The heterogeneity of banking supervisory practices and fragmentation of knowledge helped spread the financial crisis through a lack of information and the erosion of trust, and slowed its resolution. It accompanied an adverse feedback loop between weak banks, indebted sovereigns and fragile economies (Schoenmaker (2009) and Shambaugh (2011)). Some euro area countries experienced sudden stops, followed by a reversal of financial flows, mostly through banks (Constâncio (2013)). This was followed by a credit squeeze, with credit to households and firms drying up. However, problems went even deeper. There was also a fragmentation of financial oversight and regulations across all financial market segments, instruments, and

---

1 Many constituent national central banks were established much earlier. For example, the Banque de France was established in 1800, De Nederlandsche Bank in 1814, the Nationale Bank van België/Banque Nationale de Belgique in 1850, the Banco de España in 1856, the Banca d’Italia in 1893 and the Deutsche Bundesbank in 1957.

2 Some systemic risks were endogenous, given weak governance and the fact that the European Economic and Monetary Union (EMU) remained incomplete, lacking elements such as joint banking supervision (Dorrucci et al (2015)).

3 “Mental silos” exacerbated the collective failure to understand early on the fragilities that were building up in the financial system. The problem becomes acute when teams involved in related functions operate independently, each focusing on separate goals and tools, without sharing information. “Institutions structured in silos have trouble “connecting the dots” and grasping the big picture from limited information” (Angeloni (2017)).

institutions going beyond banks. At a global level, when the crisis struck, the dispersal of financial authorities and fragmentation of tasks proved a stumbling block.

The European financial reform process was initiated in 2009 with the de Larosière Report and two communications of the European Commission.[4] Together, they highlighted the need to adopt a "set of consistent core rules" and reshape the architectural framework for financial supervision in the EU. The first step in the reform process was the establishment of the European System of Financial Supervision (ESFS), which resulted in the setting-up of the European Systemic Risk Board (ESRB) in 2010 and in the transformation of the former Lamfalussy committees into three new European Supervisory Authorities (ESAs) by 1 January 2011. This institutional overhaul was accompanied by the establishment of a "Single Rulebook" aimed at harmonising prudential rules which all EU financial institutions have to abide by. With regard to the banking sector, the Single Rulebook also transposed into European law the set of reforms developed after the crisis by the Basel Committee on Banking Supervision (aka Basel III): this resulted in the EU Capital Requirements Directive (CRD IV) and the EU Capital Requirements Regulation (CRR).[5] Finally, the need to rationalise and harmonise banking supervision across the euro area came to the fore with the euro area crisis.

Thus, in 2012 European leaders decided to establish a pan-European supervisory authority at the European Central Bank. The final assent came in 2013 when the European Council agreed to the actual launch of a banking union.[6] Three pillars were envisaged, namely: joint supervision in the form of a single supervisory mechanism (SSM) with a strong central role for the ECB[7]; a common resolution framework in the form of a Single Resolution Mechanism (SRM); and a common European Deposit Insurance Scheme (EDIS), which is still under discussion at the political level.

The SSM started operating in November 2014 after the necessary preparatory work, as we shall describe in this paper. It is a system of banking supervision comprising the ECB and the national supervisory authorities of all participating countries. The SRM started operating in January 2016, with a Single Resolution Board and a Single Bank Resolution Fund, for the resolution of banks in Member States participating in the SSM. Essential for this is the establishment of an EU framework for bank recovery and resolution, as stipulated by the Bank Resolution and Recovery Directive (BRRD).[8] Discussions concerning the establishment of the common deposit insurance scheme are still ongoing.

Three crucial aspects should be noted here. The first is that a single European system of banking supervision had already been debated by academics and practitioners for a long time, even before the launch of the euro. This debate looked at two sides. The first concerned the actual need for a banking union in Europe, while the second had to do with the degree of proximity between central banking and banking supervision. The specific merits of unifying banking supervision in Europe were already discussed at the time of the Maastricht Treaty (Padoa-Schioppa (1999)). The ECB publicly expressed concerns about the lack of supervisory powers within the Eurosystem back in 2000 (Duisenberg (2000)). Joint banking supervision was also recommended by

---

[4] See the report of the High-Level Group on Financial Supervision in the EU published on 25 February 2009; the European Commission Communication of 4 March 2009 entitled "Driving European recovery" and the Communication of 27 May 2009 entitled "European financial supervision".

[5] The aim of Basel 3 is to strengthen the regulation, supervision and risk management of the global banking sector, improve risk management and governance for all banks, and strengthen banks' transparency and disclosure.

[6] The blueprint for the banking union was laid in the June 2012 report entitled "Towards a Genuine Economic and Monetary Union", drawn up by the President of the European Council, in close cooperation with the Presidents of the Commission, the Eurogroup and the European Central Bank. Mourlon-Druol (2016) casts the recent banking union effort in a historical perspective and highlights several initiatives taken by the European Commission in the 1960s and 1970s to harmonise the common regulatory and supervisory framework for banks.

[7] See Council Regulation (EU) No 1024/2013 of 15 October 2013 conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions.

[8] This directive provides common tools and confers powers for addressing a banking crisis pre-emptively and for managing failures of credit institutions and investment firms in an orderly way.

several academics, such as Paul Krugman. The links between central banking and banking supervision had been extensively debated in the literature (see Goodhart et al. (1992 and 1995) and Di Giorgio et al. (1999)).[9]

The second crucial aspect has a global connotation. Many central banks became involved in banking supervision. In the United Kingdom, the Financial Services Authority was shut down and its function and powers reassigned to the Bank of England, while the Prudential Regulation Authority was set up under its auspices. In the United States, the Dodd-Frank Act extended the Federal Reserve’s supervisory powers, although these are still shared with other federal and state agencies. Hence, the launch of the single supervisory mechanism (SSM) is also part of an international development that reversed the prevailing separation of functions (Zilioli (2019) and Angeloni (2017)).

The third crucial aspect is that the financial overhaul coincided with the implementation of exceptional, and also complex, monetary policy measures which are mostly transmitted through the banking system. The crisis revealed the broad nature of the ECB’s policy toolkit based on the Statute encompassing: the provision of liquidity on demand at a fixed rate and with full allotment since October 2008; a series of longer-term refinancing operations (LTROs) providing liquidity to banks against collateral; the announcement of an Outright Monetary Transactions (OMTs) programme (although never implemented); enhanced monetary policy communication through forward guidance (on both policy rates and asset purchases); a large-scale private and public sector asset purchase programme (APP); and the use of negative interest rates. A chronology of the ECB’s exceptional standard and non-standard monetary policy responses throughout the crisis is presented in Hartmann and Smets (2018). In the euro area, banks play a predominant role in the financial system. Thus, a feature of the ECB’s responses is that they have supported banks’ credit provision throughout the crisis.

The prolonged financial crisis also ignited a global debate on how to preserve financial stability and conduct macroprudential policies. Before the crisis, most institutions and practitioners overlooked the build-up of sizeable systemic risks or at least did not take them fully into account. Banking supervisors focused on the soundness of single institutions, while often neglecting risks that, while they might have seemed negligible for individual banks, could multiply in the aggregate (Beyer et al. (2017) and Constâncio (2016 and 2017)). Even rigorous national banking supervision might not on its own be sufficient to protect the financial system from systemic risk (Hanson et al. (2011)). Moreover, there were as yet no systemic information-sharing and financial backstops or crisis management and bank resolution framework.

Moreover, at European level, it was unclear who should be in charge of financial stability issues (Brunnermeier et al. (2009)), and the stability analysis was segmented (the “mental silos effect” referred to above). To address these gaps, the SSM Regulation conferred on the ECB a responsibility shared with national competent authorities in the area of financial stability and macroprudential policy (see Fahr and Fell (2017) for a recent analysis).[10] The goal today is to help make the financial system as a whole more resilient, a responsibility that the ECB would share with national authorities and other bodies, as we shall discuss below.

Why give the ECB these new responsibilities? There were a number of obvious benefits of conferring supervisory tasks to the ECB.[11] As a central bank, the ECB due to its monetary policy function has an intrinsic

---

[9] As this was not possible at the time, different regulatory approaches and supervisory practices were still followed across euro area countries. However, the Maastricht Treaty contained an “enabling clause”, which we will come back to.

[10] Article 127(6) of the EU Treaty enabled the European Council to confer on the ECB “specific supervisory tasks concerning policies relating to the prudential supervision of credit institutions and other financial institutions with the exception of insurance undertakings”. This “enabling clause” was used in 2012 to place supervision within the ECB. See also Article 5 of Council Regulation (EU) No 1024/2013.

[11] See also Constâncio (2012).

and deep interest in a stable financial system. Through its central bank functions it had also developed strong expertise in financial sector issues. In addition, there is a close relationship between microprudential supervision of individual institutions and the assessments of risks to the financial system, implying that there could be clear synergies in putting the two tasks under the same roof. There were also likely to be information-related synergies between supervision of banks and oversight of the payments system (typically a central bank task). Furthermore, an argument could be made for the importance of operational independence for the effective conduct of supervisory tasks.[12] Moreover, there were strong operational reasons for establishing the SSM at the ECB. The ECB had already built the infrastructure needed to operate the single monetary policy, gained the trust of financial markets, and successfully organised and run a network of Eurosystem technical committees. These are advisory bodies supporting the ECB's Governing Council. One was the Banking Supervision Committee (BSC). The ECB and the Eurosystem framework were thus able to successfully support the rapid deployment of the SSM. There was also a political dimension, as any other option would have required a Treaty change.

However, there is another side to the debate about integrating banking supervision in central banks. Several experts warn against reputational risks – e.g. when supervisory failures affect the credibility of monetary policy – and possible conflicts of interest. The latter could arise if there were a trade-off between setting monetary policy to secure price stability and pursuing financial stability. A time inconsistency problem is often cited (Valencia et al. (2012) and Smets (2014)). While a central bank will set the correct interest rate ex ante, it might have an incentive to keep the interest rate low ex post to protect the financial sector, leading to excessive inflation (Eijffinger et al (2012)). Another conflict of interest may arise if supervisors become excessively lenient towards weak banks that were important counterparties of central bank operations, to prevent or conceal losses in the central bank's balance sheet, i.e. if the central bank exercised forbearance (Angeloni (2017)). We shall return to these considerations later in the paper.

The architects of the SSM, mostly ECB and European Commission officials, were aware of the above risks and envisaged various levels/degrees of separation between the central banking and the supervisory functions. This is often referred to as the "separation principle", which is an important element in the interplay between monetary policy and supervision. As a start, the SSM legislation imposes a clear separation between setting monetary policy, which pursues price stability for the euro area as a whole, and single banking supervision, which focuses on banks' stability at the micro level (Article 25). Care is taken to maintain distinct roles and structures. Such a principle has been further developed in a number of internal ECB rules imposing discipline on the interaction between monetary policy and supervisory functions, neither of which should prevail over the other. The ECB is accountable to the European Parliament for the ways in which internal separation is ensured. The European Commission reviews the ECB supervision every three years, covering this and other aspects.

The aim of this paper is to explain how the enlarged ECB now works and carries out three complementary functions. The paper flags up similarities, synergies and overlaps between the ECB's monetary policy framework, the banking union's Single Supervisory Mechanism, and the monitoring of financial stability and conduct of macroprudential policy. The working of committees and aggregation of information is explained. Such an analysis helps in understanding the workings of the enlarged Eurosystem in response to the protracted financial crisis. The ECB's three functions are complex and interlinked, so communicating this information in a detailed enough way that is both useful to informed readers and accessible to the general public is quite a difficult undertaking. When necessary, references to legal and technical documentation are made. The most complete, and updated, set of information is available on the ECB website.

---

[12] The concept of independence for supervisory purposes is different than for monetary policy purposes (Article 130 TFEU). Article19 of the SSMR establishes its own independence principle (Mersch (2017)).

The paper is articulated in three main parts. The first part is about the history and institutional convergence of the three responsibilities. This part spans over Section 1 and Section 2 and reviews the origins of the ECB's three functions: i.e. their historical paths, mandate and objectives, and convergence processes. The second part of the paper is "functional" as it covers the structures, working arrangements, and decision-making under the three responsibilities. This discussion spans over the next four sections. Section 3 compares structures and degrees of centralisation versus de-centralisation of the three responsibilities. Section 4 looks at the working arrangements and the role of technical committees that are advisory bodies in all the Eurosystem's tasks. Section 5 presents the decision-making bodies, appointment process and voting rules, frequency of meetings and policy instruments. Section 6 discusses the three stages of the decision-making process: preparation, decision and implementation. The third part of the paper is about the new "conceptual framework" of the enlarged ECB. This discussion spans over the next two sections. Section 7 looks at overlaps and synergies between the ECB's three areas of responsibilities from a theoretical viewpoint. Section 8 looks at overlaps and synergies between the ECB's three areas of responsibilities from a practical standpoint by looking at four specific cases. Section 9 presents some final remarks and open issues.

2 A brief history of the ECB’s three responsibilities

The single monetary policy, single banking supervision and the ECB’s shared financial stability function have had different historical paths. While the monetary policy framework of euro area countries has converged over a long period, the unification of banking supervision and of the macroprudential framework was pushed ahead by the financial crisis.

2.1 Convergence of monetary policy frameworks

Monetary cooperation in Europe dates back to the activities of the Committee of Governors, which was established in 1964 and used to meet in Basel (Scheller (2004) and Angeloni et al. (2007)). At the time, exchange rates were tied by the Bretton Woods arrangement and monetary policies were guided by the need to safeguard exchange rate parities. In 1970, the Werner Report formulated a plan to establish a common currency in Europe in three stages. This report was considered too advanced for the level of economic integration prevailing among the prospective member countries at that time and was abandoned. Occasional exchange rate adjustments were still possible in the event of severe real misalignments.

In 1972, after the demise of the Bretton Woods system, the “Snake”, an exchange rate arrangement among some European countries, was created. The establishment of the European Monetary System (EMS) in 1979, with its exchange rate mechanism (ERM), improved monetary coordination among several European countries and strengthened links between several NCBs. The objective of the EMS-ERM was to instil increasing discipline in participating countries and foster changes in their national arrangements and institutions, thereby reducing the incidence of disruptive exchange rate devaluations and reaping the benefits of price stability.

In June 1988, the European Council appointed a Committee chaired by Jacques Delors to propose practical steps that led to the European Economic and Monetary Union (EMU). This included a three-stage timetable and key elements for the institutional design of the future Eurosystem (see Committee for the Study of Economic and Monetary Union (1989)). The brainchild of this committee became the Maastricht Treaty, which was signed in 1992. The treaty established the legal elements guaranteeing the separation between central banking and national governments. This step was essential to establish the independence of the future Eurosystem; it was a prerequisite for choosing price stability as its primary objective. It also stressed that the principle of decentralisation was to be applied wherever possible. In practice, this implied centralised decision-making and decentralised implementation of monetary policy.

In the run-up to the launch of the single currency in 1999, monetary policy institutions became more closely linked. Diverse milestones were shared by the NCBs of the forthcoming euro area, including: a recognition of the importance of transparency and accountability, the value of rules – and monetary policy frameworks – versus discretion; the realisation of the benefits of pursuing sustained low inflation (price stability); and a “quiet revolution” – as explained by Alan Blinder (Blinder 1997 and 2000) recognising the role of committee work, central bank independence and clear communication. Over time, central bank statutes, objectives, strategies and instruments became increasingly similar, as did central banking structures. There was a convergence of monetary policy frameworks and objectives across Europe (Angeloni et al. (2003) and Angeloni et al. (2007)). Central bankers across Europe also organised themselves in working committees sharing similar rules and tools (Jung et al. (2006)).

2.2 Convergence of banking supervision and supervisory frameworks

Despite the absence of a pan-European supervisory authority until 2014, some fora were established to encourage harmonisation of banking regulation and convergence of supervisory practices. The Committee of European Banking Supervisors (CEBS), the banking supervision committee that was the forerunner of the European Banking Authority (EBA), which is discussed later, enabled supervisors to share information and review best practices. A review of the debate and progress with harmonising banking regulation and supervision may be found in Mourlon-Druol (2016).

Supervisory responsibilities were distributed differently in different countries. In several countries, the NCB was also in charge of banking supervision; in others, banking supervision was conducted by a separate authority; and in a few countries the NCB shared the task with another authority. Moreover, it was recognised that the lack of harmonisation in the banking regulatory framework and the related supervisory practices could lead to concerns regarding the level playing field within the EU. This motivated a number of financial reforms, including the 2009 decisions to accelerate the work towards a Single Rulebook, and the launch of the European System of Financial Supervision, which established three new ESAs and the European Systemic Risk Board (ESRB). Then, in the aftermath of the sovereign debt crisis in the euro area, it became clear that a monetary union is not ultimately feasible without a banking union.

Harmonising the different legal frameworks across the EU through the creation of a fully-fledged Single Rulebook was one of the key drivers of the financial reform process outlined above. This resulted in the introduction of a single set of harmonised prudential rules which are binding on banks throughout the EU. The European Council coined the term ‘Single Rulebook’ in 2009 for the aim of a unified regulatory framework for the EU financial sector that would complete the single market in financial services.[13] This would help ensure uniform application of Basel III in all Member States, close regulatory loopholes and thus help make the Single Market function more smoothly. The European Banking Authority plays a key role in building up the Single Rulebook in banking.[14]

The Single Rulebook includes the following directives and regulations that have an impact on financial stability:

1. Capital Requirements Directive, CRD IV – Directive 2013/36/EU on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms (published as corrigendum), with the amendment introduced by Directive 2014/17/EU;

2. Capital Requirements Regulation (CRR), an EU law designed to reduce the risk of banks becoming insolvent. CRR – Regulation (EU) No 575/2013 on prudential requirements for credit institutions and investment firms (published as corrigendum);

---

[13] For a detailed discussion of the Single Rulebook from a legal perspective, see also Lefterov (2015). It highlights that the idea of a Single Rulebook for European banks can at least be traced back to a speech by Tommaso Padoa-Schioppa in 2004 who argued for “a streamlined, uniform and flexible regulatory framework across the EU”. See Padoa-Schioppa (2004).

[14] The EBA’s remit includes producing binding technical standards (BTS) for the implementation of the CRD IV package, the BRRD and the DGSD. BTS are legal acts specifying particular aspects of an EU legislative text (a directive or regulation) and designed to ensure consistent harmonisation in specific areas. BTS are always ultimately adopted by the European Commission through regulations or decisions. At that point, they become legally binding and directly applicable throughout the EU. This means that, on the date of their entry into force, they become part of the national law of all Member States. It is thus not only unnecessary, but actually prohibited to incorporate them into national law.

