CENTRAL BANKS IN ACHIEVING FINANCIAL STABILITY

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Abstract
The main objective of this paper is to analyze the evolving role of central banks in fostering financial stability and look at some current issues that have practical and operational relevance. Since the last global financial crisis in 2008-09, an increasing attention has been devoted to maintaining overall financial system stability and central banks have played strong roles in domestic financial stability policy, but the full scopes of their financial stability mandates are ambiguous. Over the past ten years, prudent macroprudential policy has served the European zone well in cushioning the impact of the global financial crisis in 2008-09. However, today the global economic outlook remains highly uncertain, credit risks, prolonged environment of low interest rates, the growing corporate liabilities and households liquidity pressures may morph into insolvencies that may have implications for the financial stability in the medium term. Since the credibility of macroprudential policy greatly influences the management of the systematic risks in the financial markets and also the effectiveness of monetary policy, central banks in EU zone and worldwide have become more involved in dealing and monitoring closely the financial stability. Generally, financial stability is its ability to facilitate and enhance economic processes, manage risks, and absorb shocks. This paper also discusses some of the existing efforts to construct an aggregate financial stability index and its application. To summarize the discussion below, financial stability has been a fundamental objective of central banks. Indeed, many central banks including the Federal Reserve and ECB were established financial stability as part of their mandate. The paper argues that central banks may contribute to financial stability in four different ways: 1) as crisis managers - as lenders of last resort, in an acute financial crisis; 2) through focusing their regular monetary policy on the right objective and using macroprudential policy on decisions and 3) may act as prudential regulators and supervisors themselves and 4) through their communication and or information policy. In relation to the above, policy coordination between the central banks and the government is crucial to promote financial stability.

Keywords: *central banks, macroprudential policy, monetary policy, systematic risks, financial stability, economic development, financial stability index, National Bank of Moldova*

JEL Classification: *E52 E58 E63 H63*

INTRODUCTION

The main objective of this paper is to analyze the evolving role of central banks in fostering financial stability and look at some current issues that have practical and operational relevance. The paper is structured as follow Section 2 begins by setting out various definitions and concepts of financial stability. It distinguishes between narrow and boarder scope of financial stability and pays attention to the concept of financial stability index, in Section 3, we review how central banks address financial stability in their mandate. In Section 4, we provide a comprehensive view of the main macroprudential policies and tools in fostering financial stability, in Section 5 we examine the supervisory role of central banks and its effect on financial stability, Section 6 we discuss the role of National Bank of Moldova in financial stability and its recent attempts to stabilization. The final section 7 concludes with general observations and recommendations.

WHAT IS FINANCIAL STABILITY?

Since the international crises at the end of the 90s*, also strengthened by the financial and economic crisis in 2007-09, **financial stability** has become often discussed

issues in today's economic literature. The evaluation of financial stability and its soundness is a complex task and involves a large number of multidimensional criteria and evaluation techniques. At present, a single approach to the definition of the concept of financial stability has not been developed in world practice. It is useful to define financial stability since the we aim to examine the question how much weight should be attached to financial stability versus other central bank objectives and also in assessing how central banks are pursuing their financial stability objectives. The narrow definition can be presented as a state in which the financial system is resistant to economic shocks and smoothly fulfils its basic functions preventing the build-up of bubbles; and second, it is about making the system more resilient. However, the broader definitions of financial stability include the macro-economic dimension of financial stability and interactions between the financial and real sectors.

For the purpose of this paper, we have employed the broader concept where financial stability can be defined as "a financial system is in a range of stability whenever it is capable of facilitating (rather than impeding) the performance of an economy, and of dissipating financial imbalances that arise endogenously or as a result of significant adverse and unanticipated events" (IMF, 2004)

Financial stability relates to the ability of a financial system (1) to facilitate the performance of an economy – contributing to the efficient allocation of real economic resources, the rate of output growth, and facilitating saving, investment, and wealth accumulation (b) to assess, price, and managing financial risks; and (c) to maintain its ability to absorbs shocks—primarily through self-corrective mechanisms (Schinasi, 2004). Some researchers have defined financial stability it in terms of what it is not—a situation in which financial instability and or imbalances impair the real economy. A similar approach is taken by Allen and Wood (2006) who define the characteristics of an episode of financial instability first and then define financial stability as a state of affairs in which episodes of instability are unlikely to occur.

Schinasi (2004) reports in an annex various definition of financial stability. We narrow ourselves to report the one provided by Roger Ferguson of the Board of Governors of the US Federal Reserve System (made in 2003): *"It seems useful...to define financial stability...by defining its opposite: financial instability. In my view, the most useful concept of financial instability for central banks and other authorities involves some notion of market failure or externalities that can potentially impinge on real economic activity……, I'll define* ***financial instability*** *as a situation characterized by these three basic criteria: (i) some important set of* ***financial asset prices seem to have diverged sharply*** *from fundamentals; and/or (ii)* ***market functioning and credit availability****, domestically and perhaps internationally,* ***have been significantly distorted****; with the result that (iii)* ***aggregate spending deviates*** *(or is likely to deviate) significantly, either above or below, from the economy's ability to produce."*

Through the last years, the central banks monitoring process has been widening its scope including regular analyzes of risks and threats to the stability of the financial system. This has resulted into the publication of Financial Stability Reports (FSR) and in many of the subject reports financial stability assessment has been taking into consideration risks arising not only from inside the traditional banking system, but also from outside the banks' balance sheet. The words of a central bank can be powerful and they can affect markets in either direction. Such communication can encourage market participants to behave more prudently and also improve market discipline by sharing their views on relevant risks, central bankers create greater transparency about vulnerabilities in the financial sector. Many central banks in their financial stability reports try to evaluate

financial stability related risks focusing on various market segments and banking related variables. Today, central banks reports seem not only to concentrate on the banks' performance discussing banking ratios and risks in considerable detail, but also to take account insurance and other forms of nonbank financial intermediation.

