

**CRITICAL LITERATURE REVIEW OF
MACROPRUDENTIAL POLICY AND ITS IMPACTS ON
FINANCIAL STABILITY**

**Dr/ Walaa Wageh Diab
Lecturer of Economics
Faculty of Commerce
Banha University**

**Dr/ Nanis Fekry Mohamed
Lecturer of Economics
Faculty of Commerce
Banha University**

Abstract

This paper provides a critical summary of the main findings of recent literature reviews and empirical research carried out to evaluate the effectiveness of the applied policies that used macroprudential tools to target financial stability or have a vital effect on it. Since the main purpose here is to give recommendations regarding the effective use of macroprudential policy to foster economic growth and ensure financial stability. Accordingly, this research starts with the theoretical perspectives of macroprudential policy and financial stability, then it focuses on the goal for which macroprudential policies are designed, which is making financial crises less likely. Next, it turns to the differentiation of macroprudential policies from monetary policy. After that, the paper provides an analysis of the role and scope of macroprudential policy in promoting financial stability in practice, by exploring recent empirical literature on macroprudential policy versus monetary policy. It also discusses the causal nexus between price and financial stability, and the complementary nature of macroprudential and monetary policies in addressing aggregate risk in the financial system. Finally, it provides empirical evidence of the macroprudential policy's effectiveness in attaining financial stability and its impact on economic growth. One of the most important conclusions of the paper is that the Macroprudential policy, monetary and micro-prudential policies reinforce each other and can be seen as complementary policies. Macroprudential tools have proven effective in dampening booms and accumulating buffers that limit the impact of busts. However, there are some caveats to this positive assessment when such policies are used excessively, they cause distortions. however, they can be avoided through careful planning and international cooperation. But "One size does not fit all", So the design of the macroprudential policy framework for any country should consider its local characteristic

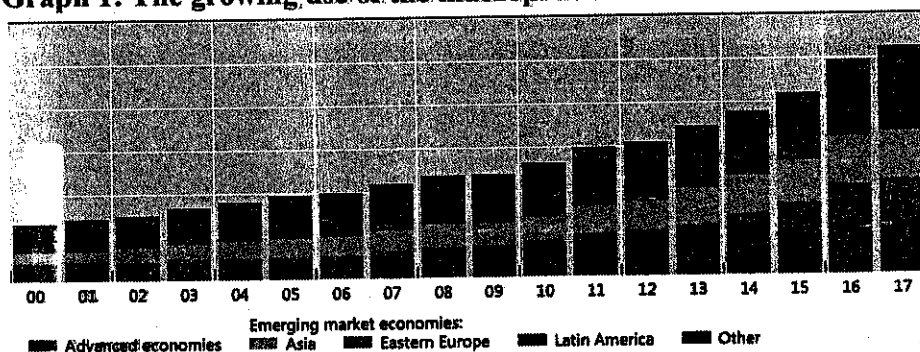
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I. Introduction

Financial stability has become increasingly important in economic policymaking in recent decades. While Macroeconomics as a separate branch of economics emerged after the great depression of 1929, Global Financial Crisis (GFC) of 2008-2009 pushed the macroprudential policy to be reemerged. A quick internet search about macroprudential policy on google scholar reveals about 17,600 hits since January 2008. By contrast, from 2000 until the end of 2007, there were only about 1,950 hits.¹ The growing use of macroprudential instruments was very obvious as illustrated by Cerutti in 2017, where the sample included macroprudential tools used in 59 economies (they used 27 advanced countries and applied also on 32 emerging market economies), and this result can be clarified by Graph 1.

Graph 1: The growing use of the macroprudential instruments



Source: Cerutti et al (2017b)

While it was well-known that before GFC, the mainstreamed global approach relied on "deregulation", main efforts focused on monetary policy playing a prominent role, with a particular focus on price stability. GFC provided a stark reminder of the dangers and costs of systemic financial crises and dramatically raised the awareness among academics and policymakers of the critical importance of studying the evolving risks to financial stability which may affect the economy as a whole. GFC generated a profound change and a new perspective for optimal policy coordination and cooperation between monetary, fiscal and prudential policies focusing on a revolutionized macroprudential perspective aimed at achieving financial stability. Moreover, it led also to the birth of many new

¹ Anyone can use google scholar filter to get those statistics

instruments². As a result, public authorities are increasingly relying on macroprudential regulations to reduce the danger of such crises occurring.