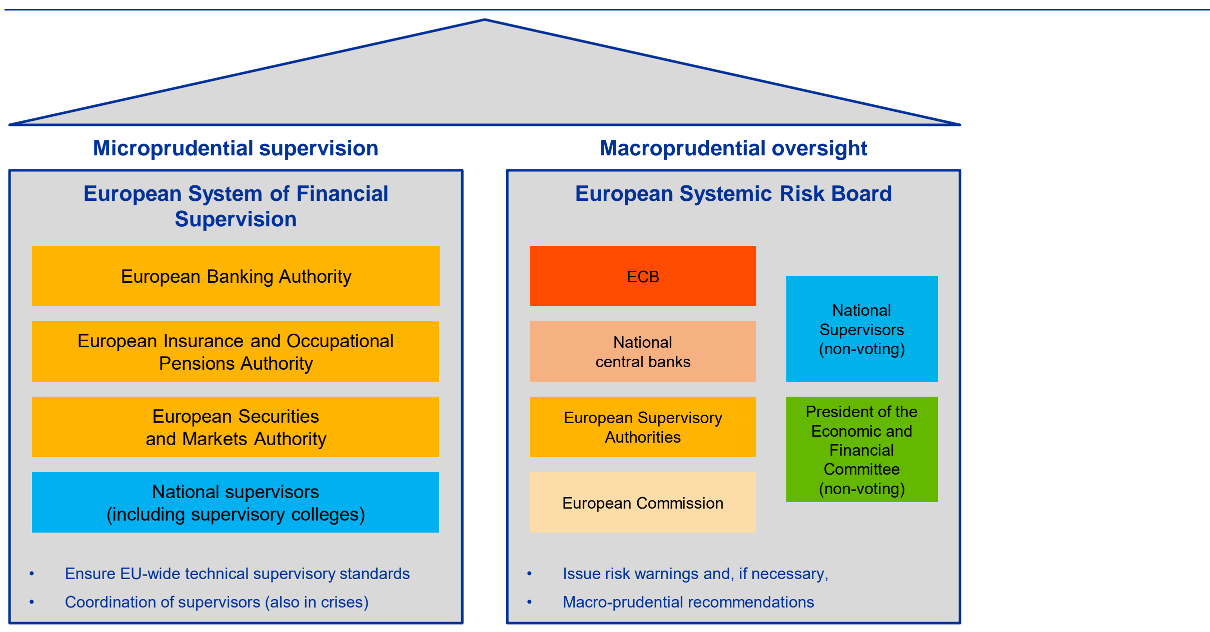
3. Bank Recovery and Resolution Directive (BRRD), 2014/59/EU, adopted in spring 2014 to provide authorities with comprehensive and effective arrangements to deal with failing banks at national level and cooperation arrangements to tackle cross-border banking failures[15]; and

4. A Directive on Deposit Guarantee Schemes (DGS).

Despite the above-mentioned reforms, the full harmonisation of the regulatory framework for banks has not yet been achieved. This is because EU regulations are binding laws that can be applied directly in all Member States, whereas EU directives must first be incorporated into national law. The resulting laws may differ somewhat across the various EU countries. Moreover, the Single Rulebook contains what are known as options and national discretions, or ONDs. These ONDs give supervisors and governments some leeway in how they apply the rules. The ECB and the national authorities agreed to harmonise the way in which they apply a large number of ONDs across the entire euro area. Still, some discrepancies remain, as some ONDs fall within the remit not of supervisors, but of governments. Last, there are some supervisory powers provided for in national law, which do not derive directly from European law (Nouy (2014)).

Figure 1

New supervisory architecture in the EU (before the setting-up of the SSM)



Another important component of the financial reform process in the EU is represented by the European System of Financial Supervision (ESFS). This system, which came into operation between end-2010 and early 2011, comprises two pillars (see Figure 1). One is a “microprudential pillar” which established three new ESAs: the European Banking Authority (EBA), the European Insurance and Occupational Pensions Authority (EIOPA) and the European Securities and Markets Authority (ESMA). The second one is the “macroprudential oversight pillar”, comprising the European Systemic Risk Board (ESRB).

[15] It requires banks to draw up recovery plans for surmounting financial distress. It also grants national authorities powers to ensure the orderly resolution of failing banks, with minimal costs to taxpayers. The directive includes rules on setting up national resolution funds, with contributions from all financial institutions, based on each institution's size and risk profile. The EU's bank resolution rules ensure that the banks' shareholders and creditors pay their share of the costs through a “bail-in” mechanism. If that is still not sufficient, the national resolution funds set up under the BRRD can provide the resources needed to ensure that a bank can continue operating while it is being restructured.

Significant progress has also been made towards harmonising reporting standards. With the incorporation of harmonised data templates on common reporting (COREP) and financial reporting (FINREP), all banks report over 800 data points in a standardised manner on a quarterly basis. In addition, the data collections in the context of the EBA EU-wide stress test exercises and their related publications via the "transparency exercises" provide an unprecedented amount of granular and harmonised bank-level exposure data. When analytical credit datasets (AnaCredit) also become available, harmonised loan data reporting at bank level will provide supervisors and policymakers with a wealth of information to which they would not previously have had access from aggregate-level data.

The birth of the Single Supervisory Mechanism (SSM)

On 27 June 2012, Spain requested financial support for its banking system, while Cyprus requested a full adjustment programme. Two days later, on 29 June 2012, the European Council agreed to create a European banking supervision mechanism and a resolution mechanism. This first step towards the banking union required a Commission proposal. On the basis of this proposal, the European Council agreed in 2013 to launch a Single Supervisory Mechanism (SSM) as part of the banking union. The SSM started operating in November 2014, after the necessary preparatory work and a comprehensive assessment of about 130 significant banks accounting for about 95% of euro area banking sector assets. Today, the SSM is an integral part of the ECB.

The SSM's goal is "to contribute to the safety and soundness of credit institutions and the stability of the financial system within the Union and each Member State, with full regard and duty of care for the unity and integrity of the Internal Market based on equal treatment of credit institutions."[16] Banking supervision should be applied in a harmonised and effective manner, and it should be the same for all credit institutions. For the SSM to achieve its mandate, several layers of harmonisation are needed within the euro area of legal and supervisory frameworks, as well as in the harmonisation of reporting standards. This process is crucial to ensure that European banks are regulated and supervised in a consistent fashion, and, even more importantly, to avoid regulatory arbitrage within the perimeter of the SSM. To pursue these objectives, the SSM has the authority to: conduct supervisory reviews; on-site inspections and investigations; grant or withdraw banking licences; assess banks' acquisition and disposal of qualifying holdings; ensure compliance with EU prudential rules; and set capital requirements above minimum levels on a case-by-case basis, when this is justified in the context of the annual supervisory review and evaluation process (SREP).

The SSM and national competent authorities (NCAs) are guided by a set of shared principles: 1) the SSM aspires to be a best practice framework, covering objectives, instruments, and powers used; 2) integrity and decentralisation; 3) homogeneity within the SSM; 4) consistency with the Single Market rulebook; 5) supervisory tasks are carried out in an independent manner, while also being subject to high standards of democratic accountability; 6) risk-based approach; 7) proportionality, as SSM practices must be commensurate with the systemic importance and risk profile of the credit institutions under supervision; 8) adequate levels of supervisory activity for all credit institutions; and 9) effective and timely corrective measures.

---

[16] Council Regulation (EU) No 1024/2013 of 15 October 2013 conferred specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions. The supervisory practices, legal framework, organisation and governance of the SSM, plus other features, are set out on the SSM's website.

However, with the migration to the SSM, challenges at a new level emerged. Gren, Howarth and Quaglia (2015) discuss the challenges in mechanism design emerging from the process of delegating banking supervision to the ECB, and the principal-agent relation of the ECB with NCAs.

2.3 Introduction of macroprudential frameworks

One of the key lessons of the global financial crisis was that while robust and rigorous microprudential supervision is necessary to ensure a sound financial system, it may not be sufficient to safeguard financial stability. This is because it may overlook systemic risks and externalities across institutions, which, if left unaccounted for, have the potential to undermine the stability of the financial system. It therefore became clear that a macroprudential dimension complementing micro-level supervision was necessary to address such externalities and prevent idiosyncratic risks from mutating into systemic ones which could seriously damage the financial system and the real economy.

At the European level, the first step towards the establishment of a macroprudential policy framework is represented by the creation of the European Systemic Risk Board (ESRB), the "macroprudential oversight pillar" of the new European System of Financial Supervision (Figure 1). The launch of the ESRB in 2010 marks the official start of supranational macroprudential oversight for the whole EU. The ECB and all EU national central banks (NCBs) have a leading role in contributing to the work of the ESRB given their expertise and responsibilities in the area of financial stability. The ECB provides analytical, statistical and logistic support (including the ESRB Secretariat), and is also represented on the ESRB's General Board. National supervisors are also represented and contribute to the ESRB on the basis of their specific expertise. All three EU supervisory agencies are also involved in the ESRB's work: they provide their perspectives as banking, insurance and pension funds, and financial market supervisors. While the ESRB cannot issue legally binding decisions, it can adopt warnings and recommendations on macroprudential matters to relevant authorities within the EU.

At the euro area level, an important step was the launch of the SSM in 2014, which assigned a key macroprudential role to the ECB. First, the ECB should be consulted before the activation of national macroprudential measures by SSM countries in the context of its responsibility for the effective and consistent functioning of the SSM. Second, the SSM Regulation conferred "topping up" powers on the ECB with respect to certain macroprudential instruments enshrined in the EU legislation.[17] Finally, the ECB role also involves facilitating discussions among the SSM central banks and banking supervisory authorities on the consistent identification and monitoring of systemic risks to financial stability – both at country and SSM-wide level – and on the consistent application of macroprudential policies.

These new responsibilities in the macroprudential realm necessitated the setting-up of new institutional arrangements and approaches to the analysis of macroprudential risks and related policy measures. Since macroprudential analysis is still a relatively new field, it was necessary to create a macroprudential framework more or less from scratch. Broadly speaking, this framework is based on four main elements:

- Deciding on a definition of "financial stability" and "systemic risk". The ECB defines systemic risk "as the risk that financial instability significantly impairs the provision of necessary financial products and

[17] As stipulated by Article 5 of the SSM Regulation; see Council Regulation (EU) No 1024/2013 of 15 October 2013.

services by the financial system to a point where economic growth and welfare may be materially affected" (see ECB (2009)).[18]

- Agreeing on the specific objectives and principles of macroprudential policy.
- Assembling an analytical toolkit to identify and classify several sources of systemic risks.[19] This is a prerequisite for subsequent reduction of such risks.
- Providing the macroprudential authorities with the procedures and policy instruments necessary for them to be able to intervene where and when they may be needed.

2.4 Summary

Monetary policy institutions have converged gradually over the last 50 years. However, the convergence of supervisory institutions and prudential practices only gathered pace in the aftermath of and in response to the global financial crisis and the sovereign debt crisis in the euro area. The supervisory doctrine is quite well established, but the way it is applied needs to be harmonised across the euro area and is still hampered to some extent by remaining options and national discretions. Likewise, the global financial crisis and then the sovereign debt crisis in the euro area triggered the establishment and harmonisation of macroprudential frameworks at national and euro area level. However, this is still very much an ongoing process, especially as experience with applying and disseminating macroprudential policy is still in its infancy (see BIS (2016a, 2016b), and ECB (2016), Brunnermeier and Schnabel (2016), and Kelber et al. (2014)).

---

[18] When systemic risk materialises there is destruction of economic value and losses in terms of economic growth (Constâncio (2016)). However, this is not the only definition. For the ESRB, 'systemic risk' means a risk of disruption in the financial system with the potential for a serious negative impact on the Single Market and the real economy. All types of financial intermediaries, markets and infrastructure may potentially be systemically important to some degree. Plus the remit for the ESRB covers the whole of the EU. See Article 2(c) and also Article 3(1) of the ESRB Regulation, No 1092/2010.

[19] As highlighted above, definitions of financial instability and analytical tools and processes to identify and measure systemic risks were already in place in many central banks (including the ECB). The major innovation was the need to link the identification of systemic risk with macroprudential policy objectives and instruments.

3 Comparing structures (Part I): centralisation versus decentralisation

When choosing the appropriate organisation for a central banking function within a monetary union, there are trade-offs to be considered, for instance between the benefits and costs of a centralised structure as opposed to a decentralised one.

3.1 Single monetary policy: a strong centre, yet decentralised implementation

The 1992 Maastricht Treaty provides that, if deemed possible and appropriate, the ECB shall operate through the national central banks (NCBs) of euro area countries, through interinstitutional cooperation. If not, the operations will be carried out centrally. Such decentralisation of the operations, when possible, brings several benefits.[20] The regional presence helps the ECB to gather country-specific economic and financial information (and be aware of national legislation). NCBs are well placed to deliver policy messages to the local audience. They are also in charge of the bulk of monetary policy implementation, and contribute expertise for all central bank functions, such as the process of preparing monetary policy, for instance in the case of the Eurosystem's macroeconomic projections (forecasts), and in technical discussions in all Eurosystem committees.[21]

Hence, the Eurosystem's operational framework was set up along decentralised lines. In fact, in the case of monetary policy, decisions are centralised while NCBs perform almost all the Eurosystem's operational tasks. At the same time, Goodfriend suggests that a decentralised system needs a strong centre with a large enough staff to support policymakers (Goodfriend (2000)). Moreover, a strong chair can encourage diverse views in the policy committee and help build consensus on decisive and timely policy actions. Such trade-offs apply equally to the decision-making body, the Governing Council, and to the various advisory committees, working groups and task forces supporting policy preparation.

The ECB's monetary policy decision-making process has a clear euro area perspective. To avoid running the risk of becoming subordinated to regional interest groups, it does not focus on regional aspects. Monetary policy decisions are taken centrally by the Governing Council of the ECB to ensure the unity of such monetary policy. The ECB's Executive Board is responsible for preparing for Governing Council meetings with the help of ECB staff, to ensure the efficiency of the process (see Jung and Mongelli (2015)).

3.2 Single supervision: a strong centre and strong coordination

For the Single Supervisory Mechanism (SSM), on the other hand, a mix of centralisation and decentralisation was chosen. Within the euro area, the SSM is responsible for the supervision of about 4,700 banks. The ECB directly supervises entities that are classified as significant. As of January 2019, 119 entities are classified as significant institutions (SI). Groups can have parent and subsidiary banks in several countries.

---

[20] Zilioli and Selmayr (2001) call it "decentralised centralisation". An example of interinstitutional cooperation is provided by the diversification of research and analysis within a system of central banks. This brings a variety of perspectives to policy deliberations and helps in better understanding the transmission of monetary policy. This is organised by the ESCB Research Committee.

[21] Eurosystem committees are provided for in the Rules of Procedure of the Executive Board of the ECB.

Significance is assessed and regularly reviewed on the basis of certain criteria. According to the SSM Framework Regulation a bank is considered significant if any of the following conditions is met:

- the total value of its assets exceeds EUR 30 billion(Article 50(2) SSMFR);
- the ratio of its total assets over the GDP of the participating Member State of establishment exceeds 20%, unless the total value of its assets is below EUR 5 billion (Article 56 SSMFR);
- it is one of the three most significant credit institutions established in a Member State (Article 65(1) SSMFR);
- it has requested or is a recipient of direct assistance from the ESM (Article 61 SSMFR);
- the total value of its assets exceeds EUR 5 billion and the ratio of its cross-border assets/liabilities to its total assets/liabilities is above 20% (Article 59 SSMFR).

The less significant institutions (LSI) are directly supervised by national competent authorities (NCAs), subject to the oversight of the ECB to ensure consistent application of high supervisory standards. An overview of the NCAs across the euro area is provided in Table 1. The ECB is also involved in supervising cross-border institutions and groups, either as home supervisor or as a host supervisor in colleges of supervisors. All credit institutions under the SSM's supervision are subject to the same supervisory approach, set out in the internal SSM Supervision Manual.[22] Today, national banking supervisors are referred to as national competent authorities (NCA, see Table 1).

[22] See Guide to Banking Supervision, November 2014, pp. 30-31 and ECB Annual Report on supervisory activities, March 2016, pp. 16-17.

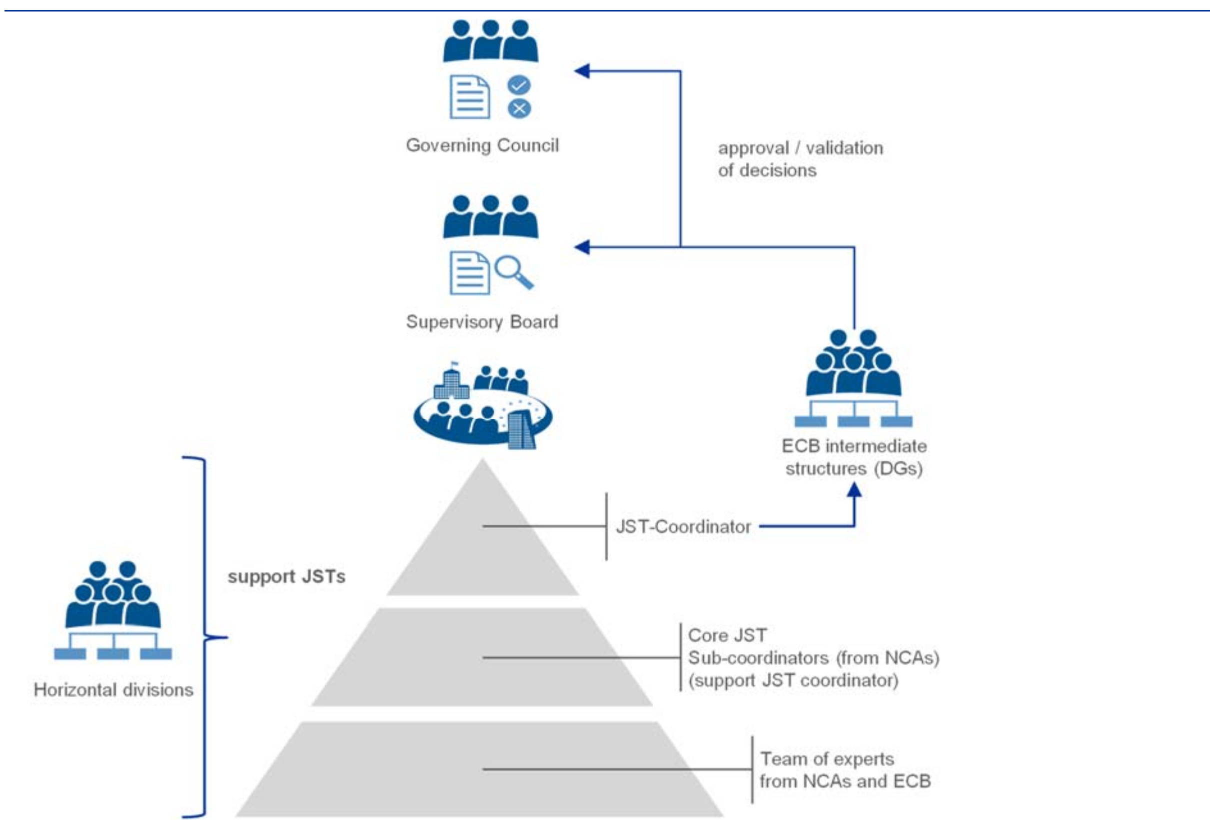
Table 1
National central banks and national competent authorities across the euro area

Country	National competent authority (NCA)	National central bank (NCB)
Austria	Finanzmarktaufsicht	Oesterreichische Nationalbank
Belgium	Banque Nationale de Belgique	Banque Nationale de Belgique
Cyprus	Central Bank of Cyprus	Central Bank of Cyprus
Estonia	Finantsinspektsioon	Eesti Pank
Finland	Finanssivalvonta	Suomen Pankki
France	Autorité de contrôle prudentiel et de résolution	Banque de France
Germany	Bundesanstalt für Finanzdienstleistungsaufsicht	Deutsche Bundesbank
Greece	Bank of Greece	Bank of Greece
Ireland	Central Bank of Ireland	Central Bank of Ireland
Italy	Banca d'Italia	Banca d'Italia
Latvia	Finanšu un kapitāla tirgus komisija	Latvijas Banka
Lithuania	Lietuvos bankas	Lietuvos bankas
Luxembourg	Commission de Surveillance du Secteur Financier	Banque centrale du Luxembourg
Malta	Malta Financial Services Authority	Central Bank of Malta
Netherlands	De Nederlandsche Bank	De Nederlandsche Bank
Portugal	Banco de Portugal	Banco de Portugal
Slovakia	Národná banka Slovenska	Národná banka Slovenska
Slovenia	Banka Slovenije	Banka Slovenije
Spain	Banco de España	Banco de España

Joint supervisory teams (JSTs) have been established for each significant banking institution. JSTs comprise staff from both the ECB and the national competent authorities (NCAs) and are responsible for implementing the SSM's day-to-day supervisory activities (Figure 2).[23] Every JST is led by a coordinator at the ECB, supported by sub-coordinators within the national competent authority of the countries where the group's subsidiary is considered a significant institution. To help ensure impartiality, JST coordinators are not usually from the same country as the credit institution's headquarters. They are appointed for between three and five years.