According to assessment conducted by Capraru (2010), in general, central banks communication policy in terms of financial stability have increased in the past years in Europe. His assessment is based on measuring the Sotomska-Krzysztofik and Szczepanska transparency index in the field of financial stability and the index was calculated for the end of 2010, on a sample of 36 central banks (ECB, EU-28 central banks, Norway, Switzerland, Iceland, Russia and 3 candidates to EU: Turkey, Macedonia and Croatia) ranging from 1 to 10 according to the transparency level, the score of 10 indicating the most transparent awarded by the Bank of England (10 p). Overall, the results show that most central banks in Europe (20) obtained a high score between 7-10 points. The researcher concludes that the main factors driving these positive trends were the process of European integration and the international financial crises experience.

The next question that follows is how central banks measure financial stability. There is no single answer to this question. In recent years the approach to development of such index shifted to a broader system-wide assessment of risks to the financial markets, institutions and infrastructure as the locus of concern moved from micro-prudential to macroprudential dimensions of financial stability. Recently, the analytical focus has further concentrated on the dynamics of behaviour, the potential build-up of unstable conditions as well as the so-called transmission mechanisms of shocks.

For example, some central banks calculate an aggregate financial strength index that combines six areas of financial soundness indicators, namely capital adequacy, profitability, liquidity, asset quality, interest rate risk and exchange rate risk. The issue of financial stability is organically linked with banking stability. Banking stability gets affected positively or negatively with the prevailing conditions in the financial market and the real economy; ultimately banking stability determines whether an economy is strong enough to withstand both the internal and external shocks. In the literature, a variety of methodologies for constructing Financial Stability Index or Banking Stability index have been developed. Many authors used selected quantitative indicators of the set of basic Financial Soundness Indicators complied by the International Monetary Fund. These indicators (40 indicators) are divided into two sets: core set and encouraged set. Core set includes statistics on the health and performance of deposit takers and consists of main indicators related to the banking sector (17 indicators) provided below.

Table 1. IMF Financial Soundness Indicators: The Core set

Core set	
Deposit takers	
Capital Adequacy (we measure Banks' capital cushion size to address expected or unexpected losses)	Regulatory capital to risk-weighted assets Tier 1 capital to risk-weighted assets Nonperforming loans net of provisions to capital Common Equity Tier 1 capital to risk-weighted assets Tier 1 capital to asset
Asset Quality	Nonperforming loans to total gross loans Loan concentration by economic activity Provisions to nonperforming loans
Earnings and Profitability **Liquidity** (Ratio of banks' readily available short- term resources that can be used to meet short-term obligations	Return on assets Return on equity Interest margin to gross income Noninterest expenses to gross income Liquidity Liquid assets to total assets (liquid asset ratio) for all DTs Liquid assets to short term liabilities for all DTs Liquidity Coverage Ratio for the DTs that have implemented Basel III liquidity standards Net Stable Funding Ratio for the DTs that have implemented Basel III liquidity standards
Sensitivity to Market Risk	Net open position in foreign exchange to capital
Real Estate Markets	
	Residential real estate prices

Source: IMF (2019)

The reader will notice that some of the deposit takers indicators consist in variables that contain indication on the financial stress of institutions, financial stress meaning the fear of failing to remain able to fulfil all contractual commitments.

The IMF has also stated publishing a global financial stability map which provides an assessment of the risks and the underlying conditions for the global financial system. Leading indicators in six broad areas are considered: monetary and financial conditions in leading industrial countries, risk appetite in global financial markets, macro-economic risks in G3 and OECD countries, emerging market risks credit risks and market risks.

European Central Bank's financial stability reports' statistical annex contains one section on financial market indicators, and one on financial institutions.

Other example includes: The Bank of Canada and the Nederlandsche Bank construct single aggregate measures of financial stability (albeit not published in their FSRs) which compare favourably in their ability to indicate crises. The Board of Governors of the Federal Reserve System does not publish a financial stability review, but it has an index of financial fragility, which has macroeconomic and microeconomic aspects. At the microeconomic level, financial fragility broadly means that elements on the liability and/or asset side of the balance sheet are highly sensitive to changes in interest rate, income, amortization rate, and other elements that influence the liquidity and

solvency of a balance sheet. In this case, not-unusual fluctuations in those variables create large financial difficulties.

The financial fragility index provides regulators with a means to detect financial fragility independently of the merit of an economic activity, of the profitability of business, of the default rate on loans, of the welfare created or destroyed by an economic activity, of the existence of a bubble or not, of the existence of fraud or not, of the expectation of an economic recession or not, or of the views of the future of economic units. [18]

HOW CENTRAL BANKS PROMOTE FINANCIAL STABILITY

In this section the author will addresses whether central banks have a natural role in ensuring financial stability, and if so, what do a central bank do to safeguard financial stability. **Central banks** are intendant national authorities and the most powerful economic institutions that are helping society to manage its collective financial affairs.

A classical way to look at what central banks are doing is to review their mandates and statures.

As a central bank, the primary objective of the European Central Bank (ECB) is to maintain price stability, but it also has a contributory role in financial stability, as indicated by the Treaty on the Functioning of the European Union. The ECB works to identify, assess and monitor risks to financial stability, because turbulence in the financial system may weaken the ECB's ability to maintain price stability. And since 2014, the ECB also has the power to take macroprudential policy measures aimed at addressing specific stability risks.

Article 127 (2) of the EC Treaty on the Functioning of the European states:

2. The basic tasks to be carried out through the ESCB shall be:

— to define and implement the monetary policy of the Community;

— to conduct foreign-exchange operations consistent with the provisions of Article 111 of this Treaty;

— to hold and manage the official foreign reserves of the Member States;

— to promote the smooth operation of payment systems.

5. The ESCB shall contribute to the smooth conduct of policies pursued by the competent authorities relating to the prudential supervision of credit institutions **and the stability of the financial system.**

The Treaty clearly outlines a contributory role for the ECB in maintaining financial stability given that financial stability is necessary for the credit channel of monetary transmission to function properly. As seen above, this implied mandate is confirmed, but also restricted in scope, by the ECB "contribution" clause in article 127(5) TFEU. However, it is not proposed to introduce a financial stability mandate of equal standing with price stability. [16]

Many researches have underlined that financial stability and price stability are functionally connected. As we saw during the last global financial crisis, financial instability can materially disturb the channels through which monetary policy influences prices. Thus, it can limit the ability of central banks to do their job.