To reduce macro-financial externalities such as pecuniary externalities connected with real exchange rates or aggregate demand externalities associated with leverage or liquidity, macroprudential policy measures were thought required. Yet, the trade-offs between price stability and financial stability became clearer. The mere use of short-term interest rates as a monetary policy instrument was not the best strategy to cope with such trade-offs. Additionally, short-term interest rates have shown to be too blunt for certain financial stability reasons. Central banks in both advanced and developing nations deployed a variety of macroprudential instruments and strategies in this respect.

Despite the fact that these policies had been in place for many years prior to the GFC to avoid the accumulation of financial vulnerabilities and increase the financial system's resilience to various types of shocks, particularly in emerging market countries, they were not effective according to the study of Cerutti. Its usage, however, has increased since the GFC, with both developing countries and mature economies increasing their use (Akinci & Rumsey, 2018). As a result, the conventional (micro) emphasis on the soundness of individual financial institutions has been combined with a slew of new macroprudential measures aimed at mitigating systemic risk.

The most important question after the GFC can be seen is how can the macroprudential policy be effective. How may it interact with monetary policy? and how do they both affect financial stability? Reviewing the literature, the main shortage was the focus of recent institutional research on keeping the financial risk low while supporting economic growth. This is because monetary policy affects bank risk-taking and may induce more risk around financial intermediaries.

The main hypothesis here is “**Macroprudential policy has strong positive effects on achieving the financial stability goal**”. Therefore, this paper aims to illustrate and discuss the conceptual framework of macroprudential and financial stability; the theoretical perspectives of macroprudential policy vs. monetary policy including definition, tools, and instruments; then followed by a review of implementations of the macroprudential policy after the GFC. After that, it investigates the effectiveness of the macroprudential policy in practice. And finally, the paper illustrates the conclusions and sets the recommendations for policymakers.

² For more details see Freixas, Laeven, & Peydro, 2015; Kashyap & Siegart, 2019; Stein, 2012; Svensson, 2017.

II. Macroprudential and financial stability: A Conceptual Framework

Before the financial crisis of 2008, macroprudential policies had never been fully developed. The phrase was first used in the 1979 Cook Committee meeting minutes. The policy's "macro" prefix relates to two things: first, the fact that it takes an all-encompassing approach to the financial system, and second, the fact that it aims to control the financial cycle to influence the economic cycle. While the word "prudent" refers to the need to undertake preventive actions. It will first try to reduce the buildup of systemic risk or its possible realization, and then it will create buffers (additions to banks' capital needs) that can operate as a buffer against the impact of systemic risk.

Macroprudential policy is defined as the use of prudential measures to limit systemic risk (Crockett 2000, FSB/IMF/BIS 2011, IMF 2013). The idea of systemic risk is central to this definition, and it refers to the risk of widespread disruption in the delivery of financial services caused by a failure of all or parts of the financial system, which can have significant negative repercussions on the actual economy as used by IMF, BIS, and FSB 2009. Systemic risk is widely recognized by two dimensions: vulnerabilities related to the accumulation of risks over time, in other words, time dimension, and vulnerabilities related to interconnectedness and the associated distribution of risk within the financial system at any given point in time, which is known as cross-sectional or "structural" dimension). In addressing these vulnerabilities, the macroprudential policy may be considered complementary to micro-prudential policy, which focuses on the safety and soundness of particular institutions (CGFS, 2010). Macroprudential policies attempt to lessen the frequency and severity of financial crises by minimizing systemic risks.

There are numerous definitions of financial stability including the one found on the website of the world bank. the common focal point of the definitions is that the financial system fails to function (in crises). Therefore, A stable financial system allows for more efficient resource allocation, the analysis and management of financial risks, the maintenance of employment levels close to the natural rate of the economy, and the prevention of relative price fluctuations in real or financial assets that impact monetary stability or employment levels. and dissipating endogenous or unexpected financial imbalances. Any financial system can maintain stability whenever it succeeds in absorbing the shocks primarily via self-corrective mechanisms, preventing adverse events from having a disruptive effect on the real economy or other financial systems. there is no doubt that Financial stability is critical for economic growth since the financial system facilitates the majority of transactions in the real economy, When banks are hesitant to finance

profitable initiatives, asset prices wander greatly from their underlying values, and payments may not arrive on time, the problem becomes more apparent. Significant instability can result in bank runs, hyperinflation, or a stock market catastrophe, all of which can undermine trust in the financial and economic systems. Ex-ante risk-taking incentives of individual agents, institutions, or financial markets can undermine financial stability, as can ex-post tightening of borrowing limitations, increasing asset price, exchange rate externalities, and leverage cycles.