[23] The structure of specific JSTs reflects and is adapted to, the features of the institution under supervision, such as size, complexity, business model, and risk profile.

Figure 2
The working of the SSM



Within the current governance set-up, there is one asymmetry. In some countries (e.g. Belgium and Italy) NCBs have supervisory responsibilities and the NCA is also the NCB (Banque Nationale de Belgique and Banca d'Italia). Such NCBs have a seat both on the SSM Supervisory Board and the ECB Governing Council; in other cases, the NCB does not have supervisory responsibilities (e.g. Germany) and the NCA does not have a seat in the Governing Council. Given the rotating voting scheme for the Governing Council, some procedures are provided for in the SSMR.

3.3 Shared macroprudential responsibility

The Single Supervisory Mechanism (SSM) Regulation also conferred responsibilities on the ECB in the area of macroprudential policy. The aim is to bolster the resilience of the whole financial system. The SSM Regulation assigns to national authorities the power to implement macroprudential measures, whereas the ECB can exert peer pressure and challenge the national authorities, and has the power to tighten several of these measures, i.e. it has "topping-up power".[24] Conversely, the ECB cannot initiate national macroprudential measures. The analysis of cross-border effects and discussions about "reciprocation of national macroprudential policies" are also fundamental.[25] Here, the ECB and the national authorities are in

[24] Some note that the basis of the ECB's macroprudential role is Article 127(5) TFEU, which speaks of a 'contribution'. The ECB's "topping-up" power relates to those macroprudential instruments embedded in EU law; see Article 5 of the SSM Regulation (Council Regulation (EU) No 1024/2013).

[25] For a detailed discussion of cross-border spillover effects from national macroprudential measures and the need for reciprocity, see also Chapter 11 of the ESRB Handbook on Operationalising Macroprudential Policy in the European Union. See also ECB (2019b).

more “symmetric” roles, and the policy discussion examines the adequacy of the macroprudential stance across the geographic perimeter covered by the SSM, not just in individual Member States.

To pursue these objectives the ECB set up a macroprudential policy framework for the whole euro area, in cooperation with national authorities. Macroprudential responsibilities within the euro area are shared between the ECB and national authorities (NCBs, NCAs or other).[26] The governance of macroprudential policy thus differs from either a single monetary policy or single supervision. The system-wide perspective on macroprudential policy fills a gap left by traditional bank supervision (Constâncio (2014) and ECB (2016)). At the same time, the shared responsibility also reflects the fact that financial imbalances often build up along national boundaries, as the banking sector in the euro area is still rather fragmented. For this reason, macroprudential measures targeting country-specific developments will often be more effective and appropriate compared to area-wide measures (see Darracq Pariès et al. (2015) and Constâncio (2018)). This warrants a strong role for national competent authorities in identifying systemic risks and calibrating relevant policy measures.

Nonetheless, the ECB has a key role to play in mitigating cross-border spillover effects, to ensure a level playing field and provide an area-wide perspective and consistency in policy decisions (see also Constâncio et al., 2018 for a discussion of the macroprudential set-up and analytical framework of the ECB). In any case, the ultimate decision-making body in this field is the ECB Governing Council, working together closely with the SSM Supervisory Board, which has a detailed knowledge of the banking system (see also discussion below), and with the national macroprudential authorities. Table 2 provides an overview of the national macroprudential and designated authorities.

[26] At the EU level, the ESRB facilitates the macroprudential discussion, including going beyond banking. The network created by the ESRB, which also includes non-SSM and non-banking/non-central banking authorities, can promote the sharing of information, methodologies and best practices across its constituency (see the ECB’s Macroprudential Bulletin – March 2016).

Table 2

National central banks, macroprudential authorities and designated authorities across the euro area

	National central bank (NCB)	Macroprudential authority[1)]	Designated authority [2)]
Austria	Oesterreichische Nationalbank	Finanzmarktstabilitätsgremium (Financial Market Stabil. Board)	Finanzmarktaufsichtsbehörde (Austrian Financial Market Authority)
Belgium	Nationale Bank van België/ Banque Nationale de Belgique		
Cyprus	Central Bank of Cyprus		
Estonia	Eesti Pank		
Finland	Suomen Pankki	Finanssivalvonta (Finnish Financial Supervisory Authority)	
France	Banque de France	Haut Conseil de Stabilité Financière (High Council for Financial Stability)	
Germany	Deutsche Bundesbank	Ausschuss für Finanzstabilität (Financial Stability Committee)	Bundesanstalt für Finanzdienstleistungsaufsicht (Financial Supervisory Authority)
Greece	Bank of Greece		
Ireland	Central Bank of Ireland		
Italy	Banca d'Italia	Comitato per le politiche macroprudenziali	Banca d'Italia
Latvia	Latvijas Banka	Latvijas Banka	Finanšu un kapitāla tirgus komisijas (Financial Supervisory Authority)
Lithuania	Lietuvos bankas		
Luxembourg	Banque centrale du Luxembourg	Comité du risque systémique (Systemic Risk Committee)	Commission de Surveillance du Secteur Financier (Financial Supervisory Authority)
Malta	Central Bank of Malta		
The Netherlands	De Nederlandsche Bank	Financieel Stabiliteitscomité (Financial Stability Committee)	De Nederlandsche Bank
Portugal	Banco de Portugal		
Slovakia	Národná banka Slovenska		
Slovenia	Banka Slovenije	Odbor za finančno stabilnost (Financial Stability Board)	same
Spain	Banco de España	Autoridad Macroprudencial Consejo de Estabilidad Financiera (AMCESFI, the Macroprudential Authority Financial Stability Board)	Banco de España

Sources: ECB and ESRB.
Notes: 1) Macroprudential authority established in accordance with Recommendation ESRB/2011/3.
2) Designated authority established in accordance with Article 136 of Directive 2013/36/EU (CRDIV).

3.4 Summary

The degree of centralisation and decentralisation in executing the three functions is different. In the case of monetary policy, decisions are centralised while NCBs perform almost all the Eurosystem’s operational tasks. However, there is a strong centre for functional reasons, i.e. for the singleness of monetary policy and a clear euro area perspective. For microprudential supervision, a mix of strong centralisation and strong coordination is instead necessary. The need for centralisation is principles based: for guidance, a harmonised approach, securing best practices, consistency and so on. The governance of macroprudential oversight is different: it is shared between national authorities, the ECB and other supranational entities. The ECB sets up and manages a macroprudential policy framework for the whole euro area. The analysis of financial risks at national and euro area level and their cross-border effects is organised around regular reporting to and discussion in the Financial Stability Committee. National authorities have a wide range of tools to implement

macroprudential measures, whereas the ECB has topping-up powers only for the tools embedded in the CRD/CRR.

4 A comparison of structures (Part II): working arrangements and committees

Maier (2007) defines a monetary policy committee as the body in charge of taking monetary policy decisions. He characterises them as "a group of people sharing information and taking a decision together, on the basis of the information reviewed (and revealed)". Eurosystem committees, however, are advisory bodies supporting the ECB Governing Council.[27] What is the rationale for these advisory bodies? When the euro was launched, links between the ECB and NCBs became systematic, and had to be structured in order to process a wide range of economic, financial and monetary data; set up a monetary policy framework; conduct staff projections; and coordinate a wide range of decentralised activities. Thus, Eurosystem committees bring together ECB and NCB experts, and coordinate essential policy work that enables the Governing Council to take decisions and the Eurosystem to function.

4.1 A blueprint from a distant past

The blueprint was the committee structure established by the Committee of Governors in 1964, which was transferred to the European Monetary Institute (EMI), the ECB's predecessor, and then to the ECB, with the necessary adjustments (Scheller (2004)). This committee structure enables members of today's Governing Council to receive and share information and make joint evaluations on which they base their monetary policy and supervisory decisions. It is Eurosystem committees that process a wide range of data and information to support the Governing Council's deliberations.[28] Hence, these advisory bodies help shape views and build consensus within the Eurosystem. They provide expertise and technical advice in the form of letters and reports, which serves as valuable input into the deliberations of the ECB's decision-making bodies. Some technical committees can be organised in working groups, sub-groups and ad hoc task forces (for specific assignments).

Conversely, the SSM's supervisory work is carried out mainly through joint supervisory teams (JSTs), which are responsible for monitoring specific systemic banks or banking groups. As discussed below, the SSM makes less use of advisory committees for the implementation of its tasks. The main subject of this section is thus the committees set up to support the monetary policy function and the working of the JSTs for the SSM.

4.2 Current Eurosystem committee structure

At present, committees operate in most functional areas of the Eurosystem's work (see Figure 3a, which is not exhaustive).[29] They also operate a variety of working groups or task forces.[30] The number of committees has

[27] They are responsible for coordinating Eurosystem tasks that involve NCBs. Article 9 of the ECB's Rules of Procedure states that it is the role of committees "to assist in the work" of the ECB's decision-making bodies. They are required to report to the Governing Council via the Executive Board. Some committees can meet in ESCB composition, or discuss certain agenda items in ESCB composition and others in Eurosystem compositions. An example is the macro-projections.

[28] All decisions concerning the Eurosystem's working arrangements and committee structure fall within the Governing Council's remit. The Executive Board is responsible for determining the ECB's internal structure. Similarly, the NCBs have full autonomy as regards establishing their own internal structures.

[29] For the sake of brevity the figure does not list the Operational Developments Committee (ODC), the Risk Management Committee (RMC), the Statistics Committee (SC), the Budget Committee (BUCOM), and the Human Resources Committee (HRC).

grown somewhat, in the light of the additional tasks to be performed by the Eurosystem. A Council Task Force and the Eurosystem/ESCB Communications Committee (ECCO) have been set up to address issues of internal governance of the Governing Council and external communication respectively.

Figure 3a
Committee structure of the Eurosystem

While the various committees listed above support the three policy functions (monetary policy, banking supervision, and macroprudential policy) in various ways, each policy function relies in particular on a specific set of committees for its key policy discussions. This is described in more detail below.

Monetary policy decision-making and implementation

The Monetary Policy Committee (MPC) supports the Governing Council by providing the basis for setting the single monetary policy of the euro area. The MPC contributes to areas such as: assessing issues relating to the conduct of monetary policy in the euro area; reviewing the underlying tools for assessing current economic, monetary and financial developments; preparing a set of economic projections for the euro area as a whole (see next section); exchanging views and information on the economic, monetary, and financial

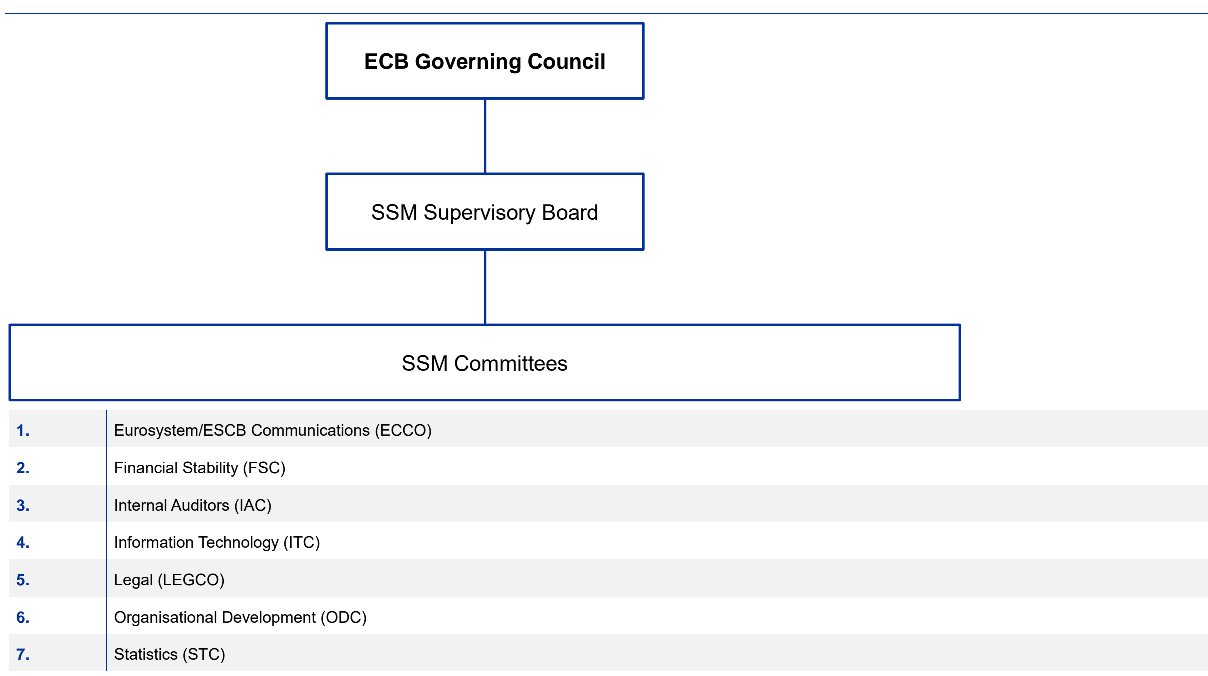
[30] The Eurosystem is also responsible for tasks including conducting foreign exchange operations, holding and managing the Member States' official foreign reserves, and promoting the smooth operation of payment systems. None of these duties are dealt with in this paper.

situation from a euro area perspective; assessing the overall performance of the Eurosystem's operational monetary policy framework. The Market Operation Committee (MOC) helps the Eurosystem implement the single monetary policy, including foreign exchange operations and the management of the ECB's foreign reserves. The MOC has also taken over a task that used to fall to the EMI's Foreign Exchange Policy Sub-Committee (FXPSC): preparing discussions on exchange rate arrangements. The latter task is also covered by the IRC, which assists the Governing Council in defining and maintaining international relations.

Banking supervision

Some of the above committees, such as ECCO, FSC, HRC, IAC, ITC, LEGCO, ODC and STC, also meet with their SSM composition. See Figure 3b.

Figure 3a
Committee structure of the Eurosystem



Macroprudential policy

The Macroprudential Forum discusses macroprudential policy issues on a regular basis, incorporating both the micro- and the macroprudential perspectives across the SSM. It comprises the members of the ECB Governing Council and the SSM Supervisory Board. The technical committee supporting the ECB in the area of macroprudential policy is the Financial Stability Committee (FSC) of the European System of Central Banks (ESCB). The FSC can also meet in SSM composition including high-level representatives from the national central banks and supervisory authorities of the SSM's Member States. They meet to discuss macroprudential measures and prepare draft decisions relating to macroprudential concerns and/or the activation of macroprudential tools. Such decisions are then forwarded to the SSM Supervisory Board and the ECB Governing Council (more below).

4.3 Summary

Upon the launch of the euro, a wide range of committees and sub-committees was indispensable to process a wide range of data and coordinate essential policy work that enables the Eurosystem to function and policy decisions to be taken. The SSM capitalises on many of these "historical" ECB committees and has fewer dedicated committees itself. Similarly, the analysis of financial stability also capitalises on the same "historical" ECB committee structure and works through a dedicated committee to assess and discuss financial stability and macroprudential policy issues. The committee structure fosters cooperation and exchanges of views at the relevant technical level between the centre (i.e. the ECB) and national authorities.

5 The ECB's decision-making bodies

5.1 Main decision-making bodies

All policy decisions in the Eurosystem are taken by the **Governing Council**. The latter comprises the 19 governors of euro area national central banks (NCBs) plus the six members of the ECB Executive Board. Until the operational start of the SSM in 2014, the Governing Council's main responsibility was to formulate monetary policy for the euro area. The ECB Governing Council has also been responsible for banking supervision since November 2014, and has acquired macroprudential tasks. In setting monetary policy, the Governing Council is supported by the Executive Board. When discussing banking supervision and macroprudential issues, it is supported by the SSM's Supervisory Board.[31]

The ECB **Executive Board** consists of the President, the Vice-President and four other appointed members. Its main task is to prepare the decisions to be taken by the Governing Council, to implement monetary policy decisions and to exercise certain powers delegated to it by the Governing Council. The Executive Board is also responsible for the current business of the ECB, i.e. it exercises organisational and managerial powers regarding the ECB business areas (include those that are part of the SSM). Finally, in consultation with the Governing Council, the Executive Board determines the ECB's internal structure.[32] In the case of monetary policy setting, the Executive Board prepares interest rate decisions, on the basis of an infrastructure that aggregates information on the overall macroeconomic conditions in the euro area. The NCBs participate in the analysis and previous weighing of policy options. Such an arrangement makes it possible to manage the potential trade-off between timeliness in preparing monetary policy decisions and regional participation, and help to avoid unnecessary duplication of tasks.[33]

The **SSM Supervisory Board** is an internal body of the ECB. It prepares the draft decisions, which are adopted by the Governing Council under the non-objection procedure. If the Governing Council does not object within a defined period of time, the decision is deemed to have been adopted. The Supervisory Board is responsible for the planning and execution of all supervisory tasks conferred on the ECB (see Article 26(1) SSMR). It has a minimum of 25 members but could grow through "opt-ins", i.e. if new countries adopted the euro and/or entered into a cooperative arrangement with the ECB. All Supervisory Board members – apart from the SSM's vice-chair, who also belongs to the Executive Board and therefore the Governing Council – are debarred from involvement in setting monetary policy; an application of the separation principle.

