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Macroprudential supervision: How to ensure financial stability in the European banking system.

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Abstract

The macroprudential supervision of the European banking system is a real challenge as there is a need to find a balance between global policy and adaptability. Indeed, even when trying to ensure the financial stability of the whole banking system there is the need to consider the specificities inherent of some countries. There is not one single European banking system but rather a heterogeneous system composed of European countries' banking systems. Moreover, European countries can be in a different financial cycle, something that makes it difficult for one supranational authority, to implement a policy for the European banking system.

In this paper, we will look at the organization of the authorities, as well as the procedural provided by the European banking regulations and guidelines to implement an efficient macroprudential supervision, accounting for the country's specificities. To maintain a supervision system harmonized, there is a need to coordinate the national level authorities by providing them with a common framework and by requiring reciprocity in the macroprudential measures implemented. We will focus on the role and work of the ESRB, as the European macroprudential authority. The subject of coordination will be addressed through the home/host country issue, and we will also underline its value in the aim to avoid regulatory spillovers and regulatory arbitrage. In this last issue, we will have a whole world perspective, also considering the relationship with the Third country banking system.

Keywords: Coordination, national flexibility, home/host country, reciprocity, regulatory arbitrage, regulatory spillovers.

Summary

Introduction

After the financial crisis of 2008, we have understood that something was missing in the way we account for risk. Indeed, we were monitoring the health of individual banks and thought that if each bank is in a good health, then the system will be in a good health too. However, this crisis has made us discovered that the interconnection of banks is making that the failure of one can result in the closure of other banks in a domino effect. Moreover, out of the banks, some dangerous risks may arise as the bubble in the housing market that will directly affect the banking system. Accounting for this missing piece, Basel III issued in 2010, has completed the microprudential supervision with the macroprudential supervision to address systemic risk.

In this paper, we will try to answer to the issue of supervising a heterogeneous banking system, which is the European one. At the same time, it will allow us to understand how the macroprudential supervision is working and how it is organized in order to reach its two main goals: financial stability and management of the systemic risk. Macroprudential policy and supervision are acting on the financial system as a whole and not only on individual cases. So, we might ask ourselves, how to pursue these objectives on a system composed of heterogeneous countries, economies, and financial institutions. How to implement global supervision and at the same time, dealing with imbalances of countries?

Our attention will focus on the coordination issue of macroprudential tools. We will also have cross borders consideration to have a perspective on the possibility of regulatory spillovers and regulatory arbitrage.

The rationale for macroprudential supervision and the actors involved

After the financial crisis of 2008, we understood that it was necessary to put more power at the supranational level. With the implementation of a macroprudential policy and macroprudential supervision, there is going to be a common prudential and regulatory framework for all the members of the European Union. This model was proposed by the De Larosière Group: "A more efficient, integrated and sustainable system of supervision. It will be a body at the EU level that will have a global view to oversee risk in the financial system as a whole; a stronger system to manage risk, try to reduce the severity of the future crises. "[1] It has suggested a mechanism that will allow to ensure homogeneity of technical rules

1 The Palgrave Handbook of European Banking Union law – Mario P. Chiti, Vittorio Santoro

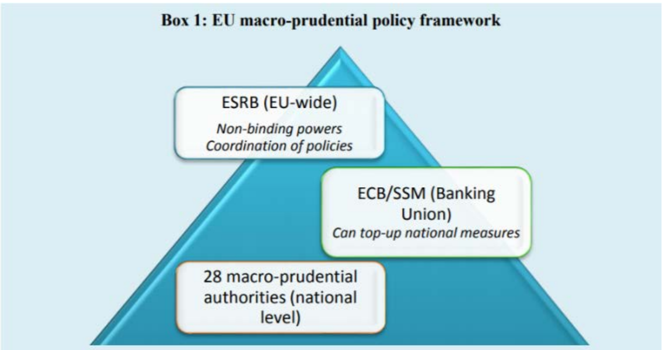
across members. Following these recommendations, the European System of Financial Supervision (ESFS) was established in 2010.

Indeed, what we forgot to consider is the interconnection between every financial institution and the fact that some credit institutions have a higher systemic risk level than others. For these systematically important firms, we need global standards. Macroprudential supervision gives a top-down perspective on the financial system that allows us to see some interactions, spillovers and interconnections that cannot be detected at the individual level.

To manage this systemic risk there are three main bodies. Differently from microprudential supervision that confers specific tasks to the bodies, it is more an organization of cooperation to ensure the circulation of all the information available, in a timely manner.

Among these bodies, the ESRB was designated as the body in charge of the macroprudential supervision of the overall European Union. The ESRB was established in 2010 in response to the global financial crisis for the purpose of protecting citizens and restoring confidence inside the financial system. The ESRB is not a body part of the ECB, it is supported by a secretary of the ECB, composed of central banks and their respective chairperson. It also includes the chairperson of the microprudential supervisory bodies as well as a member of the Commission.[2] This participation of the microprudential body is necessary to have a full assessment of the impact of macroprudential measures at a lower scale. The ESRB can be illustrated as a forum gathering relevant information for managing systemic risk. It has a broad integration has it keeps a dialogue with the international community in order to be aware of market intelligence and of international initiatives, in particular by interacting with the Financial Stability Oversight Council.