Edward George, who was at the helm of the Bank of England during crises such as the collapse of Barings Bank made this point graphically when he said: "it is inconceivable that the monetary authorities could quietly pursue their stability-oriented monetary policy objectives if the financial system through which policy is carried on (…) were collapsing around their ears". [16]

According to the Bank of England Financial Stability Review (Bank of England, 2008), *"**The Bank of England has two core purposes — monetary stability and financial***

***stability**. The two are connected because serious disruption in the financial system can affect the implementation and effectiveness of monetary policy, while macroeconomic stability helps reduce risks to financial stability. The Bank's responsibility for contributing to the maintenance of the stability of the financial system as a whole derives from its responsibility for setting and implementing monetary policy, its role in respect of payment systems in the United Kingdom and its operational role as banker and supplier of liquidity to the banking system. The Bank aims to bring its expertise in economic analysis and its experience as a participant in financial markets to the assessment and mitigation of risks to the UK financial system including, as necessary, helping to manage and resolve financial crises".*

As Villar A. discusses many central banks have included financial stability in their mandate but not necessarily in the form of a quantitative goal and these authorizes have control over a large array of macroprudential tools. [19] But in some countries, decision-making powers and control over instruments remain diffused across institutions. In such cases, policy coordination implementation tilts towards favouring the central bank's role of" primus inter pares".

The truth is that today it is hard to separate the central bank ability to maintain monetary stability, the ability to maintain financial stability, or both they have been sometimes hard to separate. It is hard to delineate when financial stability gets so important that it affects monetary policy and vice versa. These days financial stability is about much more than just banks Things are not as simple as they used to be. For example, innovations like digital money, global value chains, online shopping and etc. add to the complexity of maintaining price stability.

According to Schembri [13], central banks can promote the stability of the financial system, by deploying a range of policy responses including:

- **keeping the focus of monetary policy on the right objective** – since the last financial he crisis, many central banks has kept its policy interest rate relatively low, by historical standards, to in order to overcome the recession and support economic growth and thereby achieve its primary goal of returning inflation to targeted per cent within a reasonable time frame. This reduction comes from previous successes, which have kept inflation low so allowed the monetary authorities to maintain the interest rates below the level proposed by historical experience [17]. However, we recognize that elevated household and or corporate debt could represent a risk to financial stability. This illustrates that targeting and reducing vulnerabilities by monetary policy tools, affects the entire economy and is thus a very blunt instrument to address financial stability.
- **encouraging prudence on the part of borrowers and lenders and enhancing market discipline through increased transparency.** Most central banks regularly provide communication through their financial stability reports or other periodic publication and analysis and in such manner, they inform lending institutions, households and businesses of their analysis and thereby raised their awareness of high vulnerabilities and financial risks in an effort to encourage them to exercise appropriate caution.
- **adopting macroprudential measures** – these measures primarily include capital buffers Introduced after the global financial crisis of 2007-09. Capital buffers aim to enable banks to absorb shocks and or losses while maintaining the provision of key services to the real economy, while automatic restrictions on distributions prevent the imprudent depletion of capital in times of stress. In the European framework, these buffers include the capital conservation buffer (CCoB), the countercyclical capital buffer (CCyB), buffers for global and other systemically important institutions (G-SIIs

and O-SIIs) and the systemic risk buffer (SyRB). The combination of all these buffers constitutes the combined buffer requirement (CBR).

- **strengthening regulation and supervision of the financial sector** - since the global financial crisis, the regulatory and supervisory framework has been further strengthened. More rigorous global standards have been developed and promote their implementation An example is the implementation of the Basel III regulatory reforms, which require banks to hold more and higher-quality capital and meet new liquidity and leverage requirements. Consequently, many banks that implementation of the Basel III are now in a better position to cope with unexpected downturns in economic activity.

Central banks as lender of last resort

In an acute financial crisis when standard sources of funding dry up, banks and increasingly other financial institutions turn to central banks to replace conventional lenders. Changed realities in financial markets, however, challenge central banks to reconsider the classical notion of LOLR. Although this role of central banks no longer can be taken as given, we agree with the classic Bagehot's doctrine that calls for helping out banks that may be illiquid, but not insolvent. In fact, this approach helped modern central banks to deal with the global financial crisis. By injecting large amounts of liquidity, central banks may have prevented an even deeper economic downturn. During the recent global financial crisis, Fed did allow Lehman Brothers to fail, however, this quickly turned into a demonstration of an opposite nature The Fed's decision with regard to Lehman was widely criticized, and it quickly became clear that central banks were not going to allow another major financial player to collapse.

The question we examine here is if the role of the central bank as a lender of last resort stand in conflict with monetary policy objectives? Financial crises typically go along with deflationary pressure. Therefore, lender of last resort activities tends to support both monetary and financial stability. As Hellwig (2015) argues the scope for lender of last resort activities is limited in in a fixed exchange rate regime or in a banking system whose liabilities are mostly denominated in foreign currency. The lender of last resort activities are generally supportive of macroeconomic stability but they may stand in conflict with the goal of maintaining a fixed currency peg.

FINANCIAL STABILITY AS MACROPRUDENTIAL POLICY OBJECTIVE

Regulation and oversight of financial institutions can reduce risks to individual firms. However, to mitigate systemic risks, many countries have turned to macroprudential polices that aim to ensure the safety of the financial system as a whole.

Policymakers have traditionally focused on reducing risks to individual financial institutions to (also known as macroprudential policies) to ensure that they are safe and able to honor their obligations. But the global financial crisis has exposed that keeping individual financial institutions sound is not enough as this allowed system-wide financial risks to grow unchecked. Since the crisis, many countries adopted a broader approach to safeguard the financial system as a whole are expanding their toolkits to explore a more systemic approach to financial regulation and supervision. This holistic approach is called macroprudential policy. Since the great financial crisis in 2008-09, central banks have started playing greater attention to macro-financial linkages than before and many have adopted a macroprudential orientation of their financial stability policy. They can use macroprudential policy to achieve this goal.

The macroprudential policy of central banks is relatively young and was born out of the financial crisis, but since then has been growing rapidly. While the central banks have

used the term "macroprudential prominently following the global financial crisis, the concept of "macroprudential policies" has been in use before.