[31] There is also the General Council that comprises the President and Vice-President of the ECB, and the governors of the national central banks (NCBs) of the 28 EU Member States. It contributes, among other things, to: the preparation of the ECB's annual report; the laying-down of the conditions of employment of the members of staff of the ECB; and the necessary preparations for irrevocably fixing the exchange rates of the currencies of the "EU Member States with a derogation" against the euro (see Article 46 of the Statute). The General Council is not discussed further in this paper. For more information, see the ECB's website.

[32] There is a third ECB decision-making body, the General Council, which has no responsibility for monetary policy decisions in the euro area. The General Council carries out those tasks inherited from the EMI in relation to the introduction of the euro in the NMS (e.g. the Convergence Report) which do not fall under the responsibility of the Governing Council. The General Council comprises the President and Vice-President of the ECB and the Governors of all of the EU countries' national central banks.

[33] According to Moutot et al. (2008), the ECB's Governing Council has been set up as a two-tiered monetary policy committee with a hub-and-spokes structure. The Executive Board is the hub (the central component), while the Governors of the NCBs are the spokes (the regional components). The hub-and-spokes nature of the ECB's monetary policy decision-making process resembles the committee structure of other federal central bank systems, such as the Federal Reserve (Fed) and the Bundesbank before the start of EMU. The Fed's FOMC comprises up to seven Board members and 12 regional Fed Presidents, five of whom have the right to vote. The hub's voting rights are permanent, whereas those of the spokes rotate annually (with the exception of the President of the New York Fed, who is a permanent voting member of the FOMC).

However, the ECB's Governing Council has ultimate decision-making powers under a "non-objection procedure".[34] Thus, the SSM's Supervisory Board differs in its composition and tasks from the ECB's Executive Board, which has six members, and the Governing Council, which now has 25 members. The Supervisory Board prepares and monitors several thousand decisions on banking supervision each year. In practice, written procedures and short deadlines are the norm for most supervisory decisions, thus creating space and time for the Supervisory Board and the Governing Council to concentrate on the most relevant topics.

5.2 Voting system

When making monetary policy decisions and unless otherwise provided by the Statue of the ESCB and of the ECB, the Governing Council shall act by simple majority.[35] Each member has one vote, and, in the event of a tie, the President has the casting vote (see Article 10.2 of the Statute of the ESCB). However, in practice, the Governing Council decides mostly by consensus.

The size of the Governing Council depends on the number of euro area countries. Article 10.2 of the Statute of the ESCB stipulates a maximum number of 21 voting rights (i.e. 15 NCB governors and six Executive Board members). Once the number of euro area countries exceeded 15 and until it reaches 22, a rotation system began and is currently in place. (see ECB (2003)). The aim of the rotation system is to maintain the efficiency of the Governing Council's decision-making process. On 1 January 2009, with the accession of Slovakia, the euro area reached 16 members. On the basis of Article 10.2, the Governing Council decided to extend the initial voting regime until there were more than 18 euro area countries (see ECB (2008b)). Meanwhile, Estonia (2011), Latvia (2014) and Lithuania (2015) joined the euro area and the SSM; bringing the total number of euro area countries to 19, although the new voting arrangements allow for only 18 voting countries. At present, the voting rights of members of the Governing Council change on a monthly basis, so individual Council members have only short periods without a vote.

5.3 Frequency of meetings and instruments

Although the ECB has acquired some new tasks, its primary objective is the pursuit of price stability. This goal has been quantified by the Governing Council, and the ECB is held publicly and institutionally accountable for it. The regulation establishing the Single Supervisory Mechanism (SSM) states that the purpose of ECB Banking Supervision is to maintain banks' "safety and soundness" or "financial stability", and stipulates that there must be a strong independence and accountability framework.[36] The ECB's three functions entail differences in the frequency of decision-making meetings and the available policy instruments.

As regards objectives, the ECB's primary remit in the area of monetary policy is to pursue price stability in the medium term for the euro area as a whole, which is a symmetric objective. The macroprudential analysis

---

[34] See also the ECB's banking supervision website.

[35] There are exceptions to this under Article 20 of the Statute. Article 14.4 is also an exception although it is a power to object to functions other than those specified in the Statute if these interfere with the objectives and tasks of the ESCB (i.e. when ELA interferes with monetary policy).

[36] Council Regulation (EU) No 1024/2013 of 15 October 2013 conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions states in its Article 1: "…prudential supervision of credit institutions, with a view to contributing to the safety and soundness of credit institutions and the stability of the financial system…"; Article 19: "When carrying out the tasks conferred on it by this Regulation, the ECB and the national competent authorities acting within the SSM shall act independently"; and Article 20: "The ECB shall be accountable to the European Parliament and to the Council for the implementation of this Regulation …".

of systemic risks, and the related policy decisions, aim at avoiding tail events with high potential costs: an asymmetric objective. The SSM's objectives are to ensure the safety and soundness of the European banking system, increase financial integration and stability, and ensure consistent supervision across the euro area.

As regards frequency, the monetary policy stance is assessed eight times a year, while macroprudential policy has a varied frequency depending on the specific measures (i.e. quarterly for counter-cyclical capital buffers (CCyBs); annually for other systemically important institutions buffers (O-SII) and global systemically important institutions buffers (G-SII) and the SRB; biannually for national flexibility measures under Article 458 CRR[37]). Banking supervision, on the other hand, is a continuous process of day-to-day surveillance; though with an annual supervisory review and evaluation process (the SREP cycle is discussed below).

As regards instruments, the standard tool of monetary policy is a set of short-term policy interest rates. During the crisis, the set of instruments expanded to encompass, among other things, the provision of liquidity on demand at a fixed rate, and with full allotment since October 2008; a series of longer-term refinancing operations (LTROs and TLTROs) providing liquidity to banks against a set of collateral that was expanded; the Securities Markets Programme (SMP); the announcement of an Outright Monetary Transactions (OMTs) programme (although never implemented); enhanced monetary policy communication through forward guidance (on both policy rates and asset purchases); a large-scale private and public sector asset purchase programme (CBPP, CBPP2, CBPP3, ABSPP, PSPP, CSPP); and the use of negative interest rates (see Trichet (2009) and Praet (2018)). The unfolding of ECB's standard and non-standard measures is discussed in Hartmann and Smets (2018).

The SSM's task is to enforce the relevant legal framework or the relevant supervisory legal framework and it can employ various prudential actions for this purpose, such as bank-specific capital and liquidity add-ons, exposure limits, and a number of additional tools, including of a more qualitative nature, related, among other things, to internal governance and risk management of supervised institutions.[38] Where absolutely necessary, it can even withdraw a banking licence.

Regarding macroprudential policy, a relatively broad array of instruments is available to help mitigate systemic risk. Systemic risk is an elusive and multi-layered concept, which can, at a minimum, be characterised along both a time dimension and a cross-section dimension, and hence it is generally recognised that multiple macroprudential policy instruments may be needed to prevent the materialisation of systemic risks.[39]

The instruments covered by the EU legal texts include a counter-cyclical capital buffer, a systemic risk buffer, capital surcharges for systemically important financial institutions (SIFIs), sectoral capital requirements/risk weights on exposures relating to real estate and to intra-financial sector exposures, liquidity requirements and large exposure limits (see Table 2). In addition, a number of macroprudential instruments not covered by EU law are envisaged, such as caps on loan-to-value ratios or loan-to-income ratios, margin and haircut requirements and loan-to-deposit ratio thresholds.

With the establishment of the SSM, both national authorities and the ECB are competent authorities for macroprudential policy for the euro area as well as for countries participating in the SSM. An important

---

[37] Following their first approval, which can be valid for a period of up to two years, measures under Article 458 CRR can be only extended annually.

[38] For a detailed list of the supervisory powers of competent authorities, see Article 104 of CRD.

[39] For a detailed discussion on the concept of systemic risk, see ECB, "The concept of systemic risk", Financial Stability Review, December 2009.

element of the SSM Regulation is that, if deemed necessary for addressing systemic or macroprudential risks, the ECB will be empowered to apply higher requirements for capital buffers and other macroprudential measures beyond those applied by authorities of participating Member States.[40] Specifically, as stipulated by Article 5 of the SSM Regulation, the ECB will have the ability to implement macroprudential measures set out in EU law (i.e. the CRD IV and the CRR). At the same time, macroprudential measures not contained in the CRD IV and CRR, including borrower-based measures, remain in the remit of national authorities.

Table 3

Key macroprudential instruments in the EU

CRD IV	CRR	Outside legal Texts
Counter-cyclical capital buffer (Article135-140)	Liquidity coverage Ratio (Article 458, as of 2015)	Margin and haircut requirements
Systemic risk buffer (Article 128d, Article 133-34)	Net stable funding Ratio (Article 458, as of 2019)	LTV ratio caps
SIFIs capital surcharge (Article 128a, Article131)	Sectoral capital requirement/risk weights (Article 124, 164, 458) Large exposure limits (Article 458) Capital conservation buffer (Article 92(3), Article 458) Increased disclosure requirements (Article 458)	Loan-to-deposit ratio caps Debt service-to-income ratio Debt-to-income ratio Levy on non-stable finding Leverage ratio

Source: ESRB (2018).

5.4 Appointment process

The Treaty (Article 284 and Article 11.2 of the Statute of the ESCB) states that members of the Executive Board shall be appointed "*from among persons of recognised standing and professional experience in monetary or banking matters*." Appointments require the qualified majority of the European Council, on the basis of a recommendation from the EU Council after it has consulted the European Parliament and the ECB's Governing Council. Confirmation hearings by the European Parliament are conducted before the appointment of Executive Board members. Members of the Executive Board must be nationals of a euro area country.

Appointing governors of euro area NCBs is entirely a national decision. They all need to have a mandate of at least 5 years, while this may be longer (the treaty provides for the minimum as per Article 14.2 of the Statue of the ESCB and of the ECB). In the case of the Supervisory Board, NCAs designate one member each, whereas the Governing Council can appoint four ECB representatives. In addition, the Vice-Chair of the SSM Supervisory Board is also a member of the ECB Executive Board.[41] Therefore, the SSM Vice-Chair acts as a liaison between the Boards.

[40] Importantly, the SSM legislation recognises the role of national authorities in the implementation of macroprudential policy in the EU. Specifically, whenever appropriate or deemed necessary, and without prejudice to the tasks conferred upon the ECB, the competent or designated authorities of the participating Member States shall apply the CRD IV/CRR measures, subject to the requirement of prior notification of their intention to do so to the ECB.

[41] The Chair and the Vice-Chair are proposed by the ECB SSMR Article 26(3). The ECB appoints 4 representatives SSMR Article 26(5). The rest are representatives of the NCA. The EU Parliament and Council also play an important role: "After hearing the Supervisory Board, the ECB shall submit a proposal for the appointment of the Chair and the Vice-Chair to the European Parliament for approval. Following the approval of this proposal, the Council shall adopt an implementing decision to appoint the Chair and the Vice-Chair of the Supervisory Board."

5.5 Summary

All policy decisions in the Eurosystem are taken by the Governing Council. The Executive Board prepares monetary policy decisions to be taken by the Governing Council, while the SSM Supervisory Board is in charge of banking supervision subject to the “non-objection procedure”. Despite the new tasks acquired, the primary objective of the ECB remains the pursuit of price stability over the medium term. Owing to their distinct nature, the ECB’s three functions entail differences in the preparation cycles, frequency of meetings and the available instruments.

6 The Eurosystem's decision-making process

The Eurosystem's decision-making process is divided into three main steps: a preparation stage, a decision-making stage and an implementation stage. Deliverables vary in nature by the task and stage. There is a clear separation of tasks and member provenance between the Supervisory Board, the Executive Board and the Governing Council. These distinctions are instrumental in the separation between monetary policy and banking supervision. This is often referred to as the "separation principle", which is an important element in the interplay between monetary policy and supervision. In the following section, we first describe the process for monetary policy, then for the SSM functions, and then the macroprudential process.

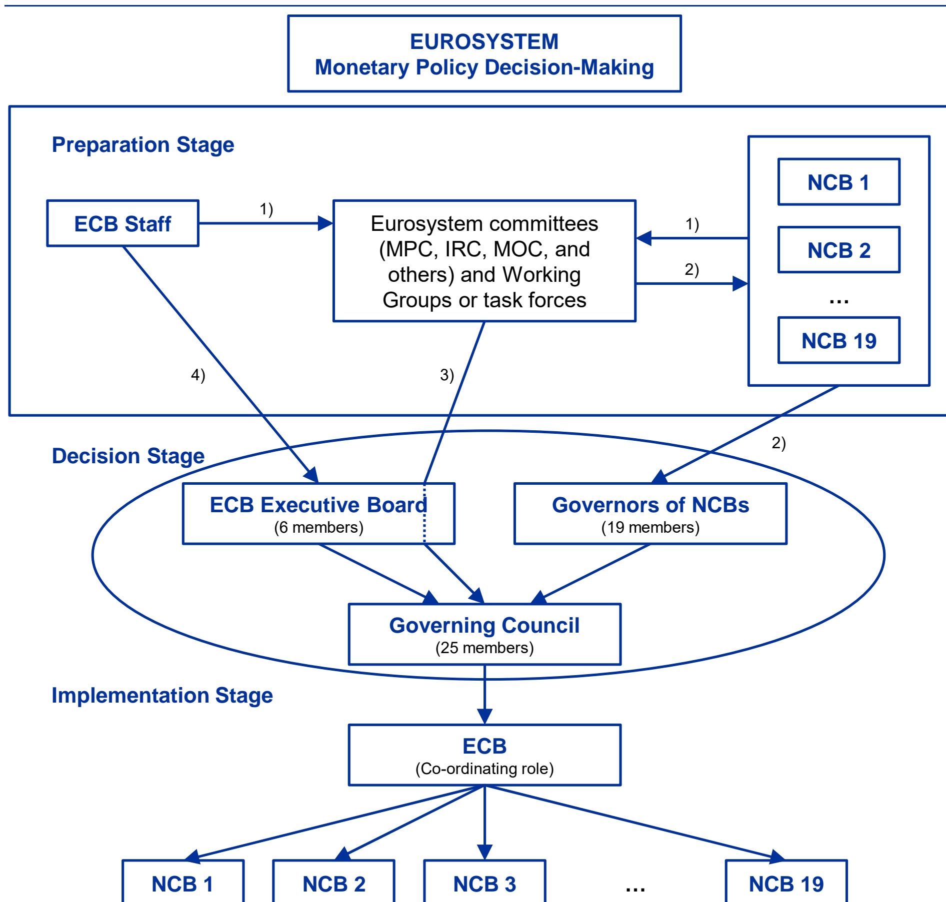
6.1 Monetary policy: the decision-making process

Preparing monetary policy decisions requires the collection, processing and analysis of a vast amount of data. The preparation stage therefore involves technical input from key Eurosystem staff and from Eurosystem committees (see Figure 4). The purpose of this phase is to gather information and agree on technical input relevant to the decision-making process. The make-up of Eurosystem committees, with one or two national experts from the relevant business areas in their NCB per country, ensures that each euro area NCB provides input into the deliberations and is equally represented and informed. ECB services make significant contributions to discussions by preparing notes/dossiers that serve as a general basis for Governing Council discussions. While committee chairpersons are normally appointed from among the existing committee participants, it is often the case that an expert from the ECB chairs these discussions.

Eurosystem committees all operate in a similar way; they have a well-defined mandate which clarifies the range of inputs they have to prepare for the policy process; the working language is usually English; and there are regular meetings (typically once a month). Documentation and technical background information are made available to all committee members. Deliberations are confidential, subject to the approval of the Governing Council. Reports are published on issues of more general interest. Committees can delegate work of a more technical nature to working groups given a specific mandate or to task forces which meet until the task at hand is accomplished.

Figure 4

The monetary policy decision-making process



Notes: NCB refers to staff from national central banks of the 19 euro area countries.
1) Preparation work for Committees and Working Groups of task forces.
2) NCB members report to Governors.
3) Reports and letters sent to Executive Board for transmission to Governors by Secretariat.
4) Governing Council documentation prepared by ECB staff and transmitted by Executive Board through Secretariat.

All input needed in the policy decision-making process is either prepared directly by ECB and NCB staff or is the outcome of the deliberations of the various committees with which Eurosystem staff interact. Input from ECB staff cannot be sent directly to the Governing Council, but will always be considered by the Executive Board beforehand. Afterwards, the ECB Secretariat forwards the approved documents to the members of the Governing Council. Regular input to the Governing Council's deliberations on monetary policy are sent by ECB staff to the Board member in charge of economics, who forwards the documents to the Executive Board for a preliminary discussion. Other occasional documents which may be helpful to inform Governing Council discussions may also be sent via the Executive Board to the Governing Council.

Input from ECB staff for which the expertise of NCB staff is deemed important may be discussed beforehand at the technical level of a Eurosystem committee, and the views of NCB experts may be canvassed during this process. The Committee may then decide to forward the note to the Executive Board or to draw up a Committee report, which may be sent to the Governing Council via the Executive Board. Alternatively, it may inform the Governing Council about its discussions on a given topic through a letter from the Committee Chair to the President, which may be accompanied by further staff notes on the issue. In such a case, the President would agree to have the documents forwarded to the Governing Council.

Second, there is a **decision-making stage** involving the Governing Council and the Executive Board. The Executive Board prepares the meetings of the Governing Council. This task includes drawing up agendas for meetings, preparing the necessary documentation for the Governing Council, and making proposals for future decisions. In practice, although not formally, the Executive Board has the right of initiative as regards decisions to be taken by the Governing Council. The Executive Board currently meets at least once a week, and acts by simple majority of the votes cast by those members who are physically present. In the event of a tie, the President has the casting vote. Like the Governing Council, the Executive Board acts as a collegiate body.[42] Decisions on monetary policy are then taken by the Governing Council, with the President chairing. The Governing Council meets eight times a year to take decisions on monetary policy.[43] The exact dates are available from the ECB's website, which shows a meeting schedule one year in advance. At its policy meetings, the Governing Council assesses economic, financial, and monetary developments before taking decisions on monetary policy. Generally, when monetary policy decisions are not on the agenda of the Governing Council, the discussion turns to the other tasks and responsibilities of the ECB and the Eurosystem.