Its main tasks are to issue warnings when systemic risks are considered as important, making them public when appropriate and giving policy recommendations to NCAs, to bring a harmonized answer on how to fight systemic risk. However, the ERSB has not a binding power, it is rather "an act or explain" mechanism that applies to the ESRB recommendations.



Source: EGOV

At its side, the ECB is helping in providing statistical, analytical, and administrative support so that the ESRB has all the elements to carry the supervision of the European banking system. Unlike the ESRB, the ECB has binding powers but limited to the euro-zone. In the context of macroprudential supervision, the main power of

[2] Article 1, REGULATION (EU) No 1092/2010 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

the ECB is to top-up the national measures[3], in particular, it can decide to elevate the rates of the tools of the macroprudential supervision.

The last elements of the macroprudential supervision but not least are the 27 macroprudential authorities at the national level that can decide of the tools to implement and that can also contribute to the share of information with the ESRB. In this aim, each EU member will have a specific authority for this purpose: Croatia: « Financial stability Council" ; Denmark : "Systemic risk Council" ; France : " High council for financial stability"[4]. National macroprudential supervisors have the primary role in this supervision as they decide on their own to implement the tools. They must notify the ECB when they want to take any action in macroprudential supervision. Indeed, they have the expertise by their experience and responsibilities in financial stability. However, the role of the ESRB and ECB is still very important as NCAs are not the best placed to consider the cross-border effects of national measures.

As we are in a complex framework for macroprudential policy and as some tools are in the hands of several bodies, actions between ESRB and ECB and actions between Union authorities and NCAs will have to be coordinated and concerted in order to avoid overlap or regulatory asymmetry.

Tools and indicators in the hands of the macroprudential supervisors

To ensure this financial stability, the macroprudential supervisors are using indicators to assess risks and are providing some tools that the national supervisors can implement depending on the credit institutions' risk exposures. The main tools in use are the Countercyclical capital buffer (CCCB), the Loan to value ratio (LTV) the Debt to income ratios, and the Capital flow measures (CFM). The three first tools quoted are also managed by the microprudential supervisors. In this case, we have a coordination issue between macro and micro policy as we have one instrument in two hands. The macroprudential tools have the main purpose to make it more expensive to borrow in the aim to limit the indebtedness.

There are two kinds of tools with different impacts but with the same aim which is to find a way to ensure financial stability and to address systemic risk.

Some tools are structural, and some others are time-varying tools, also called cyclical tools. The main difference between those two kinds of tools is that cyclical tools can better address national specificities as they can adapt themselves to the financial

3 Article 102 : « Application of macroprudential tools by the ECB" ; REGULATION (EU) No 468/2014 OF THE EUROPEAN CENTRAL BANK
4 Recommendation on the macro-prudential mandate of national authorities (ESRB/2011/3)

cycle encountered by the country. Indeed, countries of Europe cannot be in the same financial cycle phase at the same time so a unique response would create some imbalances. Cyclical developments can be addressed through Countercyclical capital buffers which are part of the Basel III framework. The aim of this tool is to protect the banking sector from losses that may arise in case of recession by smoothing the financial cycle to avoid that it reaches a peak. This tool asks the banks to increase the level of capital when more credits are granted in order to have a greater room for maneuver in case of losses, which allows them to maintain the supply to the real economy, even in a recession. This tool is a reaction of the previous model, which was pro-cyclical, but which had an effect of exacerbating the economic downturn after an excessive credit growth phase.

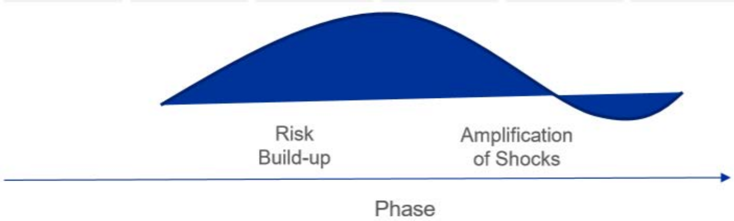
Structural tools are designed in a common way to every Member States but are answering to several criteria to suit to the institution in question. The O-SII buffer for example is considering individual banks' contributions to the global systemic risk by considering size, cross borders activities criteria, etc. A more general buffer is the systemic risk buffer, introduced by the EU legislation (SyRB)[5]. This capital buffer has no limit but can be augmented regarding the exposure to other member States. Across members, it goes from 0% (Hungary) to 3% (Poland, Sweden, Netherlands, and Bulgaria which have more exposures to foreign countries).