As a result, financial stability might be defined more generally as "a situation in which the financial system can smoothly promote real economic activities smoothly and is capable of unravelling financial imbalances arising from shocks." The factors that can affect financial stability include political instability, Global influences or crisis, liquidity pressures, operational problems, payment system threats, contagion, and changes in the macro environment.

As previously stated, macroprudential regulations seek to address the "time dimension" and the "cross-sectional dimension" of systemic risk. Contagion (interconnectedness) and shared exposures contribute to systemic risk. - The financial system's procyclical tendency and prudential rules Mismatches in leverage and maturity - Regulatory arbitrage as a result of the restricted regulatory perimeter - Complicated Goods - Institutions - Markets - financial innovation - opaque and poorly understood products - Over the Counter (OTC) Derivatives - Inadequate infrastructure.

The important challenge in the temporal dimension is focusing on how to implement various types of buffers that work countercyclically, so limiting the accumulation of systemic risk and eventually moderating or dampening financial system procyclicality. During economic upturns or booms, the financial sector develops and tends to overexpose to collective risk through abundant lending, fast rises in asset prices, leverage, and maturity mismatches. When the financial cycle reverses and the system has not established sufficient buffers in good times, the downturn can cause widespread financial distress and be exacerbated by significant deleveraging, decreasing the supply of credit and vital financial services to the economy.

The primary goal of the cross-sectional dimension, on the other hand, is to decrease systemic risk concentrations that may arise from comparable exposures across financial institutions (from assets, liabilities, and dependence on shared services) or from their close balance-sheet connections (e.g., counterparty risk). A strong focus is made here on minimizing spillovers from failing institutions and ensuring that individual institution safeguards are proportionate to their contribution to systemic risk.

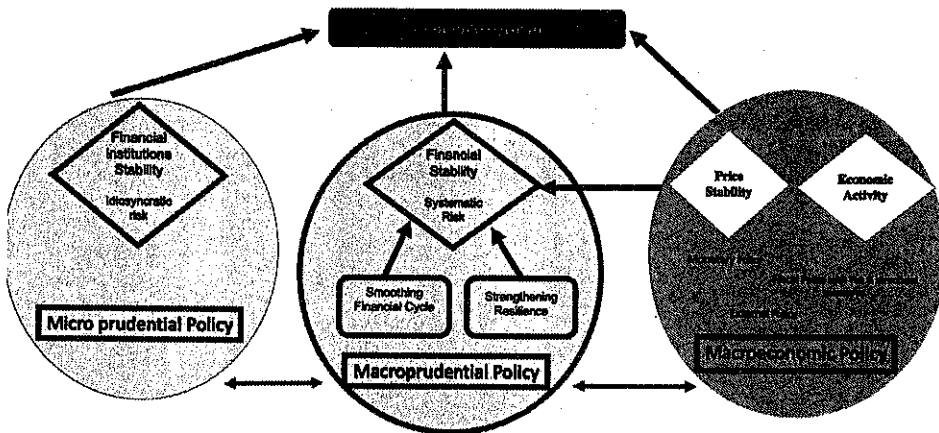
The traditional Classical argument for a financial system's susceptibility to a financial crisis, first explored by Irving Fisher (1933), contends that fragility is intimately tied to macroeconomic cycles, emphasizing, in particular, debt liquidation. A slump caused by over-indebtedness in the real economy necessitates the liquidation of this debt at some point in order to restore the economy to balance. Debt liquidation would cause a reduction in monetary liabilities and a slowing of velocity. These changes have various economic consequences, including decreases in pricing, output, and market confidence, as well as rises in bankruptcies and unemployment. According to Fisher, financial fragility stems primarily from deterioration in economic fundamentals. Monetarists. According to Friedman (1963), financial instability is unlikely to originate or become severe in the absence of a disturbance in the money supply. So Monetary policy is believed to be the root source of financial instability, as for many years, the two most common theories have been "cyclical" and "monetarist." Minsky and Kindleberger (1977) (1978).