The ultimate objective of macroprudential policy is to mitigate excessive systemic financial risks, resulting from external factors and market failures, to smoothen the financial cycle (time dimension) and make the financial system more resilient to shocks and limit contagion effects, and encourage a system-wide perspective in financial regulation to create the right set of incentives for market participants. These macroprudential policies typically operate through adjustments in capital and liquidity requirements and in permissible terms of lending, affecting the cost of intermediation and the availability of credit.

Central banks deploy a large set of prudential tools to improve the resilience of the financial system, which be used for both micro- and macroprudential purposes, depending on whether they are aimed at strengthening the stability of individual institutions or that of the system as a whole. A good example is the reserve requirements, that can be used for both monetary and macroprudential purposes. Central banks' ability to employ macroprudential instruments varies across jurisdictions. Most EU central banks have full control over macroprudential tools such as countercyclical capital buffers and capital requirements, margins and haircuts, sector-specific capital requirements for the banking sector and debt service-to income and loan-to-value ratios. In two cases, the central bank of Brazil and South Africa share the decision-making powers with the banking supervisor or another government body. In several jurisdictions, some instruments are simply unavailable. For instance, dynamic provisioning and sector-specific and countercyclical capital requirements are not available in Chile, Russia, Israel and etc. (BIS, 2017).

In Europe there is common framework for macroprudential policy which consists of a system of rules, practices and processes that direct and control the policy. Central Banks in Eurozone use a number of macroprudential instruments that provide them with greater control in respect of the emergence of systemic risks in the future

The role of the ECB goes beyond than just to identify, assess and communicate risks. The ECB was given some relevant competences after the crisis in 2007-09 that cover both individual banks and the banking system. Macroprudential policy has two goals, first, it aims to make the system more resilient to shocks.

In address its macroprudential measures ECB works together with other European and national authorities. At the European level, the ECB has a strong ally in the European Systemic Risk Board, (ESRB) established in 2010. The ESRB takes a broad view of the financial system and have a broad remit, covering banks, insurers, asset managers, shadow banks, financial market infrastructures and other financial institutions. It monitors and assesses systemic risk in all these areas of the financial system and where appropriate, it issues warnings and recommends action. responsible for the macroprudential oversight of the EU financial system and the prevention and mitigation of systemic risk. Other European authorities, such as the European Banking Authority, European Securities and Markets Authority, and European Insurance and Occupational Pensions Authority, also contribute to the ESBR's work. National authorities play a crucial role in macroprudential policy. Under the EU's legislative concept, macroprudential policy is also a national policy. The European perspective complements the national one. Unlike monetary policy, macroprudential policy can target specific sectors or countries. This in turn allows monetary policy to focus on price stability.

So how does macroprudential policy work in practice?

Macroprudential tools can be structural and cyclical. The first tools focus on the impact large, systemically important institutions have on the rest of the system when they

fail or become distressed. Structural macroprudential objectives motivate regulatory tools such as additional capital requirements for systemically important banks ("SIFI surcharges"), which aim to reduce the probability that a large institution fails, and resolution and recovery planning, which seeks to limit the damage in the event of failure. Other structural tools some countries deploy include limits on loan-to-value ratios (LTVs) or debt service–to–income ratios (DSTIs) for mortgage borrowers are examples of structural tools that have been applied to borrowers. These limits can be macroprudential when they are intended to not only protect an individual borrower from too much debt, but to protect home values in neighborhoods from falling sharply because many borrowers have trouble making their payments at the same time. For example, the Hong Kong Monetary sets the LTV ratios for borrowers based on the value of the property. Bank borrowers for properties with high values could get mortgages with LTV ratios ranging from 40 percent to 60 percent, while they could get mortgages with higher LTV ratios, up to 70 percent, for properties with low values.

The second set of macroprudential tools are cyclical focusing on aimed at increasing resilience in anticipation of an economic downturn to lessen the reduction in the supply of credit once the downturn materializes. The countercyclical capital buffer (CCyB) is an example of a cyclical policy. The CCyB works by requiring banks to increase their capital cushions during an economic expansion when systemic risks are rising, and then release them in an economic downturn to absorb losses. Capital buffers allow banks to continue to support the economy in downturns while also weathering losses. In doing that, the banks can be a source of strength for the economy, helping to absorb rather than amplify the economic shock caused by crisis. It is in banks' collective interest to continue to support viable, productive businesses, rather than seek to defend capital ratios and avoid using buffers by cutting their lending.

The ECB then has the power to top-up some of these measures. And while national authorities are the key players, it also makes sense to involve the ECB. This helps to keep an eye on any cross-border spill-overs and to alleviate any inaction bias that may still exist at national level. A good example of the important role that the ECB plays in macroprudential policies is the methodology it has developed for minimum additional capital to be held by regional systemic relevant banks. The methodology has reduced heterogeneity in the buffer calibration across the euro area.

All in all, since the global financial crisis, both advanced economies and emerging market economies have been using macroprudential measures more frequently, as illustrated in the charts below taken from ECB report on macroprudential policies measures as of October 1, 2020.

Individual structural buffers – Number of euro area banks or euro area countries	
Banks with individual structural buffers (G-SII buffer, O-SII buffer, SRB)	**115**
Banks with G-SII buffer	8
Banks with O-SII buffer (including those with G-SII buffer)	109
Banks with SRB	19
Countries that have activated the CCyB*	2

Individual structural buffers – Ranges	
Combined buffer requirement	**2.50% – 5.50%**
Average combined buffer requirement	3.08%
G-SII buffer	1.00% – 2.00%
O-SII buffer	0.06% – 2.00%
Average O-SII buffer (including G-SII buffer)	0.83%
SRB	1.00% – 2.50%
CCoB	2.50%
CCyB	0.00% – 1.00%

Chart 1. Macroprudential policy measures in the euro area as at 1 October 2020
Source: ECB website measures (https://www.ecb.europa.eu/pub/financial-stability/macroprudential-bulletin)