One other important aspect of supervision is the use of indicators to get an assessment of the systemic risk and to have some information for the calibration of the tools that we have seen before. These indicators used by the ECB are used to assess the near-term risks of systemic risk propagation.

Chart 2

Critical phases of a financial cycle

Phase	Type of systemic risks	Measurement focus	Dimension	Examples of vulnerabilities/ externalities	Modelling approach
Risk build-up	Cyclical risks	Probability of default	Time	Asset price misalignment, excessive leverage, maturity mismatch	Time series models, early warning models, market-based indicators
Amplification of shocks	Contagion and spillovers	Loss given default	Cross-sectional, cross-border	Interconnected-ness, commonalities in exposures	Networks, spillover models, conditional loss probabilities, structural



Sources: ECB, ECB calculations.

There are also some measures to understand the build-up of systemic risk, focused on the country's level of financial cycle measurement and early warning. ECB's staff are working on the establishment of these systemic risk indicators and are publishing their results on the "ECB's financial stability review". Some of these indicators are the JPoD (Probability of default of large and complex banking groups), the CISS (Composite financial stress index) and

5 The SyRB is introduced into EU law by Article 133 of the Capital Requirements Directive (CRD) (2013/36/EU)

at the country level, the CLIFS (country level of financial stress index). As it is not possible to find in one indicator all the potential threats to financial stability, it is necessary to combine them in order to have a broader view and having a near-term perspective : the imminent level of stress in the euro area to a mid-term perspective. These indicators can also include the individual contribution of institutions by providing interconnectedness and amplification measures, and contagion measures based on simulation of default cascade in a network.
A broader index used by the ECB is the Financial stability risk index (FSRI) which combines 23 macro-financial indicators which additionally captures cross-sectional dimensions of the systemic risk as spillovers and contagion risks.

Once the systemic risk is assessed and once the macroprudential tools are implemented by the national competent authorities, there will be some EU wide stress tests that will be carried out by the ESRB and the EBA, in order to confirm or not the choice of calibration of the tools. Macroprudential stress-tests are going beyond the assessment of the solvency of individual institutions due to the simulation of tail risk, as they also measure the level of systemic risk according to different scenarios. These stress tests will particularly allow authorities to observe the reaction of the bank to the scenarios, the interaction of the bank with the real economy as well as the contagion effect because of the interconnectedness of the bank among financial institutions, including non-banks (shadow banking sector).

The role of the ESRB: promoting an efficient coordination

To maintain a link and a satisfying communication between the supranational and the national level, there is the need to have a coordinator and the ESRB is the perfect candidate for it.

As coordinator of the national authorities, the ESRB regularly establishes the list of macroprudential authorities and designated authorities in the Member States. As these competent national macroprudential authorities are already existing, or some are newly created, they are adding heterogeneity in the framework and the ESRB will work to coordinate them.

Under CRR and CRD IV, which entered into force in 2014, the ESRB has a role of coordination in the activation of the new macroprudential tools as procedures are varying at the national level. In this aim, it oversees monitoring the measures taken by NCAs following the warning and recommendations.

The NCAs will have to answer to these recommendations/warnings by notifying the ESRB of the macroprudential measures that they intend to take[6]. The ESRB will then assess the proposed measures and if needed, will recommend some amendments.

6 Recital 9 of Recommendation ESRB/2011/3 on the macroprudential mandate of national authorities and Recommendation C.3 of Recommendation ESRB/2013/1 on intermediate objectives and instruments of macroprudential policy

This assessment considers the potential benefits of macroprudential measures on financial stability and the potential spillovers that it can create on the internal market or cross borders.

In the table below, we can see the measures around capital requirements that need a notification and approval from the ESRB and from other bodies of the European Union. What we can remark is that NCAs always must justify the implementation of measures or instruments and in some cases, must have the approval of the ESRB. This is the case for systemic risk buffer rates exceeding 5 % for example as well as national flexibility measures. For this purpose, there is an "Assessment Team" inside the ESRB composed of thirteen permanent members (two representatives of the ESRB's Secretariat, one representative of the ECB, one of the SSM, and nine of the different EU central banks).

Table 1.6
Key notification and approval procedures

	O-SII buffer (Article 131 of the CRD IV)	SRB (Articles 133-134 of the CRD IV)	National flexibility measures (Article 458 of the CRR)
Addressee	COM, ESRB, EBA	COM, ESRB, EBA, CADA of Member States concerned	European Parliament, Council, COM, ESRB, EBA
Justification of effectiveness and proportionality	Yes	Yes	Yes
Assessment of likely positive or negative impact on the internal market	Yes	Yes	Yes
Justification of why other particular instruments in the CRD IV/CRR alone or in combination cannot adequately address the systemic risk	No	Yes	Yes
Approval of addressees required?	No	Under certain conditions (Chapter 4 Table 4.7)	Council may reject measure

Figure 1 : The ESRB handbook on operationalizing macroprudential policy in the banking sector

An additional non-permanent observer can help if there are concerns about potential negative cross borders externalities for the measure notified.