According to the Basel III regulatory framework, the core macroprudential policy objectives are as follows: to reduce the likelihood and economic costs of potential systemic financial crises, to strengthen the overall financial system's resilience, and to smooth the credit cycle (i.e., fluctuations in asset prices, credit, and leverage). Climate change and climate-related hazards have recently been identified as such, posing a danger to financial stability through physical and transitional risks (see Carney (2015)). As a result, green macroprudential instruments were developed to protect the financial system while also channelling investments to green industries (D'Orazio & Popoyan 2019). In other words, macroprudential policy aims to manage crises.

III. Theoretical perspectives of Macroprudential policy vs. Monetary Policy: (Definition, Tools, and instruments)

In this part of the paper, we try to answer questions like: What can macroprudential policy do for monetary policy? How do monetary and macroprudential policies interact? A macroprudential policy can be used to address the unintended side effects of monetary policy; moreover, it enhances the resilience of the financial system to adverse shocks to help monetary policy not be forced to drive down interest rates so much that they go beyond the zero lower bounds. Both policies have considerable spillover effects because they are transmitted to the broader economy via the financial system, particularly through the banking system. In theory, there is no need for explicit coordination if both policies perform flawlessly. Nonetheless, in the context of macroprudential policy restrictions, there is a conceptual basis for monetary policy to play a prudential role, but this may be difficult in reality. No matter how different policy mandates are structured, addressing financial stability and systemic risk is a common responsibility- Positioning the Macroprudential policy between other policies is provided in graph 2.

Graph 2: Positioning the Macroprudential policy for financial stability



Source: by authors

The dichotomy between monetary policy and macroprudential policy can be concluded as follows: some argue that the first is limited to the determination of capital requirements for banks, and others see that the latter is limited to the setting of short-term tools thus, this paper tries to conclude basic information and differentiation between them to give an integrated vision as illustrated in table 1.

Table 1 Macroprudential policy vs. Monetary Policy in A Nutshell

	Macroprudential policy	Monetary Policy
Goals	<ol style="list-style-type: none"> 1. Preserve financial stability. 2. Prevent the excessive build-up of risk 3. limit contagion effects (cross-section dimension) 4. Create the right set of incentives (structural dimension) <p>Often described as:</p> <ul style="list-style-type: none"> ▪ Structural policy ▪ Cyclical policy 	<ol style="list-style-type: none"> 1. Manage inflation, and Maintain Price stability 2. Stability of exchange rates 3. Reduce unemployment 4. Economic Growth 5. Equilibrium in the Balance of Payments 6. Promote moderate long-term interest rates. <p>Often described as:</p> <p>Counter-cyclical policy</p>
Intermediate objectives	<p>(1) increase the resilience of the financial system to aggregate shocks by building and releasing buffers that help maintain the effective functioning of the financial system.</p> <p>(2) contain the build-up of systemic vulnerabilities over time by reducing procyclical feedback between asset prices and credit and containing unsustainable increases in leverage, debt stocks, and volatile funding.</p> <p>(3) control structural vulnerabilities within the financial system that arise through interlinkages, common exposures, and the critical role of individual intermediaries in key markets that can render individual institutions "too-big-to-fail".</p>	<ol style="list-style-type: none"> 1. Interest rate adjustment, 2. Reserve requirements 3. The discount rate 4. Open market operations
Instruments/ Tools	<ol style="list-style-type: none"> (1) capital-based tools (both broad-based and sectoral) (2) asset-side-tools/ Household sector loan restrictions (3) liquidity-related tools. Since the crisis, increasing use has been made across many of them 	<ul style="list-style-type: none"> - Interest Rates - Purchase or Sale of Government Securities - Changing the Amount of Cash Circulating in the Economy

	Macroprudential policy	Monetary Policy
	<ul style="list-style-type: none"> - Countercyclical capital buffers - Through-the-cycle valuation of margins or haircuts for repos - Levy on non-core liabilities - countercyclical variations in margins or haircuts on collateral used in the securitized funding markets Time - varying systemic liquidity surcharges. 	
Measures and Indicators	<ul style="list-style-type: none"> ▪ In the time dimension <ol style="list-style-type: none"> 1. Macro aggregates and forecasts (domestic, external, and sectoral imbalances) 2. Credit-to-GDP gap measures 3. Ratios of non-core to core liabilities to indicate liquidity risks) 4. Asset prices ▪ In the cross-sectional dimension <ol style="list-style-type: none"> 1. total assets 2. equities 3. credit 4. deposits, and other forms of intermediation in percent of total market size or GDP 	<ol style="list-style-type: none"> 1. Interest rates 2. The foreign exchange rate 3. Growth rate of the money supply
Trade-off	<ul style="list-style-type: none"> ▪ Between systemic risk and economic growth. ▪ Limiting the build-up of systemic risk along with positive effects on long-term GDP, however, also reduce the length of the expansions by preventing credit from flowing to productive economic activities. 	<ul style="list-style-type: none"> ▪ Between the intermediation capacity of banks and unintended consequences linked to bank vulnerabilities. ▪ Liquidity operations increase banks' interconnectedness, while negative rates increase risk taking behavior of banks