Notes: "The figures only include information on supervised banks (e.g. excluding O-SII buffer requirements for Cyprus-based investment firms). Small and medium-sized investment firms are exempted from the CCyB and/or the CCoB in Italy, Lithuania, Luxembourg, Malta and Slovakia. For Slovakia, the SRB is applied only to domestic exposures, meaning that the buffer applies in addition to the O-SII or G-SII buffer, whichever is greater. The CBR is calculated in accordance with Article 131 CRD IV but excludes mandatory or voluntary reciprocity of foreign macroprudential measures in accordance with Recommendation ESRB/2015/2. It consists of CET1 capital and is in addition to a minimum requirement of 8% total capital (4.5% CET1 + 1.5% AT1 + 2% T2). Pillar 2 measures are not included. The minimum combined buffer requirement at country level corresponds to a bank not subject to any individual bank-level structural buffer (G-SII, O-SII, SRB). Abbreviations: combined buffer requirement (CBR); global systemically important institution (G-SII); other systemically important institution (O-SII); systemic risk buffer (SRB); countercyclical capital buffer (CCyB); capital conservation buffer (CCoB); Capital Requirements Directive (CRD IV); Common Equity Tier 1 (CET1); Additional Tier 1 (AT1); and Tier 2 (T2). * Reflects only countries that have already activated a positive CCyB.

Capital and liquidity buffers have been designed with a view to allowing banks to withstand stressed situations like the current one. The European banking sector has built up a significant amount of these buffers. The ECB will allow banks to operate temporarily below the level of capital defined by the Pillar 2 Guidance (P2G), the capital conservation buffer (CCB) and the liquidity coverage ratio (LCR). The ECB considers that these temporary measures will be enhanced by the appropriate relaxation of the countercyclical capital buffer (CCyB) by the national macroprudential authorities.

The chart below shows the minimum and maximum CBR, as well as the banks affected by the maximum CBR. The minimum CBR (blue) is usually applicable to all banks in one country, taking into account the CCoB and the CCyB, the maximum CBR (yellow) relates to financial institutions that are required to apply an O-SII buffer, G-SII buffer or SRB, whichever is greater.

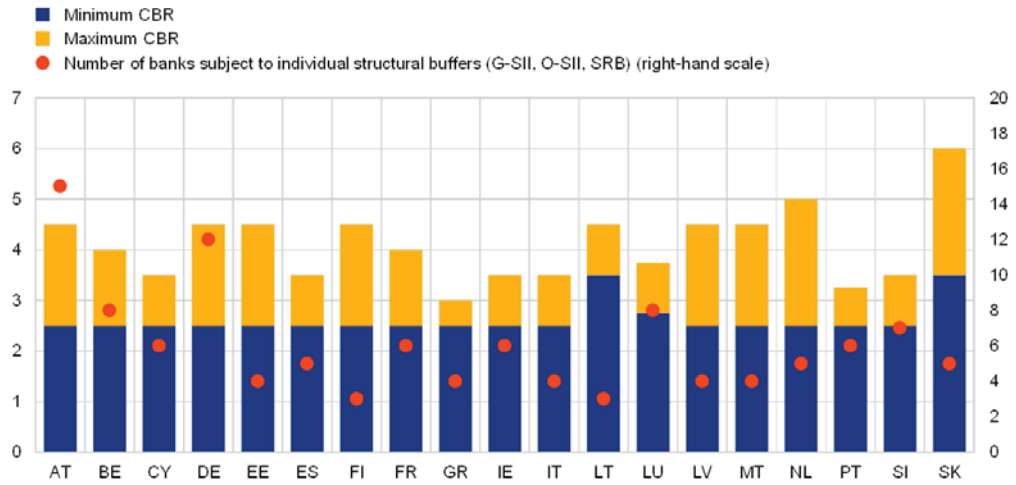

Chart 2. Overview of combined buffer requirements

(left-hand scale: percentage of total risk exposure; right-hand scale: total number; measures apply as of 1 October 2020)

Source: ECB website Macroprudential policy measures (https://www.ecb.europa.eu/pub/financial-stability/macroprudential-bulletin)

Notes: "The figures only include information on supervised banks (e.g. excluding O-SII buffer requirements for Cyprus-based investment firms). In some countries, certain financial institutions are designated as O-SIIs, but no additional buffer requirement applies at this time. Small and medium-sized investment firms are exempted from the CCyB and/or the CCoB in Italy, Lithuania, Luxembourg, Malta and Slovakia. For Slovakia, the SRB is applied only to domestic exposures, meaning that the buffer applies in addition to the O-SII or G-SII buffer, whichever is greater. The CBR is calculated in accordance with Article 131 CRD IV but excludes mandatory or voluntary reciprocity of foreign macroprudential measures in accordance with Recommendation ESRB/2015/2. It consists of CET1 capital and is in addition to a minimum requirement of 8% total capital (4.5% CET1 + 1.5% AT1 + 2% T2). Pillar 2 measures are not included. The minimum combined buffer requirement at country level corresponds to a bank not subject to any individual bank-level structural buffer (G-SII, O-SII, SRB). Abbreviations: combined buffer requirement (CBR); global systemically important institution (G-SII); other systemically important institution (O-SII); systemic risk buffer (SRB); countercyclical capital buffer (CCyB); capital conservation buffer (CCoB); Capital Requirements Directive (CRD IV); Common Equity Tier 1 (CET1); Additional Tier 1 (AT1); and Tier 2 (T2)"

In order to address the impact of the coronavirus (COVID-19) pandemic, the national competent authorities (NCAs) of six euro area countries have decided to revoke the implementation of previously announced Countercyclical capital buffers **CCyBs and to release already activated CCyBs. Currently, two euro area countries report a positive CCyB rate: Luxembourg, 0.25% as of 1 January 2020, which will be increased to 0.5% as of 1 January 2021, and Slovakia, 1% as of 1 August 2020. The NCAs of 12 euro area countries decided to maintain the CCyB rate at 0%.**

Case study: The countercyclical capital buffer (CCyB) in Germany was introduced 2016 and was activated by the Federal Financial Supervisory Authority for the first time on 1 July 2019 and increased to 0.25%. The banks had 12 months to implemented would have completed the process of building up the CCyB by 1 July 2020. This increase was due to an assessment by the German Financial Stability Committee that the long spell of favourable economic activity and low interest rates had given rise to cyclical systemic risks in the German financial system. Some of the underlying risks include: a potential underestimation of credit risk; second, an overestimation of the recoverability of the collateral used in real estate financing as a result of many years of rising real estate prices; and third, interest rate risk. The Bundesbank's analyses indicated that the banking system

should build up more capital in what was then a good macroeconomic setting in order to be more resilient to an unexpected economic downturn.