Because of this area for discretion, the ESRB will also answer to possible inactions bias from national competent authorities[7]. Indeed, the issue of the tool CCyB for example, is that the cost of activating it is short term and visible immediately, however, its benefits are visible in the long run. Increasing the CCyB rate will increase the cost for banks and it is difficult to demonstrate its benefits for financial stability. As a result, countries can wait too much to activate them. For this issue, the ESRB has introduced the principle of the "guided discretion": "Article 136 of the CRD IV stipulates that, while authorities are free to exercise their judgment when setting the CCyB, they should follow a set of principles and publish a benchmark reference rate to guide their judgment.[8]"

The Basel Committee recommends calibrating this tool according to the indicator of the credit to GDP gap. When there is a gap of more than 2%, a positive CCyB rate should be set.[9] This will allow transparent decision-making, the design of the instrument would stay under the scope of the European macroprudential authority. Following the recommendation of the ESRB, NCAs, if they do not want to implement the actions recommended should justify it. On top of this, warnings, and

[7] Article 17, Follow up of ESRB recommendations, Regulation 1092/2010.
8 The ESRB handbook on operationalizing macroprudential policy in the banking sector
[9] Basel Committee on Banking Supervision (2010): Guidance for national authorities operating the countercyclical capital buffer, December.

recommendations can be made public in the aim to give some incentives to implement actions.

We can illustrate the efficiency of this method with a concrete example. In September 2016, the ESRB published a warning for Austria, Belgium, Denmark, Finland, Luxembourg, the Netherlands, Sweden, and the United Kingdom where it discovered some medium-term vulnerabilities from the real estate market, that could be a source of systemic risk. Then, in the follow-up of the warnings, the ESRB will report the changes in the macroprudential policy measures carried out by the addresses. What we can observe from the table is that every country has taken some measures to address the risks identified. Even though these warnings are not binding, they are considered seriously by the national macroprudential authorities.

Country	Macroprudential policy measures taken before 2016	Macroprudential policy measures taken since 2016
AT	NA	2017: • Implementation of the legal basis to adopt binding instruments (LTV, DSTI, DTI, amortisation criteria) in December 2017 2018: • Communication on prudent lending standards from the Oesterreichische Nationalbank, the Financial Market Authority and lately also the Financial Market Stability Board, including: • Maximum LTV values (20% downpayment) • Amortisation and affordability requirements (in fact DSTI limit at 30-40%) • Maximum maturities
BE	• Risk weight add-ons (fixed) for mortgage exposures of IRB banks • Monitoring framework regarding credit standards	2018: • Risk weight add-ons (both fixed and risk-adjusted) for mortgage exposures of IRB banks
DK	• LTV: 95% • Supervisory diamond for mortgage banks	2016: • Wealth requirement at loan origination linked to DTI in larger cities 2018: • Mortgage product restriction linked to DTI and LTV. • CCyB at 1.0%
FI	• LTC: 90% (95% for first-time buyer)	2018: • Decrease in LTC limit • RRE risk weight floor • SyRB between 1% and 3% • Several FIN-FSA Board recommendations, including on housing companies loans
LU	• Stricter RW (75%) for the part of the mortgage loan exceeding 80% of the value of the real estate property	2016: • RW floor of 15% for IRB banks mortgage exposures 2018 • CCyB at 0.25% • Monitoring framework for lending standards
NL	• LTV: 102% • DSTI limits (from 10.5% to 35%) in a matrix by income and interest rate levels • Maturity limit of 30 years for eligibility for tax deductibility of mortgage interest payments	2018: • LTV decreased to 100%
SE	• LTV: 85%; • Risk weight floor of 25% for mortgage loans • Affordability tests – microprudential measure with certain macroprudential effects • CCyB at 1.5%	2016: • Amortisation requirement linked to LTV: households are required to amortise 2% of the mortgage, if LTV>70%, 1% if LTV>50% 2018: • Amortisation requirement linked to LTI: Households are required to amortize an additional 1% of the mortgage, if LTI>450% • Increase of the CCyB to 2.5%
UK	• LTI>4.5 for 15% of new loans • Affordability tests • Stress-testing	2017: • CCyB at 0.5% • Stress testing 2018: • Increase in CCyB to 1% • Stress testing

Source: ESRB assessment.

To ensure macroprudential supervision, the share of information is important, even more, when the bank has foreign branches. A high level of cooperation is needed to reduce complexity and costs. That is why ESRB justifies the necessity of creating a framework for information sharing. For Finland and Malta for example the shares in foreign branches are 40% of the assets of the bank. To do a correct assessment, macroprudential authorities need accurate and timely information, including information on branches. For this objective, the ESRB regulation is saying that the ESRB should have access to all information to perform in the right way its duties. This information must be provided regularly. We call it the "need to know principle". It can include: Information on loans, deposits, and exposures; calibration for the borrower-based measures and information regarding the interbank market in the aim to assess the interconnectedness. For the same purpose, there will also have cooperation with the microprudential authorities[10].