Overall, the above-mentioned trade-offs confirm that Monetary and macroprudential policies entail significant spillovers while they both affect financial markets and economic activity. In defining the short-term impact of macroprudential policy, it is important to investigate the degree of monetary policy

accommodation. At the same time, the soundness of the banking system influences monetary policy transmission and the natural real interest rate level. When macroprudential policy is accommodating, the impact of monetary policy easing on bank lending and risk-taking is greater. While planning policy initiatives, policymakers must be conscious of these tradeoffs. The theoretical debate about the two policies and the interaction between them is concluded as possible as shown in Table 2 below which reviews the recent theoretical studies that focus on the interaction between both macroprudential and monetary policy

Table 2 Interaction of Monetary and Macroprudential Policies: Selected Theoretical Studies

Study	Main Question	Main conclusion
1. Park, Y. C. (2011)	In the context of East Asian economies, this paper analyzes the role and scope of macroprudential policy in avoiding financial instability.	This study argues that macroprudential policy, like monetary policy, operates through the bank credit channel, and its effectiveness is uncertain. In terms of the transmission mechanism, the two policies are interchangeable.
2. Bianchi <i>et al.</i> (2012)	What influence does the combination of financial innovation, credit frictions, and imperfect information have on the design and efficacy of macroprudential policy?	Financial innovation has the potential to avoid the collateral restriction. However, under the new financial regimes, imprecise information may affect debt decisions and asset values. To implement a macroprudential policy that limits the amplitude of the boom-bust cycle, authorities must gather more information than private agents.
3. Borio, C. & Zhu, H. (2012)	How do capital regulation, the business cycle, and the transmission mechanism interact?	So far, little attention has been devoted to the relationship between monetary policy and economic actors' perception and price of risk, called the "risk-taking channel" of monetary policy.
4. Agénor <i>et al.</i> (2013)	What roles do bank capital regulations and monetary policy play in reducing procyclicality and supporting macroeconomic and financial stability?	For fostering general economic stability, a combination of a credit-augmented interest rate regulation and a Basel III-type countercyclical capital regulatory rule may be desirable.

Study	Main Question	Main conclusion
5. Angeloni, I. & Faia, E. (2013)	In a macroeconomy with a fragile banking system, how do bank regulation and monetary policy interact?	Capital requirements based on risk increase the cycle and diminish wellbeing. The ideal combination is anticyclical capital ratios (Basel III) and monetary policy responsiveness to asset prices or bank leverage.
6. De Paoli, B. & Paustian, M. (2013)	How should monetary and macroprudential policy be coordinated to stabilize the macroeconomy?	When the economy is impacted by cost-push shocks, policymakers must work together and commit. When monetary and macroprudential instruments are established separately and at the discretion of the authorities, the economy needs one of the authorities to serve as a leader, since this might ease coordination issues. Choosing monetary and macroprudential instruments that act in the same way might worsen such issues.
7. Angelini <i>et al.</i> (2014)	What are the consequences of introducing a time-varying capital requirement, on macroeconomic performance and stability, and what is its interaction with monetary policy?	In the event of supply shocks, time-varying capital needs serve to stabilize the loan-to-output ratio's variation. Excessive volatility in policy instruments may result from a lack of coordination between monetary and macroprudential policies. In the case of financial shocks, a time-varying capital requirement, independent of its coordination, serves to stabilize production and the loans-to-output ratio.
8. Quint, D. & Rabanal, P. (2014)	In an estimated two-country Eurozone model, what is the ideal combination of monetary and macroprudential policies?	Macroprudential regulation would contribute to macroeconomic stability, increase welfare, and partially compensate for the absence of