Due to the coronavirus pandemic, BaFin lowered the CCyB rate to 0% with effect from 1 April 2020 which created scope for maintaining the supply of loans needed by the real economy. In many other countries, too, the CCyB was released or its further build-up was discontinued. The announced buffer rates or buffers that had already been built up ranged from 0.25% (e.g. in Germany) to 2.5% (e.g. in Sweden).

Since the outbreak of COVID-19 pandemic, the European Central Bank has announced a number of measures to ensure that banks can continue to fulfil their role in financing households and corporates experiencing temporary difficulties. Overall, the banks in EU remained strong due to the early implemented macroprudential measures.

For example, in 2020 UK banks remained resilient and had high levels of capital, allowing them to absorb very big losses while continuing to lend to households and businesses. The Financial Policy Commission lowered the UK countercyclical capital buffer rate to 0% in March, meaning that banks have more capacity to lend.

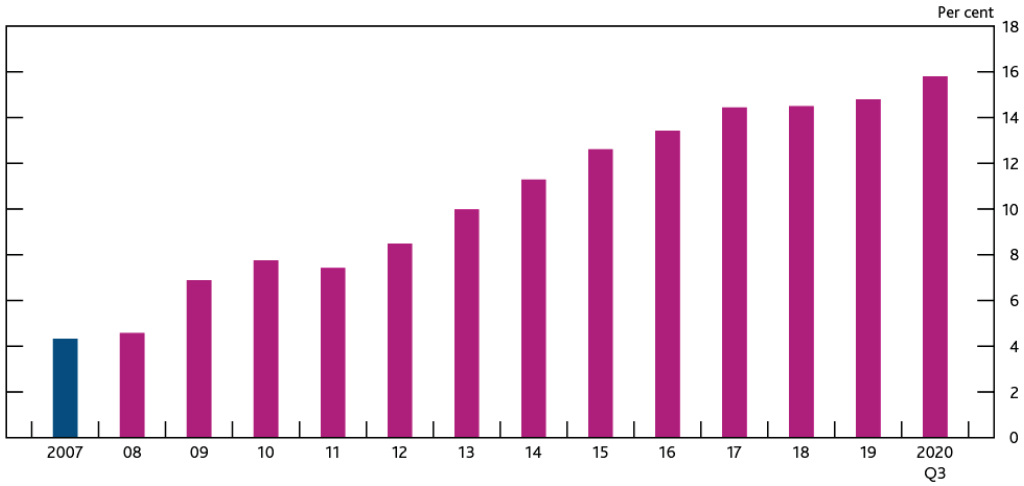

Chart 3. Aggregate CET1 capital ratio of major UK banks

Sources: Bank of England website.

(a) The CET1 capital ratio is defined as CET1 capital expressed as a percentage of risk-weighted assets. Major UK banks are Barclays, HSBC, Lloyds Banking Group, Nationwide, NatWest Group, Santander UK and Standard Chartered. From 2011, data are CET1 capital ratios as reported by banks. Prior to 2011, data are Bank estimates of banks' CET1 capital ratios.; (b) Capital figures are year-end, except 2020 Q3.

From a more general point of view, a flexible macroprudential framework is needed; one that allows to quickly respond to market developments. This will be all the more important in the future as macroprudential authorities should be ready to tackle new risks that may arise from the shift towards market-based finance. Key to this will be looking beyond the banking sector; keeping an eye on banks is no longer enough.

CENTRAL BANKS SUPERVISION ROLE IN PROMOTING FINANCIAL STABILITY

In this section we will address which supervisory structures are best suited to managing the risks arising from the financial sector. We will look at the importance of effective coordination across supervisors and central banks and will examine the integrated European Central Bank model and what benefits this set-up has brought.

The most direct way to affect financial stability is through prudential supervision. In fact, central banks are frequently directly involved in prudential supervision. Since November 2014, this has also been true for the European Central Bank (ECB), which has taken over broad responsibilities in banking supervision in the context of the Single Supervisory Mechanism (SSM). This setup was chosen because it could be implemented quickly under the existing legal constraints and because the ECB at the time was one of the few institutions capable of acting. However, it was recognized early on that this setup was not necessarily optimal, leading to a debate whether the combination of monetary policy and banking supervision within one institution is really desirable or whether a separation would be preferable in the longer term. In fact, this debate is not new. Nevertheless, it is far from being resolved, which is also reflected in the widely varying degree to which central banks are involved in banking supervision in different countries.

In the literature, a number of papers have analyzed the relationship between supervisory structure and macroeconomic outcomes, in particular inflation and financial stability. Overall, the empirical evidence is mixed and show that inflation rates are higher in countries in which the central bank is responsible for monetary policy and banking supervision. Supervising individual banks helps boost resilience. ECB Banking Supervision directly supervises the 118 biggest banking groups in the euro area – with over €20 trillion euros in total assets. Clearly, these banks – some in their own right, some as part of a group – are systemically relevant. Given their huge role in financing the euro area economy, their resilience is key to financial stability. The first step is for the supervisor to obtain a holistic view of each of these banks, not only assessing capital and liquidity risks, but also their internal controls and governance. And then the supervisor needs to act and push for improvements in all these elements if needed. But it is not enough to look at each bank in isolation. To identify and understand new risks and vulnerabilities, the second step is to take a broader view. As supervisors we have to stay closely attuned to the macroeconomic environment in which banks operate. European banking supervision has helped to maintain financial stability. It has done so by making banks safer and sounder. Euro area banks now hold more capital than ever before: their fully loaded CET1 ratio has increased by about 2.5 percentage points since 2014. Back then, it stood at 11.2%, now it stands at 13.8%. There is no doubt that banks are more resilient today than they were in the past; they are better able to withstand financial shocks and economic downturns. But, of course, capital is not the full story. Liquidity is also key, as a liquidity crisis in one bank can turn into a risk to the entire system.