In its role of ensuring an efficient macroprudential supervision, the ESRB will also have to find a balance between financial stability of individual financial institutions and possible spillovers on other EU members or the internal market. Indeed, when there are potential cross-borders effects, NCAs must have a certain level of coordination before implementing some macroprudential measures by adjusting the tools. The ESRB will help in this coordination by promoting best practices and by providing a homogenous framework for EU members.

When macroprudential supervision allows for adaptability and flexibility to consider the country's specificities.

Now that we have seen the purpose of macroprudential supervision, the organization of the different actors in order to supervise the European banking sector and the different tools in use, we will see what concretely allows to combine the maintenance of financial stability, and the adaptation to the country's specificities. Indeed, the consideration of country's specificities is necessary as the 27 Members States do not have the same characteristics in their economies, the credit institutions inside these countries, also have heterogeneous characteristics.

Even in macroprudential supervision, there is the need to consider specificities of European credit institutions as some can represent more or less systemic risk. In microprudential supervision, the division of tasks between NCAs and the ECB is done on a quantitative criterion, which is the size. Here, we will consider a qualitative criterion that can make that even smaller banks can be considered as systemically important, because of their complexity for example. These institutions can have private benefits because of their rational decisions but they can also contribute to bringing some externalities in the market that can create some market distortions. For this purpose, a tool has been developed to target systematically important and complex institutions.

10 Article 15, Collection and exchange of information, Regulation 1092/2010

UniCredit, Raiffeisen, Erste, KBC, and Société Générale are among them because of their global footprint. For these domestically important banks for which the failure can have a huge impact on domestic or/and international banks, NCAs have the choice to impose a higher buffer. This additional buffer is the buffer on O-SIIs (Other systemically important institutions) which can reach 2% of CET1. The EBA has the mandate to publish a guideline that indicates to NCAs a methodology to identify these O-SIIs thanks to a set of indicators as the size, importance, volume of cross border activities, complexity, and interconnectedness.[11]

Criterion	Indicators	Weight
Size	Total assets	25.00%
Importance (including substitutability/financial system infrastructure)	Value of domestic payment transactions	8.33%
	Private sector deposits from depositors in the EU	8.33%
	Private sector loans to recipients in the EU	8.33%
Complexity/cross-border activity	Value of OTC derivatives (notional)	8.33%
	Cross-jurisdictional liabilities	8.33%
	Cross-jurisdictional claims	8.33%
Interconnectedness	Intra-financial system liabilities	8.33%
	Intra-financial system assets	8.33%
	Debt securities outstanding	8.33%

Figure 2 : EBA/GL/2014/10 Mandatory indicators for scoring

With these indications, each national authority will have to calculate a measure of "domestic systemic relevance" for each bank. This domestic systemic relevance can be then easily compared across countries, accounting for national specificities as these scores are calculated for the domestic market. As in the CCCB, the ECB still has the power to top this additional buffer but not to reduce it. This tool is a good compromise: the calibration of instruments ensures a harmonized framework for financial stability. At the same time, with the fact that NCAs have scope to account for their national specificities, it also considers changing patterns in domestic banking markets.

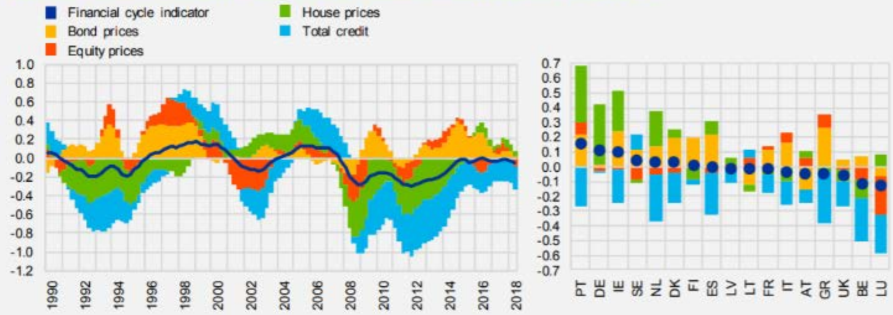
Looking from a higher scale, macroprudential supervision, although it has a global policy is also considering the country's specificities. It can do it by adapting the set-up of tools of macroprudential supervision in order to bring a tailored answer to the specific needs of a country. Indeed, the flexibility from which benefits countries allows for a different implementation of the measures. In this aim, the ESRB gives a mandate to NCAs that let them with a level of flexibility to implement the macroprudential measures and supervision: "The effectiveness of macroprudential policy in Europe also depends on the national macroprudential policy frameworks of the Member States, since the responsibility for the adoption of the measures necessary to maintain financial stability lies first within national frameworks. "[12]

[11] Under the mandate stated in Article 131(3) of the CRD IV
[12] ESRB/2011/3 on the macroprudential mandate of national authorities.