Study	Main Question	Main conclusion
		national monetary policy. The impacts of macroprudential policies on borrowers are determined by the economic shock.
9. Rubio, M., & Carrasco-Gallego, J.A. (2014)	The study analyzed the effect of macroprudential and monetary policies on business cycles, welfare, and financial stability.	A more stable financial position and macroeconomy are achieved by combining macroprudential and monetary policy.
10. Valencia, F. (2014)	In a dynamic bank model, what is the relationship between monetary policy and banks' risk-taking incentives, and under what conditions can risk-taking be excessive?	When equity financing is ruled out, lower monetary policy rates can worsen or reduce these incentives, depending on the magnitude of the shock. Capital requirements are closer to the root of the distortion and so reduce excessive risk-taking more effectively than loan-to-value limitations.
11. Bailliu <i>et al.</i> (2015)	Should central banks respond to financial imbalances caused by unsustainable credit expansion and asset-price bubbles?	In regimes, welfare is higher when policymakers respond to financial imbalances with the policy rate and/or a Macroprudential tool, rather than a conventional Taylor rule, especially in the case of financial shocks.
12. Barnea <i>et al.</i> (2015)	To comprehend the links between monetary and macroprudential policy.	Monetary policy may be used to improve financial stability, while macroprudential policy can be used to stimulate the economy, especially when interest rates hit zero. The policy tools have a trade-off that the policymaker must understand.
13. Benes, J. & Kumhof, M. (2015)	Creating theoretical models for banks and macroprudential policies like the Basel III system.	A countercyclical capital buffer increases welfare significantly. It also minimizes the requirement for policy interest rate countercyclical changes.

Study	Main Question	Main conclusion
14. Brzoza-Brzezina <i>et al.</i> (2015)	What is the effect of introducing occasionally binding constraints (OBC) into models with financial frictions and macroprudential policy?	A big macroprudential tightening can have a far greater impact on the economy than a similar-sized easing.
15. Merola, R. (2015)	During the recent crises, to what degree have financial factors been responsible for the recent drop in US output?	The recent financial crisis has improved the financial accelerator as a mechanism of business cycle transmission and acceleration.
16. Shi, S. (2015)	Can exogenous shocks to such liquidity have a role in the business cycle?	According to the study, a negative shock to asset liquidity or a firm's collateral constraint forces aggregate investment, employment, and consumption to decline with production.
17. Piazzesi, M. & Schneider, M. (2018)	How can the determination of securities prices and inflation be modelled in an economy with a layered payment system that supports both commodities and securities trade?	Securities markets have an impact on both the supply and demand for inside money. Banks hold securities to back inside money, which is then used to pay purchase securities by other investors. As a result, the institutional details of the payment system influence securities prices, inflation, and policy transmission.
18. Lubis, A <i>et al.</i> (2019)	The introduction of macroprudential policies, which are adopted by central banks to promote financial stability, has prompted many questions about the relationship of monetary and macroprudential policies. Given limited number of studies available, this study sheds light on this subject by conducting a comprehensive and thorough evaluation of the literature.	<ol style="list-style-type: none"> 1- Monetary policy alone cannot provide macroeconomic and financial stability. 2- To supplement monetary policy, macroprudential interventions are required. 3- In emerging markets, the role of the exchange rate is critical in the implementation of monetary and macroprudential policies.

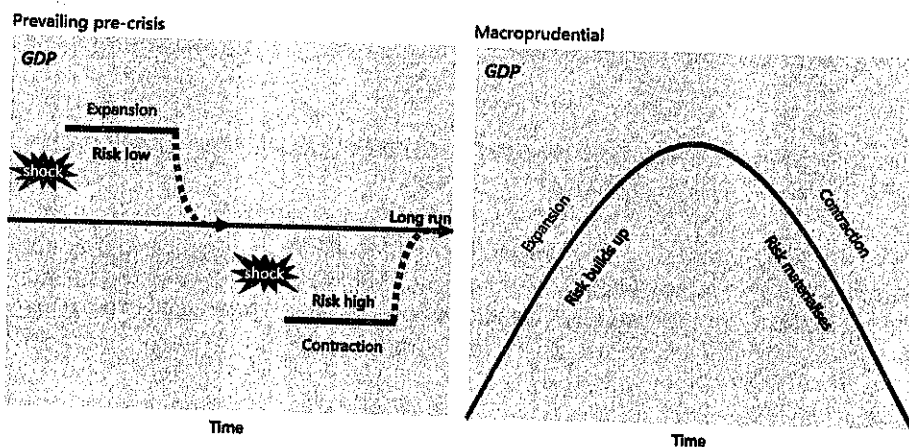
Reviewing the literature, one can conclude that more analysis is needed to give a cumulative evaluation of all the consequences of monetary and macroprudential policies across the other financial sector components such as non-bank financial intermediaries.