Another key ingredient that are central to a supervisor's contribution to financial stability are the independence of the supervisors as they must be able to take their own decisions. They must be free from pressure from banks or other stakeholders – and they must be free from political trends. But Independent institutions need to be accountable. The ECB as a banking supervisor is no exception.

In the U.S., the Financial Stability Oversight Council (FSOC) was created in 2010 by the Dodd- Frank Wall Street Reform and Consumer Protection Act. The FSOC is led by the Secretary of the Treasury, and its members include the leaders of the financial regulatory agencies, including the Federal Reserve, Federal Deposit Insurance Corporation, Securities and Exchange Commission, Commodity Futures Trading Commission, and others. It is responsible for "identifying risks and responding to emerging threats to financial stability."

NATIONAL BANK OF MOLDOVA AND FINANCIAL STABILITY ISSUES

In this section the author will mainly address the use of monetary policy by the central bank in Moldova and its influence on the banking sector, managing risks and overall economic development.

The implementation of monetary policy in the Republic of Moldova is the task of the National Bank of Moldova. The subject Bank is a relatively young bank which was set up in 1991 as an autonomous public legal entity that has the executive rights in issuing money in the country, and is responsible for the execution of monetary and foreign exchange policies in the country, maintaining the stability of the currency, regulating payments abroad, and controlling the financial and banking system in the country.

In 1995 two important laws were adopted The Law of the National Bank of Moldova and the Law on Financial Institutions, as experts view these law as one of the most progressive laws on central banks and financial institutions in the CIS region. The subject Laws stipulate the independence of the NBM from the Parliament and also from the bodies of executive power which is very important for the formulation and implementation of an independent monetary, credit and foreign exchange policies. The highest management authority of the NBM is the Council of Administration and it has power to establish the monetary policy its main parameters and instruments for implementation. NBM is responsible both for monetary policy, and for the prudential regulation and supervision of the banking sector. There are additional regulatory bodies that are entrusted with the supervision of financial markets. However, given the relatively low importance and volume of operations on these markets, we can say that the Central Bank is the main supervisor of the financial sector.

Managing and executing the monetary policy is essential, unique and most important function of the National Bank of Moldova. The role of the Central banks varies from country to country in terms of its goals, objectives and principles of operation. In developed countries, where a developed capital market exists, banks are less dependent to the central bank, in terms of providing funds, on the other hand, in developing countries, as is the Republic of Moldova, banks are more dependent from the central bank, which has more dominant role in the conducting of the monetary policy.

In exercising its functions, the National Bank of Moldova uses a set of economic instruments and policies including 1) establishment of minimum required reserves, 2) refinancing rate which plays an important role in the demand for NBM's credits and as such it influences the reserves money and the money supply. This rate is largely influenced by the volume of credit auctions which drives the destitution of the NBM's credits among commercial banks. Recently the NBM started to use other instruments like the Lombard credit, REPO and operations with state securities, 3) financing of the state budget deficit that results into an increase of reserve money and an increase of money supply, so this is an inflationary factor, 4) state securities – open market operations performed by the NBM can take any form of securities purchase or selling or conclusion of state securities selling and repurchase agreements. Compared to the reserve's money, the open market operations are performed on a voluntary participation and as often as can, and 5) foreign exchange intervention.

The two monetary tools – required reserves and the refinancing rate show the best results in developing countries where the financial markets are not yet developed and where there is a high concentration of the banking sector. Yet, the central banks can face the dilemma to decrease the required reserve or to carry out credit emissions that could cause an inflation rise. In terms of the refinancing rate, if the Central Banks policy becomes more expansionary via the refining rate reduction this will lead to an increase of

the liquidity held by banks and of the liquidity available on the interbank market. Banks can increase the supply of credit to lower borrowing rates or providing liquidity on the interbank market at a lower rate which will lead will stimulate overall demand for goods and investment and will influence inflationary pressure. In this way NBM can achieve its aim through 5% inflation targeting.

Using the above-mentioned tools, the National Bank of Moldova throughout the past 15 years has helped Moldova to navigate the shocks of the international monetary system and now its effort is to bring the country into the euro area, as part of the Euro system, Since the last banking crisis in 2014-2015, political instability and government challenges, the National Bank of Moldova has shown resilience and adaptability.

In 1993 Moldova introduced its national currency - the Moldovan Leu and the currency has been relatively stable since 2016-17, after depreciating by 34% in 2014-2015. The maintaining of the price stability from the Central Bank has proved to be the correct and the best choice, especially for countries that are suffering from hyper-inflationary tensions and often loss of money value.

The main objective of the monetary policy of the National Bank of Moldova is the maintaining of price stability, which implies a reduction of the minimum level of inflation in the long run and ensuring stability of the financial system. According to the medium-term policy strategy of the NBM in order to ensure and maintain price stability over the medium term, the National Bank's target is to keep inflation at the level of 5.0 percent annually with a possible deviation of ± 1.5 percentage points, considered to be optimal for growth and development of Moldova's economy over the medium-term. The last quarter of 2019, the annual inflation rate continued to trend upward since the beginning of 2019, increasing from 6.3% in September 2019 to 7.5% in December 2019. This change was largely due to some upward dynamics of food prices due to less favorable weather conditions in the summer of 2019 for certain crops and a turnaround in regulated prices—as the effect of previous tariff cuts dissipated—and by the impact of robust aggregate demand on core inflation. Public debt declined and remains low, below 30 percent of GDP. Despite heightened political uncertainty, the leu remained relatively stable, and foreign exchange reserves remained adequate.

With regards to the financial sector, currently the Moldovan banking system was comprised of 11 commercial banks, the central banks and **nonbank financial institutions and markets are still small and underdeveloped.** The insurance sector is small at 3.5 percent of total financial sector assets and is growing only in line with GDP. Microfinance institutions and some small deposit-taking credit associations – regulated by the NCFM – are increasing in number but their reach and size is not growing IMF (2016).