Third, there is an **implementation phase** with considerable involvement of NCBs. Once a decision has been taken, on the policy rate, for instance, the activities of all NCBs are coordinated by a Eurosystem committee (or ECB departments). The NCBs then implement the decision in a decentralised manner, ensuring compliance with the ECB's guidelines and instructions. For instance, all regular monetary policy operations are conducted in a decentralised way. There is a single tender, and bids are dealt with through NCBs' operational functions (see ECB (2004) and ECB (2008a)).

Thus far, the ECB's Governing Council aims at consensus in its decision-making. Meeting summaries are published in the form of accounts.[44] At 1.45 p.m. (CET) the ECB issues a press release informing the public about the Governing Council's monetary policy decision. Shortly afterwards, at 2.30 p.m. (CET) the President, assisted by the Vice-President, holds a press conference of about an hour, for which live broadcasting is available. During this press conference, the President reads the Introductory Statement, which contains more detailed explanations of the decision against the background of the ECB's monetary policy strategy. In particular, the President explains the Governing Council's assessment of future risks to price stability and its judgement when cross-checking the information from its economic and monetary analysis. The press conference also includes an overview of fiscal policy and developments in structural reforms. This is followed by a question and answer session, giving journalists an opportunity to ask for relevant details of the specific monetary policy decision. A transcript of this session is published on the ECB's website just a few hours later. Overall, the press conference helps make the Governing Council's decision-making process on monetary policy matters more transparent.

6.2 Banking supervision: the decision-making process

The ECB is responsible for the functioning of the SSM, in accordance with the distribution of responsibilities between the ECB and NCAs as set out in the SSM Regulation (ECB-SSM (2014)). The SSM's decision-making process falls into three stages, as shown in Figure 5 below. Supervised credit institutions are

---

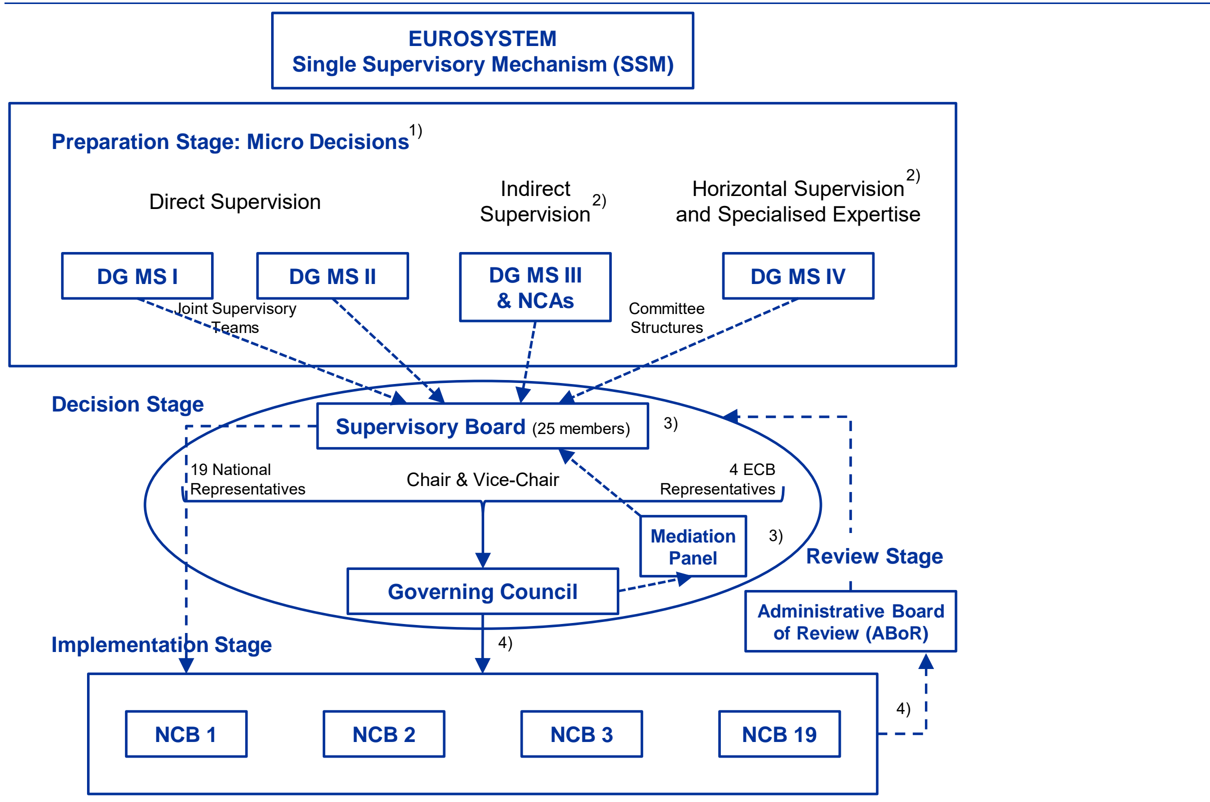
[42] Article 11.5 of the Statute of the ESCB states that "each member of the Executive Board present in person shall have the right to vote and shall have, for that purpose, one vote".

[43] Meetings of the Governing Council are generally held at the ECB's Frankfurt premises. However, as of 2000, two meetings per year are held outside Frankfurt in countries belonging to the euro area and hosted by the respective NCB. Meetings are also occasionally held by teleconference.

[44] Decisions relating to the ECB's other tasks, e.g. to payment systems, financial stability, statistics, banknotes and certain legal affairs, are published at 3 p.m. (C.E.T.) the day after the second Governing Council meeting of the month.

categorised as “significant” or “less significant”. The SSM directly supervises significant banks (around 130 institutions), whereas the NCAs, under the oversight of the SSM, are responsible for supervising less significant banks (around 3,500 institutions).

Figure 5
Banking supervision: the decision-making process



Notes:
1) DG MSs stand for Directorate General Microprudential Supervision. They are functionally responsible to the Supervisory Board, but formally the Governing Council has final decision-making power. The SSM is supported by ECB various “shared services” such as for statistics, human resources, IT, communication, administration, legal and so on.
2) Supervisory responsibility for less significant institutions (LSI) remains with National Competent Authorities, but under coordination framework set by SSM and final responsibility by ECB. DG MS IV supports DG MSs I & II, and is responsible for, inter alia, manuals and audits of JSTs.
3) Supervisory Board prepares decisions and monitors their implementation. Governing Council’s silence will provide an assent, following the non-objection procedure. In case of an objection, a Mediation Panel will resolve differences of views expressed by NCAs regarding such an action.
4) SSM supervisory decisions concerning significant banks, are conveyed directly by DG MSs I & II to those banks. Other decisions may be conveyed through NCAs. An Administrative Board of Review will internally review after external requests an ECB decision and propose to the GovC.

The SSM is divided into four directorates-general (DGs), each with its own specific tasks:

- Microprudential Supervision I and II (DG MS I & DG MS II) are responsible for the direct day-to-day supervision of significant institutions;

- Microprudential Supervision III (DG MS III) is responsible for the oversight of the supervision of less significant institutions performed by NCAs;

- Microprudential Supervision IV (DG MS IV) performs horizontal and specialised tasks for all credit institutions under the SSM’s supervision and provides specialised expertise on specific aspects of supervision, for example internal models and on-site inspections.

There is also a Secretariat to support the activities of the Supervisory Board.

The day-to-day supervision of significant institutions is carried out by **joint supervisory teams** (JSTs) comprising staff from both the ECB and the NCAs, along a supervisory cycle. **Colleges of Supervisors** cooperate on the supervision of the various components of cross-border banking groups, in accordance with the Capital Requirements Directive (CRD IV).[45]

Supervisory activities follow yearly cycles. In the autumn of each year, supervisory priorities for the SSM are agreed by the Supervisory Board, with contributions from Risk Analysis, JSTs and NCAs. Those priorities are then translated into specific guidance, to be taken into account by Planning and Coordination of **Supervisory Examination Programmes** and JSTs in specifying the Supervisory Examination Programme (SEP) for each JST. SEPs guide supervisory activities throughout the year. Besides regular ongoing supervisory activities, like risk assessments and analyses of banks' financial situation, on-site inspections have to be prepared – and staffed – at the JSTs' request, by horizontal experts in DG/MS4. These activities require careful planning of resources, as the SSM carries out several hundred such activities each year.

The SEPs contain **minimum engagement levels** (MEL) that reflect the proportionality principle. For example, MEL reporting of credit risk may be required as a monthly or an annual activity, depending on the size and complexity of the institution under supervision and the risk to which it is subject. Recovery plans prepared by the banks are analysed by JSTs. Resolution plans prepared by the national resolution authorities are commented on by the JSTs in interaction with the horizontal part of the SSM (i.e. DG/MS4). Authorisations and NCAs play an important role in the "fit and proper" (F&P) procedures necessary to appoint people as bank managers. In the ongoing supervisory activities, the JSTs are supported by the SSM risk assessment system (RAS).[46] The scoring summarises the overall risk profile of the institution in question and should not be confused with a rating as, unlike the latter, the scoring cannot be mapped onto a default probability measure. Thematic reviews (TR) play an important role in the SSM and SEP. They comprise a number of tasks designed to analyse certain high priority topics in depth for the SSM, across all supervised entities. Examples of TRs are internal governance and risk appetite frameworks, cybercrime and IT risk, profitability drivers and IFRS 9.

The *preparation stage* is based on the direct supervision of significant banks, and on indirect and horizontal supervision undertaken by DG MS IV. The outcome of the joint supervisory teams' work under DG MS I and II is forwarded to the Supervisory Board, while the outcome of indirect and cross-cutting supervision is first sent to the SSM committees. In fact, the SSM is also supported by some committee structures.

The core of the SSM's work is the supervisory review and evaluation process (SREP). This common methodology shows where a bank stands in terms of capital requirements and how it deals with risks. The SREP examines each bank risk profile from four different angles:

- **Business model:** supervisors assess the short-term profitability and the medium-to-long-term viability or sustainability of each bank's business model. In other words, they look at whether it has activities and business lines that generate interest income and enough commissions and fees to cover its operating costs and provisioning for expected potential losses, while allowing internal generation of capital (and sustainable dividend distribution);

- **Governance and risk management:** supervisors examine a bank's organisational structure and check whether risks are being managed properly;

[45] See the ECB's Guide to banking supervision (2014).

[46] This involves a combination of quantitative and qualitative tools and leads to each institution under supervision being given a score from 1 to 4 (for low to high risk).

- **Risk to capital:** supervisors analyse credit risk, operational risk, market risk and interest rate risk in the banking book and evaluate whether a bank has a sufficient safety net to absorb any losses, even under stressed conditions; and
- **Risk to liquidity and funding:** supervisors check a bank's ability to cover foreseen and unexpected cash needs, in the short and medium term, even under stressed conditions.

The SREP encompasses three elements. The first element, which is supported by a risk assessment system (RAS), evaluates each credit institution's risk levels and controls. The second is a comprehensive review of the institutions' Internal Capital Adequacy Assessment Process (ICAAP) and Internal Liquidity Adequacy Assessment Process (ILAAP). The third is a methodology for quantifying capital and liquidity, which evaluates credit institutions' capital and liquidity needs in the light of the results of the risk assessment.

At the *decision stage*, the Supervisory Board discusses SREP findings and formulates recommendations for the Governing Council decision. These are sent to banks at the end of the decision-making process. The bank must then address any shortcomings within a specific time frame.[47] Draft decisions taken by the SSM's Supervisory Board are subject to a "non-objection" procedure by the Governing Council within ten working days. If necessary, a **mediation panel** helps resolve differences of views expressed by the NCAs.[48] An **administrative board of review** carries out internal administrative reviews of supervisory decisions taken by the ECB, as needed.

As regards the implementation stage, once the Joint Supervisory Team's work is completed and the Supervisory Board has approved a bank-specific SREP decision – normally an annual procedure – every bank receives a letter setting out the specific measures it needs to implement in the following year (an implementing decision). Such decisions are tailored to each bank's individual profile. In general, every bank has to comply with legal requirements for the minimum amount of capital it has to hold ("**Pillar 1**"). In the SREP decision, the SSM may ask the bank to hold additional capital and/or set requirements related, for example, to the bank's governance structure or its management ("**Pillar 2**"). All SREP decisions support other supervisory activities and the monitoring of banks, and the SSM's operational planning for the next supervisory cycle.

6.3 Macroprudential policy process[49]

With regard to the *decision stage*, the Governing Council is the decision-making body ultimately responsible for the implementation of the ECB macroprudential actions.[50] The SSM Regulation outlines the main principles for conferring macroprudential tasks to the ECB, specifying how the monetary policy function of the latter should be preserved. These decisions apply to all banking sectors covered by the Single Supervisory Mechanism (SSM), i.e. the euro area countries and those other EU countries whose national authorities have

---

[47] See the ECB's banking supervision website.

[48] The mediation panel provides elements for settlements of disagreements (e.g. in case of voluntary adhesion to SSM) – see the ECB's Guide to banking supervision (2014).

[49] This section benefited from comments from Evangelia Rentzou and Marcello Tumino.

[50] See Decision of the European Central Bank of 22 January 2014 amending Decision ECB/2004/2 adopting the Rules of Procedure of the European Central Bank (ECB/2014/1).

signed close cooperation agreements with the ECB. They respect the separation principle[51] and the integrity of the decision-making for monetary policy by the Governing Council and the Executive Board (Article 12.2 of the Statute).

As prescribed by the SSM Regulation (Article 5(1)) national competent or designated authorities have the primary responsibility for initiating a macroprudential action. Specifically, NCAs/NDAs will have to notify the ECB when they intend to implement or change a macroprudential measure. The ECB then assesses the planned measures and can object to them within five working days.[52] National authorities consider the ECB's comments before proceeding with the decision.

At the same time, the ECB, in accordance with the SSM Regulation (Article 5(2)) may, instead of the national authorities, apply higher requirements for capital buffers as well as tighten other macroprudential measures embedded in the CRD and CRR. Concerning the preparation stage, the ECB's Rules of Procedure state that the Governing Council decides on macroprudential measures on the basis of a proposal put forward by the Supervisory Board.[53] This proposal is based on the initiative and takes account of the relevant technical committee's input (i.e. the Financial Stability Committee, in its SSM composition) and of the relevant internal structure (an ECB internal high-level group, Macroprudential Coordination Group (MPCG), which includes ECB and SSM members from the macroprudential area (Directorate-General for Macroprudential Policy and Financial Stability; i.e. DG/MF) and from the SSM's four directorates-general).[54]

The Governing Council has the right to endorse, object to or amend the Supervisory Board's proposal.[55] It can also ask the Supervisory Board to submit a proposal or engage in a specific analysis. If the Supervisory Board submits no proposals in response to such requests, the Governing Council, taking account of the relevant committee and internal structure, may take a decision even if there is no proposal from the Supervisory Board. Figure 6 provides an overview of the macroprudential decision-making process.

---

[51] See the Decision of the European Central Bank of 17 September 2014 on the implementation of separation between the monetary policy and supervision functions of the European Central Bank (ECB/2014/39). This decision reflects the requirement in Article 25(2) of the SSMR that the ECB carries out its supervisory tasks without prejudice to and separately from its tasks relating to monetary policy and any other tasks, and that the ECB's supervisory tasks should neither interfere with, nor be determined by, its tasks relating to monetary policy. Moreover, the same article states that the ECB's supervisory tasks should not interfere with the ECB's tasks in relation to the European Systemic Risk Board (ESRB) or any other tasks.

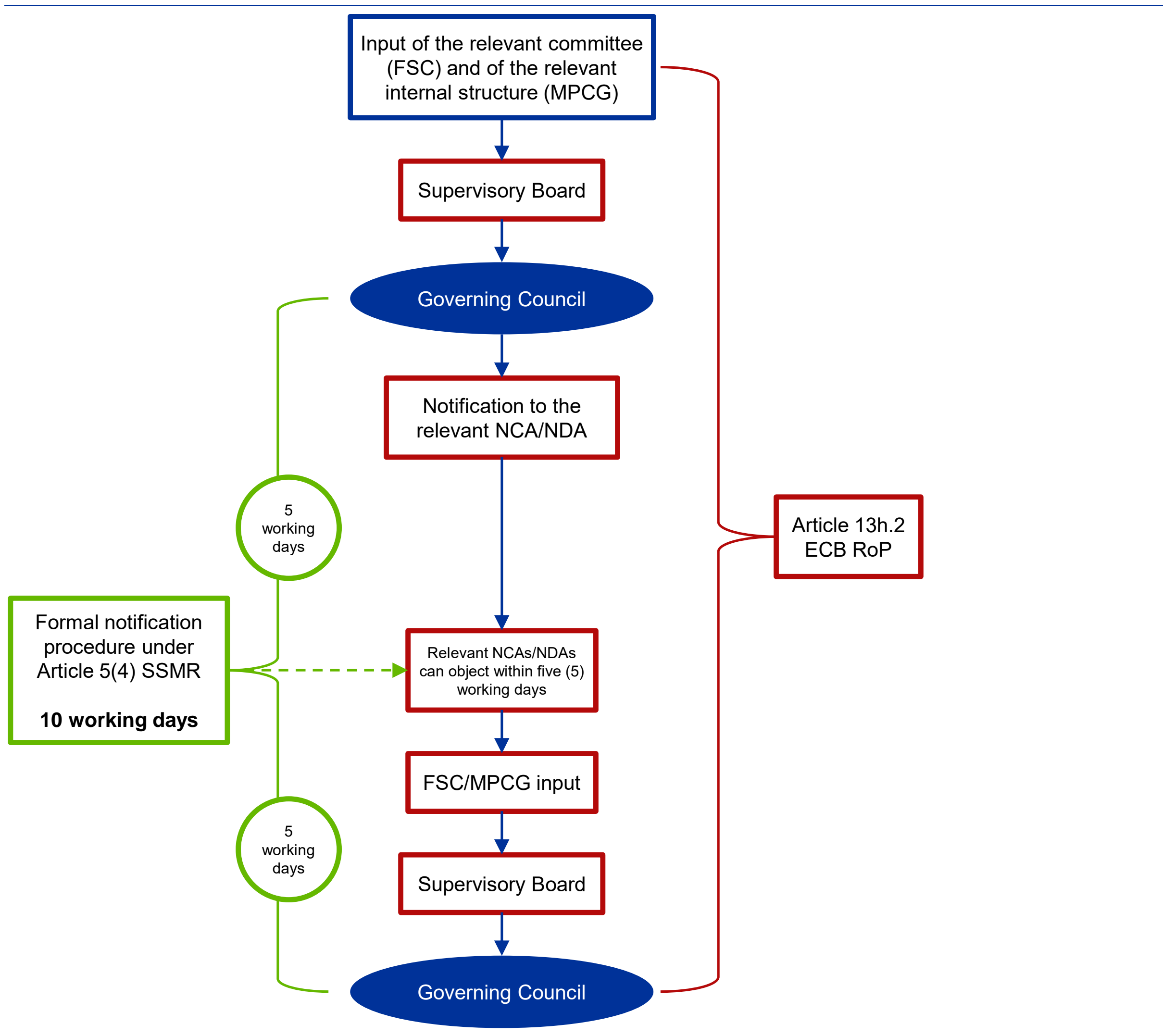
[52] See also Article 13(h)(1) of Decision of the European Central Bank of 22 January 2014 amending Decision ECB/2004/2 adopting the Rules of Procedure of the European Central Bank (ECB/2004/1).