IV. Macroprudential policy implementations after the Global Financial Crisis (GFC)

After Financial stability concerns and possible dangers to the financial system remain a prominent topic of debate at major central banks more than a decade after the crisis began. (e.g., Lagarde, 2020; Powel, 2020). The extent to which macroprudential policies are effective in promoting financial stability and reducing the occurrence of financial crises, as their objective, is far from complete ("WP/20/65 - IMF"). There are, however, several quantitative models that have been effective in assessing the costs and benefits of macroprudential policy, as well as their overall impact on financial risk and societal welfare. (e.g., Bianchi, 2011; Bianchi and Mendoza, 2018; Martin, et al, 2021; Gertler et al. 2020; Caballero et al. 2020; Van der Ghote, 2021).

Looking at BIS's data shown in graph 3, it is obvious that "Risk is low in a boom and high in a downturn," (Graph 3, left-hand panel). The macroprudential approach, on the other hand, demonstrates that "risk accumulates in a boom and materialises in a downturn" (same graph, right-hand panel). What we see in a collapse or recession is merely the outcome of what came before it. The prevalent belief at that time was that the economy cycled between stages of growth and contraction as a result of unexpected ("exogenous") shocks, and then quickly returned to equilibrium (Graph 3, left-hand panel). The macroprudential view, nevertheless, viewed the economy changing in response to self-reinforcing ("endogenous") pressures that may push it out of equilibrium (same graph, right-hand panel).

Graph 3: Risk Conceptions and the Business Cycle ³



Source: BIS.

The growing collection of empirical research on macroprudential policies emphasizes their importance in smoothing financial cycles. (Lim et al., 2011; Dell'Ariccia et al., 2012; IMF (International Monetary Fund), 2012; Crowe et al., 2013; Claessens, 2014; Cerutti et al., 2017) are some examples. Hence, in the table below, we attempt to summarize the methodology and significant conclusions of recent empirical research evaluating Macroprudential usage globally following the GFC.

Table 3 Literature Survey of the evaluation of Monetary and Macroprudential Policies after the crisis

Study	Main Questions	Methodology	Data	Main Conclusion
1. Merrouche, O. & Nier, E. (2012)	Are interbank payment system efficiency and credit creation linked?	Regression, seemingly unrelated least squares (SURE)	Eastern European countries (1995–2005)	In the sample countries, payment reforms were an important prerequisite for the credit expansion. Reforms in the payment system also resulted in a move away from cash (outside money) and toward demand deposits (inside money) as a medium of exchange.

³ <https://www.bis.org/speeches/sp180624a.pdf>

Study	Main Questions	Methodology	Data	Main Conclusion
				allowing credit to expand in the sample countries.
2. Aiyar <i>et al.</i> (2016)	How does the credit supply respond to monetary policy and bank minimum capital requirements ?	Least square, panel Vector Auto Regression (VAR)	UK banks' minimum capital requirements (1999 Q1-2006 Q4)	There is little evidence that these two policy tools interact. The findings do not support theoretical models that raise concerns about the complicated interactions between monetary policy and macroprudential variance in capital requirements.
3. Greenwood-Nimmo, M. & Tarasso w, A. (2016)	What are the impacts of both monetary and macroprudential shocks on aggregate financial fragility in the United States?	A sign-restricted VAR	USA (1960 Q1-2007 Q4)	When interest rates are fixed, contractionary monetary policy exacerbates financial fragility, although credit-constraining macroprudential shocks may be able to lower the credit-to-GDP ratio in the short run. However, when the interest rate is free to absorb the macroprudential shock, financial fragility is reduced, indicating that a coordinated approach to macroeconomic management may yield gains.
4. Cecchetti <i>et al.</i> (2017)	Is prolonged monetary policy easing make the domestic and international financial systems more vulnerable?	Panel regression	22 countries (1998 Q1-2014 Q4)	As domestic monetary policy easing persists, the leverage ratio and other measures of firm-level vulnerability rise for banks and non-banks. As a result of monetary easing in the United States, financial sector enterprises outside of the United States are becoming more vulnerable.