Chart A

The financial cycle over time and across a subset of EU countries

(left panel: deviation in units over time; right panel: deviations in units per country for Q2 2018)



Sources: ECB and ESRB calculations.

*Notes: The financial indicator and its components (left panel) are computed using aggregate data for the euro area. In the right panel, country-specific estimates for the second quarter of 2018 are displayed. For certain countries, their respective time series were not long enough to allow for the construction of a representative historical mean, causing their exclusion from the right-hand panel (CY, MT, SI, SK). The methodology used to compute these results is the same as the one proposed in Hiebert, P., Peltonen, T. and Schüler, Y., op. cit. and used in Hiebert, P., Peltonen, T. and Schüler, Y., "**Coherent financial cycles for G-7 countries: Why extending credit can be an asset**", Working Paper Series, No. 43, ESRB, Frankfurt am Main, May 2017.*

We can justify this need for national flexibility because of a real issue of synchronization among the Member States. Size and impact asymmetries can make cross border policy coordination more difficult. Indeed, among the Member States, there is an issue of synchronization of the financial cycles (on average 13 years) and an issue of synchronization in the business cycles (on average 5 years). To assess it, we can look at the asset prices and total credit to households. Looking at the graph and the subcomponents, we can see that for some countries the financial cycle was driven up by house prices and for some other countries, it was more driven up by bonds and equity prices. We can also remark that the financial cycle indicator is not at the same level for every country. There is a considerable cross-country heterogeneity as stronger variables are characterizing the financial cycle (Equity prices, house prices) than those that characterize the business cycle (GDP for example).[13]

These issues of synchronization are making that countries will encounter specific shocks and it will not be possible to stabilize the financial system with a common monetary policy and a constrained national countercyclical fiscal policy. For this reason, one of the main goals of the macroprudential policies is to attenuate the financial cycles through country-specific macro-policies.

13 Capturing the financial cycle in Euro area countries; ECB Financial Stability Review November 2014

As NCAs know well their domestic banking system, financial structure, and exposure to risk, they are in the first line to decide for the implementation of the tools. This can be observable by the notifications sent by NCAs which represent the announcement of a measure before its introduction. Flexibility is allowed by the fact that there are some instruments that are not harmonized at the EU level. It concerns in particular borrower-based measures such as loan-to-value, loan-to-income, or debt service-to-income that can limit the leverage of households and non-financial corporations. These instruments are highly efficient to target risky credit origination and some countries use them to target the specificity of their real estate market. In this way, countries that have been affected more strongly by the financial crisis can apply fewer measures. We can also consider different views from countries as regards the role of macroprudential policy, the financial cycle in which countries are and different levels of systemic risk.

Table 3

Tightening or loosening of macroprudential instruments in 2018

Member State	Countercyclical capital buffer	Real estate instruments	Systemic risk buffer	O-SII/G-SII buffer	Other instruments
Austria	→	→	→	↑	→
Belgium	→	↑	n/a	→	→
Bulgaria	↑	→	→	→	→
Croatia	→	→	→	→	n/a
Cyprus	→	→	→	→	→
Czech Republic	↑	↑	→	→	n/a
Denmark	↑	→	↑	→	→
Estonia	→	→	→	→	n/a
Finland	→	↑	↑	→	n/a
France	↑	n/a	n/a	→	↑
Germany	→	n/a	n/a	→	n/a
Greece	→	n/a	n/a	→	n/a
Hungary	→	↑	→	→	↑↓
Ireland	↑	→	n/a	→	→
Italy	→	n/a	n/a	→	n/a
Latvia	→	→	n/a	→	n/a
Lithuania	↑	→	n/a	→	→
Luxembourg	↑	→	n/a	→	→
Malta	→	→	n/a	→	→
Netherlands	→	→	→	→	n/a
Poland	→	→	→	→	→
Portugal	→	↑	n/a	→	↑
Romania	→	↑	→	↑	→
Slovakia	↑	↑	→	→	→
Slovenia	→	↑	n/a	→	↑
Spain	→	n/a	n/a	→	n/a
Sweden	↑	↑	→	→	→
United Kingdom	↑	→	n/a	→	→
Iceland	↑	→	→	→	n/a
Liechtenstein	→	→	→	→	n/a
Norway	↑	→	→	→	→

Source: ESRB.

Notes: ↑ (red) refers to a tightening; ↑↓ (gold) refers to both a tightening and loosening at the same time; → (grey/white) refers to no change; n/a stands for non-applicable. This denotes that no related measure has been notified to the ESRB and recorded in its Overview of national measures of macroprudential interest in the EU and the European Economic Area. "Real estate instruments" include any instrument (borrower-based or capital-based) dedicated to the residential or commercial real estate sector. The "Other instruments" column includes instruments which do not fall into any of the other categories. Tightening/loosening refers to the policy situation compared with the situation before the adoption of the measure. The table refers to measures taken in 2018 but which may sometimes come into effect later. Similarly, measures which came into effect in 2018 but were adopted earlier are not shown. In the case of G-SII/O-SII buffers, tightening/loosening refers to changes in the methodology of the G-SII/O-SII identification and buffer-setting (not to changes in the number of G-SIIs/O-SIIs or their buffer levels resulting from the actual application of the same methodology) or changes in the phasing-in arrangements.