[53] See Article 13(h)(2) of Decision of the European Central Bank of 22 January 2014 amending Decision ECB/2004/2 adopting the Rules of Procedure of the European Central Bank (ECB/2004/1). Such intention by the Governing Council shall be notified to the concerned NCA/NDA "at least ten working days prior to taking such a decision. If the concerned national competent or designated authority notifies the ECB in writing of its reasoned objection within five working days of the receipt of the notification, this objection, upon receipt by the Secretary of the Supervisory Board, shall be transmitted to the Governing Council and the Supervisory Board without delay."

[54] See also Angeloni (2015).

[55] See Article 13(h)(3) of Decision of the European Central Bank of 22 January 2014 amending Decision ECB/2004/2 adopting the Rules of Procedure of the European Central Bank (ECB/2004/1).

Figure 6
Macroprudential decision-making process in the banking union



Notes: The flowchart reflects the general macroprudential procedure under the SSM legislative framework including the SSM Regulation, the SSM Framework Regulation and the ECB Rules of Procedure. It does not take into account the process for granting the 'Right to be Heard', which would be activated for decisions addressed to individual supervised entities.

Following the *implementation stage*, the ECB evaluates macroprudential policy action in the context of its regular assessment of systemic risk and macroprudential policy. These evaluations feed into FSC discussions, following a semi-annual cycle. They focus on whether the policies implemented are achieving their objectives, whether further action is needed, and whether policies are having any unintended consequences (such as cross-border spillovers).

6.4 Summary

All three decision-making processes follow three main steps: a preparation stage, a decision-making stage, and an implementation stage. However, there are very fundamental differences. Preparing monetary policy decisions requires the collection, processing and analysis of a vast amount of macro-financial data. The case is similar for macroprudential analysis. Instead, microprudential mostly requires very specific information

about a specific bank or bank group. A clear separation of tasks and member provenance between the Supervisory Board, the Executive Board and the Governing Council is critical. The implementation of monetary policy decisions is largely decentralised, while the implementation of microprudential decisions is centralised. Implementation of macroprudential decisions can instead be implemented at both national and central levels, depending on the nature of the measure.

7 Overlaps, synergies and complementaries (I): theories and concepts

This section discusses various overlaps, existing synergies and complementarities between the ECB's monetary policy, macroprudential policies and banking supervision. The literature in this field is vast and we can only make reference to a few studies with direct relevance for the enlarged ECB. From a theoretical and descriptive viewpoint, there are both positive trade-offs between the different policy functions but also potential conflicts.

7.1 Price stability and financial stability: mutually reinforcing goals

The literature flags many conceptual interactions between monetary policy, banking supervision and macroprudential analyses. The launch of the SSM and the onset of banking supervision and macroprudential responsibilities raised the issue of how to identify and combine these with the ECB's existing tasks of setting monetary policy for the single currency in the interests of maintaining price stability within the euro area. The monetary policy stance influences all sectors of the economy, including banks and the financial system, whereas both microprudential supervision and macroprudential oversight have direct implications for the soundness and resilience of the banking sector and its ability to intermediate financial services (see e.g. Angelini et al. (2012) and Beyer et al. (2016)).[56]

Carboni et al. (2013) and Cozzi et al. (2019) discuss the interactions between monetary policy and macroprudential policy. The propagation of macroprudential instruments is likely to interact with the transmission mechanism of monetary policy decisions, not least as they both affect the behaviour of financial intermediaries. In supporting the stability of the financial system and in seeking to dampen its pro-cyclical tendency, macroprudential instruments generally involve significant balance sheet adjustments within the financial sector, with effects on credit provision, asset prices and overall financing conditions for households and firms. Those factors may influence the transmission of the monetary policy stance and, ultimately, the outlook for price stability.

Conversely, monetary policy will be relevant for macroprudential (and microprudential) oversight as it can affect agents' decisions on risk-taking, leverage and the composition of assets and liabilities. For instance, the risk-taking channel of monetary policy transmission underlines how protracted loose monetary conditions can foster incentives for financial institutions to take on more risk, thus encouraging leverage and paving the way to the build-up of financial imbalances. More broadly, changes in monetary policy stance influence borrowers' decisions on taking on debt by affecting the tightness of their borrowing constraints via the impact on asset prices and borrowers' net worth and hence on the cost of external financing for borrowers.

The recent financial crises – and especially the sovereign debt crisis of the euro area in more recent years – have shown that price stability and financial stability are complementary and must be mutually reinforcing. Price stability contributes to financial stability by eliminating inflation-related distortions in financial markets, by containing the propagation of shocks via well-anchored inflation expectations and by mitigating pro-cyclicality in the economy. Financial stability facilitates a central bank's task of maintaining price stability by containing excessive accumulation of credit, limiting unsustainable developments in asset prices and

[56] See also de Guindos (2018).

mitigating the pro-cyclical reinforcing loop between real and financial variables. At the same time, as also underscored by the developments before the global financial crisis, price stability, while being a necessary precondition, is not sufficient for financial stability. Indeed, in the run-up to the crisis, excessive risk-taking and the accumulation of financial imbalances proceeded together with, and were possibly amplified by, a seemingly favourable perception of risk, contained macroeconomic volatility and remarkable price stability.

7.2 Tensions and complementaries between three responsibilities

Given an understanding of the above interactions, how should the ECB proceed? We discuss two polar cases. The central banking community has long favoured the view that it may be ill-advised for monetary policy to mechanically counteract asset price misalignments and financial imbalances. At the same time, the depth of the global financial crisis called into question this approach of a "*benign neglect*" of asset price misalignments and financial imbalances in the implementation of monetary policy. Nevertheless, Fahr and Fell (2017) show that macroprudential policies are more effective than monetary policy in enhancing financial system resilience and in moderating the financial cycle, whereas monetary policy is more effective than macroprudential policy in achieving price stability.

Similarly, Kok and Kocherols (2019), using an extended version of the Svensson (2017) model for the euro area, show that a "*leaning against the wind*" monetary policy that aims at alleviating the build-up of financial imbalances is less effective and more costly in terms of output loss than more targeted macroprudential policies. This may especially be the case in a monetary union such as the euro area where – due to the still relatively fragmented financial system – financial stability risks tend to build up along national lines thus requiring more localised and targeted macroprudential responses as compared to a more blunt "one size fits all" single monetary policy (see Darracq Pariès et al. (2019)).

With respect to synergies and tensions between monetary policy and banking supervision, as argued above, arguments in favour of subsuming banking supervision within the central bank include avoidance of coordination failures and facilitating the exchange of information. At the same time, it can entail reputational risks for the central bank following banking failures and lead to biased decision-making.[57] Ampudia et al. (2019) provides empirical evidence that jurisdictions where banking supervision is integrated in the central bank have experienced fewer credit-fuelled banking crises, while output growth and inflation have not deviated from other jurisdictions.

There is also potential for tensions and complementarities between macroprudential policies and microprudential supervision, as they are conducted using similar types of instruments (e.g. capital requirements, risk weight floors, exposure limits, etc.) but have different intermediate objectives (see Boissay and Cappiello (2014)). Generally speaking, microprudential oversight aims at safeguarding the resilience of the individual institutions from idiosyncratic risks whereas macroprudential oversight aims at preserving the stability of the system as a whole.

A bit stylised, it can be argued that microprudential actions might be of a more pro-cyclical nature, as for example credit booms might not be of immediate concern to the supervisor as banks tend to look healthy in the upturn. This could create negative externalities for the broader economy when the cycle turns. Macroprudential policies may by nature be more counter-cyclical, but at the same time they may be more vulnerable to "*collective moral hazard*" whereby banks take excessive risks during the upturn under the expectation that macroprudential requirements will be released in the downturn (see Farhi and Tirole (2012)).

---

[57] See also Ampudia et al. (2019) for an in-depth discussion.

There are more clear complementarities between micro- and macroprudential actions: they have a dual nature. Macroprudential tools are often "blunter" (e.g. applied uniformly across the banking sector) than microprudential tools targeting a very granular level of single institutions. Moreover, microprudential supervisory actions can help mitigate the above-mentioned moral hazard issues relating to macroprudential policies through e.g. the imposition of more stringent Pillar 2 requirements. On the other hand, tensions could arise due to disagreements about the optimal level of bank capital. Such disagreements could become most pronounced during downturns where the microprudential supervisor would typically be concerned about the health of the individual institutions and hence might raise capital requirements. In contrast, the macroprudential authority might have a preference for releasing capital requirements to help ease banks' credit intermediation capacities.

Given the dual nature of micro- and macroprudential policy measures, it is crucial to ensure cooperation and adequate flow of information between the two functions. Cooperation, continuous information exchange and equal bank data access will facilitate complementarity between microprudential and macroprudential measures. As we have documented in this paper, the institutional set-up in the enlarged ECB properly reflects this duality while still accounting for the need to keep the different policy functions independent and separate. More broadly, the two sides of the ECB – setting monetary policy and supervising banks – must, for various reasons, be independent of one another. Avoiding some inherent "conflict of interest" is one that is often cited.

However, in our view there are diverse, equally important practical reasons for such a separation. For purposes of macroeconomic analysis, it is not important to know the details of the 100-odd individual bank stress test results; on the other hand, supervisors engaging in dialogue with the banks while the stress tests and business model analyses are being performed should not be seen as "insiders" as regards information on monetary policy decisions (as is always the case for the ECB). This way, monetary policy decisions, financial stability and supervisory activities are fully aligned (without any conflict of interest).

7.3 Summary

The few contributions reviewed are meant to define the conceptual framework of the enlarged ECB. There are several levels of overlaps, synergies and complementarities. Four levels stand out. The first is the transmission mechanism of monetary policy decisions that unfolds with long lags. Micro- and macroprudential policies might support monetary transmission by reducing pro-cyclical tendencies of the financial system. This entails, among other things, a need to monitor risk-taking and excessive credit developments which might have reverberations on both price and financial stability. The second level is the monitoring of changes in the balance sheet of households, firms and financial institutions. The third level is the identification of the nature of shocks hitting the economy and the choice of the best policy response (or mix) to offset it/counter it. The fourth element requires avoiding a polarised response that is either too mechanical and potentially rushed or too bland and late.[58]

[58] An additional element, not discussed in this paper, entails looking at the sources and severity of financial distortions and frictions in the financial system and gauging the scope for the CMU agenda.

8 Overlaps, synergies and complementaries (II): in practice

This section provides four practical and illustrative examples of interactions between the ECB's three areas of responsibility, to show the topic's relevance. Also relevant are the sanctioning powers of the SSM, which are not mentioned here, while they play an important role in preventing moral hazard and reduce the risk of future crises. This is even the more so in a centralised system where all actors face the same administrative penalties.

8.1 SSM's yearly Supervisory Examination Programme (SEP)

The SSM plans its yearly activities in line with a **Supervisory Examination Programme (SEP)**. This programme, drawn up during Q4 each year and revised at half-yearly intervals, is based on an analysis of the likely risks and their potential impact on the EU banking system. SEP work involves input from all ECB business areas working on financial stability issues, as well as from the SSM horizontal unit (DG/MS4) and the direct supervision areas plus national competent authorities (NCA). The ESRB is also consulted.

For the 2017 SEP round, the low interest rate environment was identified as a key factor that could have a big impact on banks, depending on their specific business model. From this identification, two specific exercises followed in the course of 2017.

- The first exercise required the analysis of the impact of changes in the yield curve to be analysed by stress testing the bank's economic value of equity and net interest income. This "bottom-up" exercise was conducted under various scenarios involving different changes in the yield curve (a rise, a fall, a flattened curve and a steeper curve).
- The second exercise, involves analysing banks' business models and their resilience to the low interest rate environment (as well as changes in the competitive environment).[59]

The aggregate findings of these targeted supervisory exercises can obviously provide value added not only to the macroprudential analysis of the banking sector but also to monetary policy analysis given the prominent role of banks in the monetary policy transmission mechanism in the euro area.

8.2 SSM's yearly supervisory review and evaluation process (SREP) and the setting of macroprudential buffers

The second example concerns decisions on how much capital banks should hold above the minimum regulatory requirements. This is one of the outcomes of the yearly **supervisory review and evaluation process (SREP)**: these are known as Pillar 2 capital add-ons. These should cover risks not taken into account in Pillar 1 (e.g. interest rate risk in the banking book and concentration risk) or when the supervisor assesses Pillar 1 capital insufficient to cover, for example, credit or market risks, taking into account the

[59] See the press release entitled Insufficient strategic steering may exacerbate banks' profitability challenges for details and a summary of the findings.

bank's risk management framework, governance and appetite. The total level of prudential capital that banks are required to hold is also influenced by macroprudential capital-based tools such as the counter-cyclical capital buffer (CCyB), systemic risk buffers (SRBs), and G-SII/O-SII buffers. These buffers are set by designated authorities (see Table 2), which can be either the national central bank (NCB) or the national competent authority (NCA), and the ECB when "top-up" action is required.

As argued above (Section 6.c), a close coordination between the macroprudential and microprudential arm of the ECB has been put in place, to bring together the micro- and macroprudential perspectives at the SSM on banks' risks and prudential measures. Furthermore, at the aggregate level Pillar 2 capital add-ons and macroprudential buffers might have real economic implications through the collective impact on banks' credit decisions and hence on the overall intermediation of credit to the economy. For this reason, while not interfering in the SREP decisions for individual banks, the aggregate impact of these actions is an element that naturally feeds into the monetary policy analysis as well.

8.3 Conducing stress tests

Another prominent example where there are clear synergies and complementarities, especially between the micro- and macroprudential functions (and to some extent also with monetary policy), is the area of stress testing. In fact, the biennial stress test exercises conducted by the ECB – and connected to the EU-wide stress test coordinated by the EBA – are carried out jointly by the section of the ECB concerned with banking supervision of SSM significant institutions (DG/MS 1, 2 and 4) and by the business area of the ECB in charge of macroprudential policy and financial stability (i.e. DG/MF). In addition, the scenario design process, which is coordinated by DG/MF together with the ESRB, also includes input from ECB staff from the monetary policy function (e.g. DG/E and DG/I).

The current format of the EBA-led stress tests are "constrained bottom-up" exercises, which implies that banks themselves calculate the impact of the scenarios on their solvency positions, subject to some constraints laid out in the EBA methodology and subject to common scenarios (provided by the ESRB with the ECB's support).[60] It is then the competent authorities' responsibility – in the case of the euro area implying the ECB and the NCAs within the SSM – to make sure that banks' stress test submissions meet certain quality and credibility standards. As documented in ECB (2017)[61], the quality assurance process involves stakeholders from the JSTs (i.e. SSM DG/MS 1 and 2), which provide an assessment of each bank's solvency under a baseline scenario and an adverse scenario, from the section that deals with horizontal banking supervision (i.e. SSM DG/MS 4), which provides a peer group and a country perspective, and the macroprudential area (i.e. DG/MF) which provides a top-down, model-based perspective.

The outcome of the solvency stress test exercise feeds into the overall SREP to ensure adequate levels of capital and liquidity in institutions, comprehensive coverage of risks, and sound internal processes. Specifically, stress test results for all significant institutions are used to assess the Pillar 2 capital needs of individual banks in the context of the supervisory review and evaluation process (SREP). The qualitative results of the stress test will be incorporated into the definition of supervisory measures and can even have an impact on Pillar 2 requirements. The quantitative results of the stress test, namely the fall in the Common Equity Tier 1 (CET1) ratio a bank faces between its starting point and in the final year of the adverse stress

[60] There are ongoing discussions to reform the nature of the European stress tests; see e.g. Enria (2018, 2019) and de Guindos (2019).

[61] See Mirza and Zochowski, "Stress test quality assurance from a top-down perspective" in ECB Macroprudential Bulletin, No. 3, June 2017.

test scenario will be one input factor for Pillar 2 guidance. The stress test results feed into Pillar 2 guidance in a non-mechanistic way.

While the outcome of the stress test first and foremost serves a microprudential purpose, the ECB stress test also supports macroprudential oversight. Using its own top-down stress testing framework, the ECB also assesses the macroprudential implications of the exercise. This approach – mutually strengthening micro- and macroprudential stress tests – was taken a step further with the formulation of the stress test analytics for macroprudential purposes in the euro area (STAMP€ for short) and more recently by Budnik et al. (2019).[62]

The macroprudential stress test approach has four components that go beyond what is typically captured by microprudential stress tests: (i) **a dynamic dimension** that takes account of the bank's reaction to the stress implied by the adverse scenario (e.g. deleveraging, portfolio reshuffling, and capital raising); (ii) **a comprehensive two-way interaction between banks and the real economy** resulting from banks' balance sheet adjustments that may lead to macro-feedback effects, potentially amplifying the initial shock to the economy and its impact on banking sector solvency; (iii) **the assessment of contagion effects** stemming from interconnectedness among financial institutions, including non-banks in the shadow banking sector; and (iv) **the integration of system-wide liquidity assessment** which aims at accounting for the fact that liquidity and solvency can be interconnected in individual banks and within the financial system as a whole.

8.4 Managing crises and financial tensions

In crisis times, there may be synergies between implementation of supportive/accommodating monetary policy and banking supervision in the context of crisis management. The SSM provides the solvency assessment. It also provides the capital ratio information for monetary policy purposes when the Governing Council assesses the financial soundness of significant institutions. The SSM is then also responsible for approving recovery plans drawn up by banks (in accordance with BRRD). In such plans, access to funding from the Eurosystem is considered only through access to regular refinancing operations. In practice, this involves checking compliance with collateral requirements and availability of unencumbered assets.