During 2014 and early 2015, the Moldovan banking system was disrupted by a series of bank fraud of historic size, which evolved into a severe financial crisis in which the Central Bank's inaction came under scrutiny. In 2014, $1 billion disappeared from three Moldovan banks (Banca de Economii S.A. – BEM, JSCB Banca Sociala– BS and JSCB Unibank – UB), that accounted for a 25% of the country's banking sector and these bans remained without license of activity, and the National Bank of Moldova (NBM) established regime of special surveillance over 3 other banks – JSCB Moldova Agroindbank, JSCB Moldindconbank and JSCB Victoriabank. The Liquidation of the three banks, a significant increase of the base rate, and increasing reserve requirements had great impact on the Republic of Moldova economy and private sector. The BM tightened aggressively monetary policy and in less than a year, the NBM increased the monetary policy rate in several stages, from 3.5 percent to 19.5 percent in lei and the reserve

requirements from 14 percent to 35 percent. The private sector had to bear this cost of crisis very obvious, faced with high credit rates and limited credit availability.

Some analysts blamed the Central Bank for the failure of the three financial institutions and the financial losses resulting from their default. Their arguments are that Central Bank would be morally authorized to act immediately after at least one prudential indicator for the banking sector has risen above (or fallen below) its maximum (or minimum) admissible value. However, the Central Bank defended itself by stating that is followed existing prudential rules and regulation very closely and that it undertook all possible efforts to minimize the losses to the financial sector as a whole.

After the 2014-15 banking crisis, macroeconomic stabilization in Moldova has been supported by an IMF programme as in November 2016, IMF approved a US$ 179 million three-year arrangement for Moldova focusing on stabilizing the banking sector, restoring shareholding transparency and corporate governance in all banks, promoting key legislative reforms such as Basel-III regulation, bank recovery and resolution legislation, but also strengthening the deposit guarantee fund and financial market infrastructure.

In 2018 came into effect a Law on banks' activity, which modernized the regulation and supervision standards in the banking sector. The law provided improvements to the corporate governance framework of the banks and their obligation to hold adequate share capital in relation to the assumed risks. The law will contribute to the harmonisation process of the national banking legislation with international principles and standards. In July 2018, the new Basel III regulations came into force (based on the European CRD IV / CRR framework). The new regulations set the size of capital buffers, which if necessary, will diminish the impact of systemic crises on banks' capital.

In 2018, with the banking supervision priorities and commitments assumed towards the development partners in strengthening the transparency of the shareholders' structure for the banks, significant changes, related to the acquisition of shares in the capital of certain banks by several reputable international groups, were made in 2018. As a result, more than 70% of bank assets are being managed by international groups with a sound reputation.

The Moldovan National Bank requires banking institutions to submit monthly reports containing financial and statistical data required for the construction of a number of prudential indicators that the authority then follows in order to assess the financial health of the banking sector. Aside from the general data that it collects, the Central Bank also requires banks to nominally identify entities towards which the bank has large exposures, as well as the ownership structure of the bank. However, off-shore entities are allowed to own shares in banks and the Central Bank has little means to monitor and identify the final beneficiaries of companies registered in off-shore locations. When the Central Bank, as a result of its supervisory activities, detects irregularities in the operations of a financial institution, the literature has documented a number of general intervention options available to it. These general intervention methods are outlined in Online Annex 1 which also provides additional bibliographic information.

In theory, the Central Bank would be morally authorized to act immediately after at least one prudential indicator has risen above (or fallen below) its maximum (or minimum) admissible value. In the case of the Moldovan Central Bank, its failure to swiftly intervene to block fraudulent operations, to take over control and, finally, to bail-out the affected institutions came under scrutiny. Some analysts blamed the Central Bank for the failure of the three financial institutions and the financial losses resulting from their default. However, the Central Bank defended itself by stating that is followed existing prudential rules and regulation very closely and that it undertook all possible efforts to minimize the

losses to the financial sector as a whole. In this paper, we investigate whether this is indeed the case, and whether through its postponement of intervention the Central Bank achieved its stated objective of stability and minimization of financial losses

In addition, much needed are reforms of the financial sector to enforce shareholder transparency, enhance access to finance, mitigate systemic risks and bring in international investments.

The recent global outbreak of the coronavirus disease (COVID-19) has caused significant disruptions to Moldova's economy. Moldova's economic outlook has deteriorated sharply due to the COVID-19 pandemic. Real GDP has fallen and public finances have been under significant pressure from declining tax revenues and emergency health and social spending. These developments coupled with lower remittances inflows, and spillovers from global financial channels have created urgent balance of payments needs. The full impact of the crisis remains highly uncertain. In April 2020, IMF approved a US$235 Million in Emergency Assistance to Moldova to address the pandemic and funds are make available to the authorities to meet the urgent balance of payment needs stemming from the COVID-19 pandemic, help catalyze developmental partner support, and address imminent health system needs IMF (2020).

Despite successful stabilization efforts and significant progress made on banking sector supervision, weak oversight of the non-bank financial sector, gaps in Moldova's AML/CFT framework, and lack of progress on asset recovery are recurring sources of concern.

CONCLUSIONS

This paper draws on the recent research and international experience to assess the roles of central banks may play with respect to fostering financial stability. The above discussion suggests that monetary policy should support macroprudential policy conducted by central banks in preventing the build-up of asset and credit booms. The use of macroprudential tools to mitigate financial stability risks appears to be an additional tool for central banks. However, the practice shows that there can be overlap between the micro- and macroprudential tools, but the timing and rationale for the application of a particular policy instrument may differ depending on the objective. The available central banks financial stability reviews suggest that macroprudential tools can increase the resilience of the financial system through both the buildup of buffers that absorb shocks and a reduction in structural vulnerabilities.

The author of this paper believes that coordinating macroprudential measures with monetary policy is particularly important. At the same time, coordination cannot go too far because price stability, the main objective of monetary policy, is not within the remit of macroprudential frameworks. So, finding the right balance between the use of monetary and macroprudential mechanism can help central banks deal with more ambiguous goals,

As more responsibilities are allocated to the central bank, the incentives for political capture and misuse by governments increase. Overburdening monetary policy may eventually diminish and compromise the independence and credibility of a central bank, thereby reducing its effectiveness in maintaining price stability and contributing to crisis management.' (Orphanides, 2013).

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