On the table, we can see that the "Countercyclical buffer" and "O-SII buffer" are common tools of the macroprudential policy so they are adopted by every Member States. However, for several countries, the "Systemic risk buffer "and "Real estate instruments" are non-applicable, meaning that there are no identified risks that justify the application of these tools in the countries in question.

As seen before, the ESRB will send some recommendations to NCAs to coordinate them and to ensure effective macroprudential supervision. As there is still a level of discretion from the NCAs to implement the recommendations, the ESRB should try to prevent the regulatory arbitrage that can drive inefficient the macroprudential supervision.

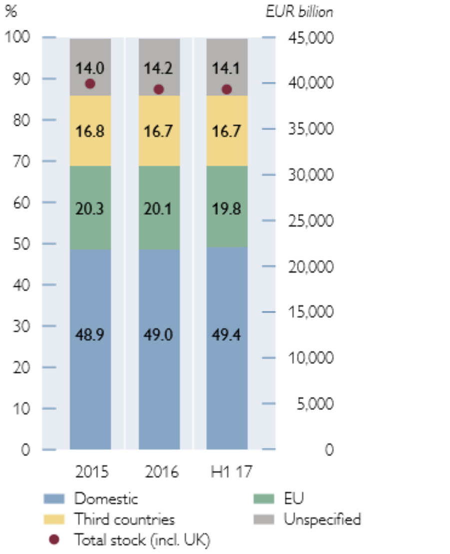
This area for national adaptability is allowed by the "flexibility package", under article 458 of CRR, that gives the possibility to NCAs to temporarily derogate from the Single rule book by imposing national measures that are stricter than those defined at European level, in terms of capital requirements, large exposure requirements, disclosure requirements, the level of the capital buffer, liquidity requirements, risk weights for dealing with real estate bubbles and exposures within the financial sector.

For it, they should issue a notification to the European Parliament, Council, Commission, ESRB, and EBA if this decision is supposed to have huge cross borders effects on other EU members or on the internal market. The ECB can also choose by itself to elevate these buffers for a certain country or to implement them after notification to the NCA. This power from the ECB[14] allows to prevent the inaction bias of NCAs that can trigger the efficiency of the package of tools.

The home and host country issue

If the macroprudential policy can be in some ways tailored, the most important thing is to coordinate countries to ensure a sound management of the financial stability risk when considering cross borders activities of credit institutions. Indeed, some Member States can expand their banking activities in another Member State, as well as hosting some credit institutions from others Member States, but also, hosting credit institutions that are coming from outside of the European Union. The adaptation of the macroprudential supervision in order to consider this globalization of the banking activity is necessary in order to prevent spillovers as well as regulatory arbitrage. Indeed, on average, half of the exposures of EU banks are outside from the originating Member State.

Average geographical breakdown of EU banks' credit exposures, 2015–2017



Source: ECB Consolidated Banking Data, ESRB calculations.

Note: The data include total original exposures for credit, counterparty credit and dilution risks, equity exposures and free deliverables. The data are reported at the highest level of consolidation in the EU for the absolute figures at the top of the bars and at the level of Member States for the shares indicated within the bars. This chart shows the shares of bank exposures to (1) the Member State in which the bank resides ("domestic"), (2) any other EU Member States ("EU"), (3) countries outside the EU ("third countries"), and (4) an unspecified residual, as a percentage of total exposures of EU banks.

In this aim, the ESRB is also in charge of promoting the principle of reciprocity which states that domestic and foreign banks must require the same requirements according to a particular country's exposure, in order to avoid regulatory arbitrage. Under this principle, the foreign country authority must apply the same macroprudential measures as the domestic macroprudential authority. This is a rule necessary which allows the possibility to expand abroad, without jeopardizing financial stability. As this is on a voluntary basis, the ESRB has established a framework to induce countries to use reciprocation. [15]This is justified by the aim to limit negative spillovers that can

14 Article 5, "Macroprudential tasks and tools", Council Regulation No 1024/2013

15 Recommendation on the assessment of cross-border effects of and voluntary reciprocity for macroprudential policy measures (ESRB/2015/2)

represent the domestic macroprudential supervision on international branches, as shown by the collateral Damage of the

Japanese Bank Crisis on the real economy in the United States (Joe Peek and Eric S. Rosengren, 1997 and 2000).[16]

The rule decided by the regulation in this aim is that host countries will supervise their domestic financial institutions, including its branches which are abroad. It means that macroprudential tools implemented by a host country on its domestic credit institutions would not apply to foreign branches located in the host country. The Basel Committee of Banking Supervision has recognized this problematic of international use of the CCCBs and has introduced the principle of "jurisdictional reciprocity". Under this principle, foreign supervisors apply to their banks that lend to the host country additional capital buffers posed by the host supervisor on their banks. However, this principle only applies to CCCBs and not to other macroprudential tools.