However, one cannot rule out the possibility of circumstances under which provision of emergency liquidity assistance (ELA) might be necessary. ELA aims to provide liquidity support to solvent financial institutions that are facing temporary liquidity problems, outside of normal Eurosystem monetary policy operations. The rules and procedures applying to the provision of ELA are laid down in the ELA agreement.[63] As ELA can only be granted to solvent institutions only, it also requires a supervisory assessment of the solvency position of the individual institution. ELA is provided by the NCBs and it is not part of monetary policy implementation.

8.5 Summary

Figure 7 provides a broad overview of the fault lines between the tasks and responsibilities of the three policy functions. On the one hand, one can distinguish between policies with a system-wide perspective (i.e. monetary policy and macroprudential policies) and policies focusing on individual institutions (i.e. microprudential supervision). On the other hand, some policy instruments have more of a preventive nature (i.e. capital requirements, macroprudential buffers and standard monetary policy tools) whereas others

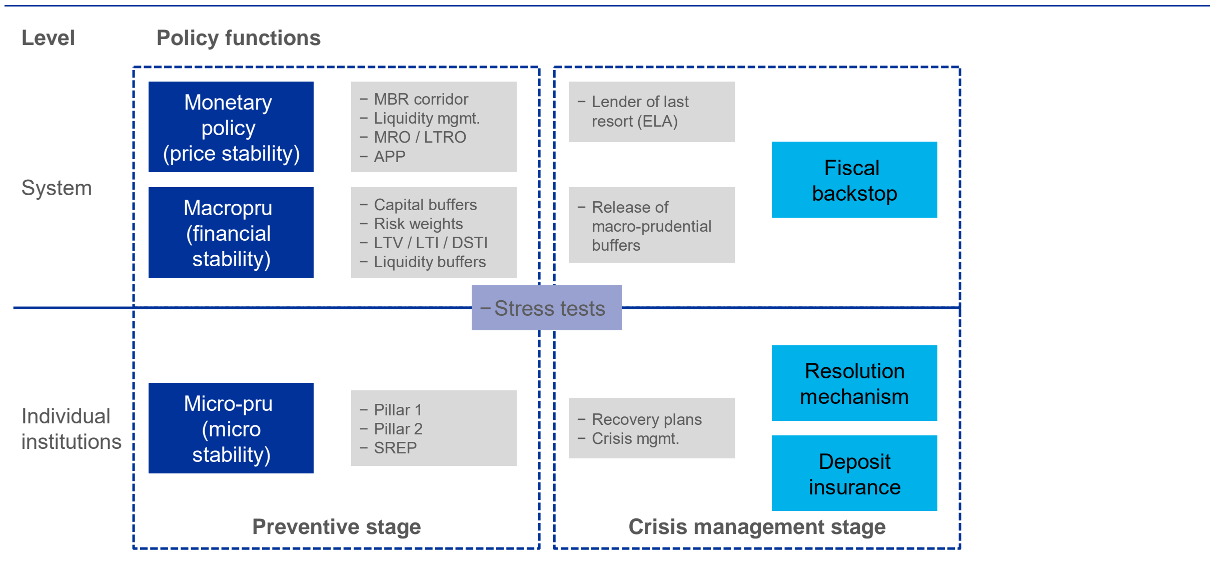
[62] See Henry and Kok (2013), Dees et al. (2017) and Budnik et al. (2019) for overviews of the ECB top-down macroprudential stress testing framework.

[63] See also the ECB's website.

are tailored for crisis management purposes (e.g. ELA, buffer releases, bank recovery planning and crisis management). In crisis situations, policy tools available to ECB policy functions might need to interact with other instruments controlled by external authorities, such as fiscal backstops, resolution management and deposit insurance schemes. Stress tests can serve both crisis management and preventive purposes and are often at the crossroads of microprudential supervision and macroprudential oversight.

Figure 7

Synergies and complementaries in the enlarged ECB



To summarise, while strictly observing the separation principle meaning the policy decisions of the three distinct areas of responsibility are taken independently, there are obvious synergies and complementarities among the three areas as regards the work at the technical level underpinning the policy decisions. We have highlighted a few key areas where this is the case. For instance, several ECB business areas are involved in providing data and information for the SSM work on the SEP and the SREP. Thereafter, the aggregate analysis of banks' risks and/or capital requirements can support the macroprudential analysis of the aggregate banking sector as well as the analysis of the monetary policy transmission mechanism in the euro area. In crisis times, cooperation and exchange of information might be enhanced. ECB stress tests are conducted on a biennial basis. Operationally they are connected to the EU-wide stress test coordinated by the EBA. Functionally, the scenario design which is coordinated by DG/MF together with the ESRB, also brings together the SSM and DG/E plus DG/I. The outcome of the tests then feeds into the SREP. Last, in situations where ELA is necessary to address temporary liquidity issues, a solvency assessment becomes necessary as does cooperation with the NCB.

9 Final remarks

The protracted crisis has prompted several waves of European financial reforms. The first is represented by the 2009 Single Rulebook, which harmonises the prudential rules binding on all EU financial institutions. The second financial reform came with the European System of Financial Supervision (ESFS). In 2011, this reform established three new ESAs and the European Systemic Risk Board (ESRB). The need to harmonise banking supervision across the euro area became urgent with the euro area crisis. Thus, the third broad European financial reform came when the European Council agreed in 2013 to launch a banking union with three pillars: a Single Supervisory Mechanism (SSM), a single resolution framework (launched in 2016), and a common deposit insurance scheme (which is still under discussion).

In hindsight, the ECB supported rapid deployment of the SSM. Today, the ECB is responsible for setting a single monetary policy applicable throughout the euro area and for supervising all euro area banks, some directly and some indirectly. Its remit in the area of financial stability has also expanded. It thus carries out three complementary functions. While its primary objective of pursuing price stability remains unchanged, the ECB is now also responsible for the safety and soundness of banks, and it has a key role in contributing to the maintenance of financial stability within the euro area (Article 127.5).[64]

At the same time, there is a clear separation between setting monetary policy which pursues price stability for the euro area as a whole, and single banking supervision which focuses on banks' stability. The launch of the SSM is a very visible reform; though perhaps less visible, the contribution to a shared macroprudential responsibility with the competent EU and national authorities is equally important. This has required the development of new analytical approaches, the introduction of novel modelling tools and the creation of new policy instruments. It has also brought new working arrangements, links and fora. This extension of the ECB's responsibilities is among the most far-reaching measures taken by euro area governments in response to the crisis.

This paper has flagged up similarities, differences and overlaps between the ECB's monetary policy framework, the SSM's Single Supervisory Mechanism, and the shared monitoring of financial stability. For example, monetary policy displays a strong centre yet decentralised operations (because the tasks are assigned to the ESCB by the Treaty), the single supervision displays a strong centre and strong coordination (because the tasks are assigned to the ECB and to the NCAs by the SSMR), while macroprudential responsibility is shared with the competent EU and national authorities and requires a rich analytical basis. Moreover, working cycles differ across responsibilities: risks to price stability normally trail the business cycle, while the financial cycle is more relevant to banking supervision and financial stability. The monetary policy stance is discussed eight times a year, the SSM's supervisory cycle is annual, and macroprudential discussions take place every quarter. We have also shown that new working arrangements like these can operate in conjunction with strict rules like the "separation principle".

[64] The ECB also carries out other functions such as forex and payment systems that are not discussed in this paper.

References

Acharya, V. and Steffen, S. (2014), “Falling Short of Expectations? Stress-Testing the European Banking System”, *Working Paper Series*, No 315, Centre for European Policy Studies.

Acharya, V. and Steffen, S. (2015), “Is the Banking Union Stable and Resilient as it Looks?” in Allen, F., Carletti, E. and Gray, J. (eds.), *The New Financial Architecture in the Eurozone*, European University Institute, Florence.

Acharya, V., Eisert, T., Eufinger, C. and Hirsch, C. (2016), “Whatever It Takes: The Real Effects of Unconventional Monetary Policy”, mimeo.

Allen, L., Bali, T.G. and Tang, Y. (2012), “Does systemic risk in the financial sector predict future economic development?”, *Review of Financial Studies*, Vol. 25, No 10, October, pp. 3000-3036.

Altunbas, Y., Gambacorta, L. and Marques-Ibanez, D. (2010), “Does monetary policy affects banks’ risk-taking”, *BIS Working Papers*, No 298, March 2010.

Ampudia, M., van Vlokhoven, H. and Żochowski, D. (2016), “Financial fragility of euro area households”, *Journal of Financial Stability*, forthcoming; see also: *Working Paper Series*, No 1737, ECB, Frankfurt am Main.

Ampudia, M, Beck, T., Beyer, A., Colliard, J.E., Leonello, A., Maddaloni, A. and Marqués-Ibanez, D. (2019), “The architecture of supervision”, *Working Paper Series*, No 2287, ECB, Frankfurt am Main.

Angelini, P., Nicoletti-Altimari, S. and Visco, I. (2012), “Macroprudential, microprudential and monetary policies: Conflicts, complementarities and trade-offs”, *Occasional Papers*, No 140, Banca d’Italia.

Angeloni, I. (2015), “Towards a macro-prudential framework for the single supervisory area”, remarks made at Belgian Financial Forum, 20 April.

Angeloni I. (2017), “Faraway or close? Supervisors and central bankers”, speech given at Halle Institute for Economic Research (IWH), 2 February.

Angeloni I. and Ehrmann, M. (2003), “Monetary policy transmission in the euro area: any changes after EMU?”, *Working Paper Series*, No 240, ECB, Frankfurt am Main.

Angeloni I. and Faia, E. (2009), “A Tale of Two Policies: Prudential Regulation and Monetary Policy with Fragile Banks”, *Kiel Working Papers*, No 1569, Kiel Institute for the World Economy.

Angeloni, I. and Faia, E. (2013), “Capital regulation and monetary policy with fragile banks”, *Journal of Monetary Economics*, Vol. 60, Issue 3, pp. 311-324.

Angeloni I., Flad, M. and Mongelli, F.P. (2007), “Monetary Integration of the New EU Member States: What Sets the Pace of Euro Adoption?”, *Journal of Common Market Studies*, Vol. 45 June, No 2, pp. 367-409.

Bean, C. (2010), “Monetary Policy after the Fall”, speech given at the Federal Reserve Bank of Kansas City Annual Conference, Jackson Hole, August.

Beau, D., Clerc, L. and Mojon, B. (2011), "Macro-Prudential Policy and the Conduct of Monetary Policy", *Occasional Papers*, No 8, Banque de France.

Beck, R., Beirne, J., Paternò, F., Peeters, J., Ramos-Tallada, J., Rebillard, C., Reinhardt, D., Weissenseel, L. and Wörz, J. (2015), "The side effects of national financial sector policies: framing the debate on financial protectionism", *Occasional Paper Series*, No 166, ECB, Frankfurt am Main.

Beyer, A., Nicoletti, G., Papadopoulou, N., Papsdorf, P., Rünstler, G., Schwarz, C., Sousa, J. and Vergote, O. (2017), "The transmission channels of monetary, macro- and microprudential policies and their interrelations", *Occasional Paper Series*, No 191, ECB, Frankfurt am Main.

Bernholz, P. (1974), "Logrolling, Arrow Paradox, and Decision Rules", *Kyklos*, Vol. 27, pp. 49-61.

Berk, J.M. and Bierut, B. (2009), "Monetary Policy Committees – Meetings and Outcomes", *Working Paper Series*, No 1070, ECB, Frankfurt am Main.

BIS (2016a), "The impact of macroprudential policies: an empirical analysis using credit registry data", see proceedings on the BIS website.

BIS (2016b), "Macroprudential policy", *BIS Papers*, No 86, Bank for International Settlements, September 2016.

Bisias, D., Flood, M., Lo, A.W. and Valavanis, S. (2012), "A Survey of Systemic Risk Analytics", *Working Papers*, No 0001, Office of Financial Research.

Boissay, F. and Cappiello, L. (2014), "Micro- versus macro-prudential supervision: potential differences, tensions and complementarities", *Financial Stability Review*, ECB, Frankfurt am Main, May.

Blinder, A. (2004), *The Quiet Revolution: Central Banking Goes Modern*, Yale University Press, New Haven.

Blinder, A. (2006), "Monetary Policy by Committee: Why and How?", *Working Papers*, No 92, De Nederlandsche Bank, Amsterdam.

Blinder, A. and Morgan, J. (2000), "Are Two Heads Better Than One?: An Experimental Analysis of Group vs. Individual Decisionmaking", *NBER Working Papers*, No 7909, Cambridge, MA.

Bonzom, P. and Barontini, C. (2006), "A National Central Bank within a Federal System", *Banque de France Bulletin Digest*, No 153, September.

Borio, C., Drehmann, M. and Tsatsaronis, K. (2012), "Charaterising the financial cycle: don't lose sight of the medium term!", *Working Paper*, No 380, Bank for International Settlements, June.

Brunnermeier, M., and Schnabel, I. (2016), "Bubbles and Central Banks: Historical Perspectives" in *Central Banks at a Crossroads: What Can We Learn from History?,* Cambridge University Press, Cambridge, UK.

Brunnermeier, M., Crockett, A., Goodhart, C., Persaud, A. and Shin, H. (2009), "The fundamental principles of financial regulation", *Geneva Reports on the World Economy*, Vol. 11, Centre for Economic Policy Research.

Budnik, K., Balatti, M., Dimitrov, I., Gross, J., Hansen, I., Kleemann, M., Sanna, F., Sarychev, A., Sinenko, N., Volk, M., Covi, G., di Iasio, G., Cera, K., Giuzio, M., Mirza, H., Moccero, D., Nicoletti, G., Pancaro, C., and Palligkinis, S., "Macroprudential stress test of the euro area banking system", *Occasional Paper Series*, No 226, ECB, Frankfurt am Main.

Busch, D. and Ferrarini, G. (eds.) (2015), *European Banking Union*, Oxford University Press.

Cámba-Mendez, G. and Mongelli, F. (2018), "Chronology of the financial crisis and the ECB monetary policy responses", mimeo, ECB, Frankfurt am Main.

Carboni, G., Darracq Pariès, M. and Kok, C. (2013), "Exploring the nexus between macroprudential policies and monetary policy measures", special feature A in the *ECB Financial Stability Review*, May.

Cerutti, E, Claessens, S. and Laeven, L. (2016), "The Use and Effectiveness of Macroprudential Policies: New Evidence", forthcoming, *Journal of Financial Stability* (also *IMF WP* 15/61).

Claessens, S. (2015), "An Overview of Macroprudential Policy Tools", *Annual Review of Financial Economics* (also *IMF WP* 14/214).

Claussen, C.A. and Røisland, Ø. (2006), "Uncertainty and Judgment Aggregation in Monetary Policy Committees", *Computing in Economics and Finance*, No 353.

Clerc, L., Derviz, A., Mendicino, C., Moyen, S., Nikolov, K., Stracca, L., Suarez J. and Vardoulakis, A.P. (2015), "Capital regulation in a macroeconomic model with three layers of default", *International Journal of Central Banking*, June.

Committee of Governors of the Central Banks of the Member States of the EEC (1993), Annual Report 1992, April 1993, Basel.

Committee for the Study of Economic and Monetary Union (1989), Report on Economic and Monetary Union in the European Community, Luxembourg.

Committee on the Global Financial System (2012), "Operationalizing the selection and application of macroprudential instruments", *CGFS Papers*, No 48.

Constâncio, V. (2012), "Towards a European Banking Union", lecture given at the start of the academic year of the Duisenberg School of Finance, Amsterdam, 7 September.

Constâncio, V. (2014), "Making macroprudential policy work", speech given at a seminar organised by De Nederlandsche Bank, Amsterdam, June.

Constânco, V. (2015a), "The role of stress testing in supervision and macroprudential policy", London School of Economics Conference on Stress Testing and Macroprudential Regulation: a Trans-Atlantic Assessment, 29 October.

Constâncio, V. (2015b) "Macroprudential policy in Europe: ensuring financial stability in a banking union", speech given at the Financial Stability Conference, Berlin, October.

Constâncio V. (2016) "Principles of Macroprudential Policy", speech given at the ECB-IMF Conference on Macroprudential Policy, Frankfurt am Main, 26 April.

Constâncio V. (2017a), "Synergies between banking union and capital markets union", speech given at the joint conference of the European Commission and European Central Bank on European Financial Integration, Brussels, 19 May.

Constâncio V. (2017b), "The future of monetary policy frameworks", lecture given at the Instituto Superior de Economia e Gestão, Lisbon, 25 May.

Constâncio V. (2017c), “Macroprudential policy in a changing financial system”, remarks made at the second ECB Macroprudential Policy and Research Conference, Frankfurt am Main, 11 May.

Constâncio, V. (2017d), “Macroprudential stress tests: A new analytical tool”, VoxEU column, 22 February.

Constâncio, V. (2018), “Financial stability risks and macroprudential policy in the euro area”, speech given by Vítor Constâncio, Vice-President of the ECB, at the ECB and Its Watchers XIX Conference, Frankfurt am Main, 14 March.

Constâncio, V., Cabral, I., Detken, C., Fell, J., Henry, J., Hiebert, P., Kapadia, S., Nicoletti Altimari, S., Pires, F. and Salleo, C. (2018), “Macroprudential policy at the ECB”, *Occasional Paper Series*, No 227, ECB, Frankfurt am Main.

Cozzi, G., Darracq Pariès, M., Karadi, P., Kok, C., Kőrner, J., Mazelis, F., Nikolov, K., Rancoita, E, van der Grote, A. and Weber, J. (2019), “Macroprudential policy measures: real economy impact and interaction with monetary policy”, *Working Paper Series*, ECB, Frankfurt am Main, forthcoming.

Darracq Pariès, M., Kok, C. and Rancoita, E. (2015), “Quantifying the policy mix in a monetary union with national macroprudential policies”, special feature D, *ECB Financial Stability Review*, November.

Darracq Pariès, M., Kok, C. and Rancoita, E. (2019), “Macroprudential Policy in a Monetary Union with Cross-border Banking”, *Working Paper Series*, No 2860, ECB, Frankfurt am Main.

Darvas, Z., Schoenmaker, D. and Véron, N. (2016), “Reform of the European Union financial supervisory and regulatory architecture and its implications for Asia”, *Working Paper 9*, Bruegel.

Dees, S., Henry, J. and Martin, R. (eds.) (2017), “STAMP€: Stress-Test Analytics for Macroprudential Purposes in the euro area”, eBook, ECB, Frankfurt am Main.

De Guindos, L. (2018), “The ECB and Financial Stability”, speech at the joint National Bank of Belgium, Toulouse School of Economics, Solvay Business School of Economics and Management and European Central Bank colloquium, Brussels, 5 November.

De Guindos, L. (2019), “The evolution of stress testing in Europe”, speech at the annual US-EU Symposium organised by the Program on International Financial Systems, Frankfurt, 4 September.

Dermine, J. (2015), “Basel III leverage ratio requirement and the probability of bank runs”, *Journal of Banking and Finance* 53: 266-77.

Di Giorgio, G. and Di Noia, C. (1999), “Should Banking Supervision and Monetary Policy Tasks Be Given to Different Agencies?”, *International Finance* 2(3), 361-378.

Draghi, M. (2014), “The path to recovery and the ECB’s role”, speech given at the Symposium on Financial Stability and the Role of Central Banks organised by the Deutsche Bundesbank in February.

Duisenberg W. (2000), “The future of banking supervision and the integration of financial markets”, speech at the Euro Group conference on “Improving integration of financial markets in Europe”, Turin, 22 May.

Eichengreen B., and Bordo, M.D. (2002), “Crisis now and then: what lessons from the last era of financial globalization?”, *NBER Working Paper*, No 8716.

ECB (2003), “The Adjustment of Voting Modalities in the Governing Council”, Monthly Bulletin, May, pp. 73-83.

ECB (2004), The Monetary Policy of the ECB, second edition (Frankfurt: ECB).

ECB (2007), Annual Report 2006, April (Frankfurt: ECB).

ECB (2008a), “The Implementation of Monetary policy in the Euro Area: General Documentation on Eurosystem Monetary Policy Instruments and Procedures”, Frankfurt, November.

ECB (2008b), “ECB Governing Council Decides to Continue its Annual Voting Regime”, ECB press release, Frankfurt, 18 December.

ECB (2009), “Financial Stability Review”, Special Feature B, Frankfurt am Main.

ECB (2016), Macroprudential Bulletin, Issue 1.

ECB (2016b), “Financial Integration in Europe”, Frankfurt.

ECB (2019), “Is central bank independence obsolete?”, Session 3 of a recent event in Frankfurt. See the video of the session.

ECB (2019b), “A conceptual framework for monitoring and assessing cross-border spillover effects from macroprudential policies in the EU”, *Occasional Paper Series*, ECB, Frankfurt am Main, forthcoming.

Eijffinger S., and Nijskens, R. (2012), “Monetary policy and banking supervision”, VoxEU column.

Enria, A. (2018), “What we have learnt from EU-wide stress tests”, speech delivered at the National Bank of Romania, Bucharest, 15 November.

Enria, A. (2019), “The future of stress testing – realism, relevance and resources”, Keynote at the European Systemic Risk Board (ESRB) Annual Conference, Frankfurt am Main, 26 August.

European Council (2013) EU Council Regulation No 1024/2013 of 15 October 2013 conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions.

EMI (1997) Annual Report 1996, April, Frankfurt.

European Commission (2013), “An important step towards a real banking union in Europe: Statement by Commissioner Michel Barnier following the trilogue agreement on the creation of the Single Supervisory Mechanism for the eurozone”.

European Commission (2014a), "A comprehensive EU response to the financial crisis: substantial progress towards a strong financial framework for Europe and a banking union for the eurozone”.

European Commission (2014b) “Finalising the Banking Union: European Parliament backs Commission’s proposals (Single Resolution Mechanism, Bank Recovery and Resolution Directive, and Deposit Guarantee Schemes Directive)”.

European Systemic Risk Board (2018), “The ESRB Handbook on Operationalising Macroprudential Policy in the Banking Sector”, on the ESRB website.

Fahr, S. and Fell, J. (2017), “Macroprudential policy – closing the financial stability gap”, *Journal of Financial Regulation and Compliance*, Vol. 25 Issue 4, pp. 334-359.

Fischer, B., Lenza, M., Pill, H. and Reichlin, L. (2008), “Money and monetary policy: the ECB experience 1999 – 2006”. In Beyer, A. and Reichlin, L. (eds.) *The Role of Money – Money and Monetary Policy in the Twenty-First Century*, ECB, Frankfurt am Main.

Fry, M., Julius, D., Mahadeva, L., Roger, S. and Sterne, G. (1999), “Key Issues in the Choice of Monetary Policy Framework”. In Mahadeva, L. and Sterne, G. (eds.) *Monetary Frameworks in a Global Context*, Routledge, London.

Fujiki, H. (2005), “The Monetary Policy Committee and the Incentive Problem: A Selective Survey”, *Monetary and Economic Studies*, Vol. 23, pp. 37-92.

Gehrig, T. and Iannino, M. C. (2016), “Did the Basel Process of Capital Regulation Enhance the Resiliency of European Banks?” *Working Paper*, Universität Wien.

Georgescu, O., Gross, M., Kapp, D. and Kok, C. (2017), “Do stress tests matter? Evidence from the 2014 and 2016 stress tests”, *Working Paper Series*, No 2054, ECB, Frankfurt am Main.

Giglio, S., Kelly, B.T. and Pruit, S. (2015), “Systemic risk and the macroeconomy: an empirical evaluation”, *NBER Working Paper*, No 20963, February.

Gren J., Howarth D. and Quaglia L. (2015), “Supranational Banking Supervision in Europe: The Construction of a Credible Watchdog”, *Journal of Common Market Studies*, Volume 53 Annual Review pp. 181-199.

Gros, D. and Schoenmaker, D. (2015), “European Deposit Insurance and Resolution in the Banking Union”, *Journal of Common Market Studies* 52: 529-546.

Gross, M., Kok, C. and Żochowski, D. (2016), “The impact of bank capital on economic activity: Evidence from a Mixed-Cross-Section GVAR model”, *Working Paper Series*, No 1888, ECB, Frankfurt am Main, March.

Gross, M. and Poblacion, J. (2015), “Assessing the efficacy of borrower-based macroprudential policy using an integrated micro-macro model for European households”, *Working Paper Series*, No 1881, ECB, Frankfurt am Main.

Goodfriend, M. (2000), “The Role of a Regional Bank in a System of Central Banks”. *Federal Reserve Bank of Richmond Economic Quarterly*, Vol. 86, No 1, pp. 7-25.

Goodhart, C.A.E. and Schoenmaker, D. (1992), “Institutional separation between supervisory and monetary agencies”, *Giornale degli Economisti* 9.

Goodhart, C. and Schoenmaker, D. (1995), “Should the Functions of Monetary Policy and Banking Supervision be Separated?”, *Oxford Economic Papers* 47: 539-560.

Goodhart, C. and Schoenmaker, D. (2009), “Fiscal Burden Sharing in Cross-Border Banking Crises”, *International Journal of Central Banking* 5: 141-165.

Goodhart, C. and D. Schoenmaker (2016), “The United States dominates global investment banking: Does it matter for Europe?”, *Policy Contribution* 2016/06, Bruegel.

Götz, M., Laeven, L. and Levine, R. (2016), "Does the Geographic Expansion of Banks Reduce Risk?", *Journal of Financial Economics*, vol. 120, issue 2, 346-362.

Hałaj G. (2013), "Optimal asset structure of a bank – bank reactions to stressful market conditions", *Working Paper Series*, No 1533, ECB, Frankfurt am Main.

Haldane, A. and Madouros, V. (2012), "The dog and the frisbee", proceedings of the Economic Policy Symposium – The changing policy landscape, Jackson Hole.

Hanson, S., Kashayp, A. and Stein, J. (2011), "A Macroprudential Approach to Financial Regulation", *Journal of Economic Perspectives*, No 25, pp. 3-28.

Hartmann, P. and Smets, F. (2018), "The first twenty years of the European Central Bank: monetary policy", *Working Paper Series*, No 2219, ECB, Frankfurt am Main.

Hellwig, M. (2014), "Yes Virginia, There is a European Banking Union! But It May Not Make Your Wishes Come True", *Preprints of the Max Planck Institute for Research on Collective Goods* 2014/12, Bonn.

Henry, J. and Kok, C. (2013), "A macro stress testing framework for assessing systemic risk in the banking sector", *Occasional Paper Series*, No 152, ECB, Frankfurt am Main.

Hiebert, P., Jaccard, I., Peltonen, T.A. and Schüler, Y. (2016), "Characterising the financial cycle: a multivariate and time-varying approach", ECB-IMF Conference on Macroprudential Policy, Frankfurt, 26-27 April.

Hiebert, P., Peltonen, T. A. and Schüler, Y. (2016), "Characterising the financial cycle: a multivariate and time-varying approach", *Working Paper Series*, No 1846, ECB, Frankfurt am Main.

Hollo, D., Kremer, M. and Lo Duca, M. (2012), "A Composite Indicator of Systemic Stress in the financial system", *Working Paper Series*, No 1426, ECB, Frankfurt am Main, March.

Horáková M. (ed.) (2012), "How Countries Supervise their Banks, Insurers and Securities Markets 2012", Risk Books, May.

Household Finance and Consumption Network (HFCN) webpage.

International Monetary Fund (2013), "Key Aspects of Macroprudential Policy", *Policy Paper*, June.

International Monetary Fund (2014) "Staff guidance note on macroprudential policy – Detailed guidance on instruments", *Policy Paper*, Washington, DC.

Kocherols, T. and Kok, C. (2019), "Leaning against the wind: macroprudential policy and the financial cycle", *Working Paper Series*, No 2223, ECB, Frankfurt am Main.

Kok, C., Moccero, D., Martin, R. and Sandström, M. (2014), "Recent experience of European countries with macroprudential policy", special feature, *ECB Financial Stability Review*, May 2014.

Korte, J. and Steffen, S. (2016), "Zero Risk Contagion – Banks' Sovereign Exposure and Sovereign Risk Spillovers", *Working Papers*, German Institute for Economic Research, Berlin.

KPMG (2015), *The state of Dutch banks in 2015: Adjusting to the new reality*, Amsterdam.

Jung and Mongelli (2016), "Monetary Policy Decision-Making when Information Search is Costly", *Banks and Bank Systems*, Vol. 11, Issue 1, pp. 15-22.

Juselius, M., Borio, C., Disyatat, P. and Drehmann. M. (2016), "Monetary policy, the financial cycle and ultra-low interest rates", *Research Discussion Papers*, No 24, Bank of Finland.

Langfield, S. and Pagano, M. (2016), "Bank Bias in Europe: Effects on Systemic Risk and Growth", *Economic Policy*, Vol. 31(85), pp. 51-106.

Lautenschläger, S. (2016), "Caught in the middle? Small and medium-sized banks and European banking supervision", speech at the Banking Evening of the Deutsche Bundesbank Regional Office in Baden-Württemberg, Stuttgart, 22 February.

Lefterov, A. (2015), "The Single Rulebook: legal issues and relevance in the SSM context", *Legal Working Paper Series*, No 15, ECB, Frankfurt am Main.

Lombardelli, C., Proudman, J. and Talbot, J. (2005), "Committees versus Individuals: An Experimental Analysis of Monetary Policy Decision Making", *International Journal of Central Banking*, Vol. 1, No 1, pp. 181-204.

Lucas, D. (2014), "Evaluating the government as a source of systemic risk", *Journal of Financial Perspectives*, Vol. 2, No 3, pp. 45-58.

Maier, P. (2007), "Monetary Policy Committees in Action: Is There Room for Improvement?", *Working Papers*, No 2007-6, Bank of Canada.

Masciandaro, D. and Quintyn, M.W. (2015), "The governance of financial supervision: recent developments", *Journal of Economic Surveys,* Vol. 30, No 5.

Meade, E.E. and Sheets, N. (2002), "Regional Influences on U.S. Monetary Policy: Some Implications for Europe", *International Finance Discussion Papers*, No 721, Board of Governors, Washington, DC.

Mersch, Y. (2017), "Central Bank Independence Revised".

Mourlon-Druol E. (2016), "Banking Union in Historical Perspective: The Initiative of the European Commission in the 1960s–1970s", *Journal of Common Market Studies*, Vol. 54, No 4. pp. 913-927.

Moutot, P., Jung, A. and Mongelli, F.P. (2008), "The Working of the Eurosystem Monetary Policy Preparation and Decision-Making-Selected Issues", *Occasional Paper Series*, No 79, ECB, Frankfurt am Main.

Nouy D. (2014), "Toward the European Banking Union: achievements and challenges", speech given at the OeNB Economics Conference, Vienna, 12 May.

Oesterreichische Nationalbank (2014), *Towards a European Banking Union: Taking Stock*, 42nd Economics Conference, Vienna, 2014.

Pacter, P. (2015), *IFRS as global standards: a pocket guide*, IFRS Foundation, London.

Padoa-Schioppa, T. (1999), "EMU and Banking Supervision", lecture given at the London School of Economics Financial Markets Group, 24 February.

Padoa-Schioppa, T. (2003), “Central banks and financial stability: exploring a land in between”, in Gaspar, V., Hartmann, P. and Sleijpen, O. (eds.) *The transformation of the European financial system*, Second ECB Central banking conference, ECB, Frankfurt am Main, pp. 269-310.

Padoa-Schioppa, T. (2004), “How to deal with emerging pan-European financial institutions?”, The Hague, 3 November.

Pollard, P. (2003), “A Look inside two Central Banks: The European Central Bank and the Federal Reserve”, *Review of the Federal Reserve Bank of St. Louis*, Vol. 85, No 2, pp. 11-30.

Praet, P. (2016), “The ECB and its role as lender of last resort during the crisis”, speech given at the Committee on Capital Markets Regulation conference on “The lender of last resort – an international perspective”, Washington DC, February.

Praet, P. (2018), “Delivering on our mandate – 20 years of ECB monetary policy”, speech given at an event organised by the ECB’s representative office in Brussels, 5 July.

Rogoff, K. (1985), “The Optimal Degree of Commitment to an Intermediate Monetary Target”, *Quarterly Journal of Economics*, Vol. 100, pp. 1169-1189.

Scheller, H.-P. (2004), *The European Central Bank – History, Role and Functions*, second revised edition, 2006, ECB, Frankfurt am Main.

Schäfer D., (2016), “A Banking Union of Ideas? The Impact of Ordoliberalism and the Vicious Circle on the EU Banking Union”, *Journal of Common Market Studies*, Vol. 54, No 4, pp. 961-980.

Schoenmaker, D. (2009), “The financial crisis: Financial trilemma in Europe”, VoxEU column.

Schoenmaker, D. (2014), “Macroprudentialism – A new VoxEU eBook”, VoxEU.org, 15 December.

Schoenmaker, D. (2015a), ‘Firmer Foundations for Europe’s Banking Union’, *Working Paper* 2015/13, Bruegel.

Schoenmaker, D. (2015b), “The new Banking Union Landscape in Europe: Consolidation Ahead?”, *Journal of Financial Perspectives*, Vol. 3(2), pp. 189-201.

Schoenmaker D. and Véron, N. (2017), “European Banking Supervision: the First Eighteen Months”, *Bruegel Blueprint Series*, No 25.

Sibert, A. (2006), “Central Banking by Committee”, *International Finance*, Vol. 9, No 2, pp. 145-168.

Smets, F. (2014), “Financial Stability and Monetary Policy: How Closely Interlinked?”, *International Journal of Central Banking*, June.

Smidkova, K. (2003), “Methods Available to Monetary Policy Makers to Deal with Uncertainty”, paper prepared for the conference on *Forecasting in a Central Bank*, Bank of England, London, August.

Tett, G. (2015), *The silo effect*, Simon and Schuster.

Trichet, J.-C. (2009), “The financial crisis and the response of the ECB”, speech at the ceremony conferring the honorary title of Doctor Honoris Causa at the University of National and World Economy in Sofia, Bulgaria, 12 June.

Tucker, P. (2018), “Unelected Power: The Quest for Legitimacy in Central Banking and the Regulatory State”, Princeton University Press.

Tucker, P. (2019), “How the ECB and other independent agencies reveal a gap in constitutionalism: a spectrum of institutions for commitment”, lecture given at the Carl Friedrich Von Siemens Foundation, Munich, February.

Valencia F. and Ueda, K. (2012), “Central Bank Independence and Macro-prudential Regulation", *Working Papers*, No 12/101, International Monetary Fund, Washington, DC.

Vandenbusche, J. (2006), “Elements of Optimal Monetary Policy Committee Design”, *Working Papers*, No WP/06/277, International Monetary Fund, Washington, DC.

Van Rompuy, H. (2014), Speech given as President of the European Council on the occasion of the inauguration of the Single Supervisory Mechanism, European Central Bank, 20 November.

Véron, N. (2015), “Europe’s Radical Banking Union,” *Essay & Lecture Series*, Bruegel.

Véron, N. (2016), “European Banks: Bumpy Transition to a New Policy Regime”, in Blanchard, O. and Posen, A. (eds.) *Reality Check for the Global Economy*, Briefing, No 16-3, Peterson Institute for International Economics.

Véron, N. and Wolff, G. (2015), “Capital Markets Union: a vision for the long term”, *Policy Contribution*, No 2015/05, Bruegel.

Vives, X. (2001), “Restructuring Financial Regulation in the European Monetary Union”, *Journal of Financial Services Research*, Vol. 19, pp. 57-82.

Whelan, K. (2012), “Should Monetary Policy be separated from Banking Supervision?”, *European Parliament Monetary Dialogue*, December.

Zilioli, C. and Selmayr, M. (2001), “The Law of the European Central Bank”, Bloomsbury Publishing.

Zilioli, C. (2019), “New Tasks for the European Central Bank: Between Separation, Synergies, and the Preservation of Independence”, in *Law & Financial Stability*, International Monetary Fund, Washington, DC.

Acknowledgements
We wish to thank Evangelia Rentzou, Marcello Tumino, Chiara Zilioli, Gyorgy Karoly Varhelyi, David Baez Seara, and Fabian von Lindeiner for their very thorough review and useful discussions. We would also like to thank the following for their comments and suggestions: Sergio Nicoletti, Natacha Valla, Frank Smets, Ricardo Mestre, John Fell, Paul Williams, Jérôme Henry, Roberto Motto, John Hutchinson, Balázs Zsámboki, Fátima Pires, Carsten Detken, Michael Stubbe, Bernhard Winkler, Anton van der Kraaij, Thomas Syrmos, Martín Vázquez Suárez, Ad van Riet, Ariana Gilbert and those who attended various presentations. Finally, we would like to thank Acacia Pedrazza Reiche for helpful assistance on formatting the script. We accept full responsibility for any errors or omissions; the views expressed are our own and do not necessarily reflect those of the ECB.

Nuno Cassola
CefES Univ. Milan-Bicocca and CEMAPRE Univ. Lisbon; email: nuno.cassola@unimib.it

Christoffer Kok
European Central Bank, Frankfurt am Main, Germany; email: christoffer.kok@ecb.europa.eu

Francesco Paolo Mongelli
European Central Bank, Frankfurt am Main, Germany; email: francesco.mongelli@ecb.europa.eu