The principle of reciprocity leads to the recognition of the rates introduced by other countries. The final rate applied at the consolidated level then corresponds to the average of the CCB rates imposed by the countries in which this institution has exposures weighted by the exposure amounts of this institution in each of these countries (1.58% in the example presented in the table). In the European Union (EU),

from 2016, reciprocity is mandatory for CCB rates up to 2.5% and voluntary beyond that.

Figure 3 : Simple example of the application of the principle of reciprocity for an European bank, having a credit exposure with country A, B and C.

-	Country A	Country B	Country C	Total
Credit exposures (weights)	50	50	30	130
Country-specific CCB rate	2%	1,50%	1%	
Consolidated CCB rate	(50/130)*2%	(50/130)*1,5%	(30/130)*1%	1,58%

[16] A shock on the loan supply from Japanese banks hurt the US real estate market as it has hosted branches of Japanese banks.

However, exact reciprocity is only possible if the other country as the same instrument. As it is not always the case, the ESRB can recommend reciprocal actions on its own or following the request of the implementing member.

A recommendation from the ESRB was to ask relevant authorities to apply a 1% systemic risk buffer rate to the domestic exposures of all credit institutions authorized in Estonia, with a material threshold of 250 000 million euros applied to exposures located in Estonia, under which the reciprocating measure is not mandatory[17]. Inside this recommendation, the ESRB is also giving some guidance for exposure in Belgium, Finland, France, and Sweden.

Another justification for considering the interconnected financial system rather than only focusing on the domestic system is that agents can borrow from foreign banks or their branches. It creates a possibility of regulatory arbitrage that needs to be considered to maintain efficient macroprudential supervision. The principle of reciprocity, therefore, limits the possibilities of leakage and gives the national macro-prudential authorities a way to monitor the volume of credit flowing in their economy regardless of the legal nature (subsidiary or branch) or the location of the originating institution.

There is also a consideration for countries that are not part of the EU rulemaking, these countries are referred to as "Third country". For this particularity, article 139 of CRR allows designated authorities, when they calculate the rate of their institution-specific Countercyclical Buffer to consider exposure to a third-country[18]. As the principle of reciprocity cannot intervene here, hosting countries can apply it when they consider that the Countercyclical buffer rate set by the relevant third-country authority for that third country is not enough to protect the Member State. It is a way to avoid regulatory arbitrage. As third countries are a huge number, the ESRB is mainly focusing monitoring on the most material ones. The ESRB revises every year the list of material third countries according to quantitative information related to the exposure of the EU banking sector. In 2018 these third countries included: US, Hong Kong, Singapore, Turkey, China, Brazil, Switzerland, and Russia.

It is important to allow for tailored supervision here as there is a heterogeneous exposure of the individual national banking sectors to the different material third country. France, Spain, Germany, the Netherlands, and Italy are the most exposed and the first 3rd country is the US. In this aim, the ESRB will work with some representatives of the third countries with the aim to specify the involvement and procedural of these third countries in the macroprudential supervision of the ESRB. [19]

[17] Amending Recommendation ESRB/2015/2 on the assessment of cross-border effects of and voluntary reciprocity for macroprudential policy measures (ESRB/2019/1)

[18] Recommendation of 11 December 2015 on recognizing and setting countercyclical buffer rates for exposures to third countries (ESRB/2015/1)

19 Article 9: « Meetings of the General Board" REGULATION (EU) No 1092/2010

Conclusion

We have just analyzed how macroprudential supervision is working in the European banking system and how it considers the country heterogeneities as well as the potential externalities caused by this supervision. The answer from the European banking system is to give the major power to the national competent authorities, something that can be seen as contradictory at first glance because they only have a view on their home system. The rationale for this choice is to allow for flexibility and adaptability, considering the imbalances between countries and their specificities. Indeed, national macroprudential supervisors are some experts in their respective banking systems. The ECB with its broader view will keep an eye on the choices of NCAs concerning the implementation and calibration of macroprudential tools by the notifications sent by NCAs. In this manner, the ECB has the last say as it can object or decide to apply higher requirements for capital buffer rate. Then, the ESRB will complete the work by allowing for coordination thanks to not binding warnings and recommendations as well as avoiding country inaction. To account for the internationalization of the banking system, the ESRB will recommend reciprocation measures to avoid regulatory arbitrage and regulatory spillovers. Its work is remarkable as there is a high compliance rate even though it has only soft powers.

One thing that we have not considered here but that can be interesting to consider in a forthcoming study, is the accountability of the shadow banking in the macroprudential supervision, something challenging by the fact that it escapes from the EU banking regulation.

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