Study	Main Questions	Methodology	Data	Main Conclusion
5. Siklar, I. & Akca, A. (2018)	The purpose of this research is to examine the link between financial stability and macroprudential policies in Turkey, as well as the impact of macroprudential policies on financial stability.	Vector Error Correction Model (VECM).	Estimates for the period 2010-2017 are obtained using monthly data.	To attain financial stability, the study indicates that monetary policy should be supported by macroprudential policy instruments.
6. Jiang <i>et al.</i> (2019)	The monetary policy and macroprudential policy coordination's influence on financial stability and sustainability	-System Generalized Method of Moments (System GMM) method. -Structural Vector Autoregression (SVAR) method.	China (2003 - 2017)	1- Monetary policy and macroprudential policy should perform counter-cyclical regulation at the same time to regulate bank risk-taking. 2- Tight monetary policy and tight macroprudential policy should be adopted alternatively to control housing prices. 3- To control stock price bubbles, macroprudential policy should be the first line of defense, followed by monetary policy.
7. Martinez-Miera, D. & Repullo, R. (2019)	This research reexamined the role of monetary and macroprudential policies in addressing the accumulation	A stylized general equilibrium model.	A two-date ($t = 0; 1$) economy with three sorts of risk-neutral agents: entrepreneurs	Both policies are useful, but macroprudential policy is more effective in fostering financial stability and leads to higher social welfare.

Study	Main Questions	Methodology	Data	Main Conclusion
	of hazards in the financial system from a theoretical viewpoint.		urs, investors, and bankers.	
8. Lorenci, E., & Festic, M. (2021)	The aim of this paper is to investigate whether macroprudential policy instruments can influence the credit growth rate and hence financial stability.	Six-euro area economies (Austria, Finland, Germany, Italy, Netherlands and Spain) during time span 2010 Q3 to 2018 Q4.	A fixed effects panel regression model.	The paper partly confirms that macroprudential policy instruments enhance financial stability, as measured by credit growth.

V. The effectiveness of macroprudential Policies

The bulk of the research reviewed agreed that macroprudential policies are effective in regulating credit and asset price cycles; nonetheless, they include evident tradeoffs between systemic risk and economic development that must be analyzed using appropriate analytical frameworks. Nevertheless, multiple studies demonstrate that macroprudential policies increase financial stability. Based on both macro and micro-level studies, macroprudential policies have been shown to increase the resilience of banks and borrowers and, when implemented effectively, can curb excessive loan expansion.

The existing research was mostly concerned with the effects of macroprudential policies on financial stability, with only a few studies assessing the influence on the ultimate goal, economic growth. For example, Sanchez and Rohn (2016) Used a panel of mostly OECD (Organization for Economic Cooperation and Development) countries and reported results suggesting that the use of macroprudential policies is costly as they are conducive to lower average economic growth. While (“Macroprudential policies, economic growth and banking crises”) Kim and Bruno et al. (2017) assess the macroprudential and capital flow management policies effectiveness in a sample of 12 Asia-Pacific countries. Their findings suggest that macroprudential policies are more successful

in tempering credit growth when they complement monetary policy by reinforcing monetary tightening, but when they act in opposite directions. Fondoglu (2017) studies the effectiveness of six macroprudential policy tools in 18 EMEs and finds that borrower-based interventions are the most successful at reducing credit expansion. the study sated that in general, macroprudential policies are regarded to be more suited for achieving financial stability goals, and their effective execution may allow enough flexibility for interest rate policy to target price stability more effectively.

Mehrotra (2017) examines the reactions of credit, output, and inflation to changes in macroprudential and monetary policy using a VAR framework and a sample of four Asian nations. Their findings indicate that changes in macroprudential constraints reduce economic production and inflation. Moreover, Richter et al. (2019) aimed to quantify the impacts of changes in maximum loan-to-value (LTV) ratios on production, discovering that a 10% decrease in the maximum LTV ratio resulted in a 1.1% decrease in output over a four-year horizon" (p.263). Moreover, Araujo et al. (2020) found that macroprudential rules have a statistically significant negative impact on economic activity, particularly when tightening policies are included.

Thus, several papers mention the "Cost of macroprudential policy" (Richter et al., 2018) talking about its statistically significant negative influence on economic activity. This is especially essential since slow economic development can lead to financial instability. A recession time often increases the quantity of non-performing loans and generates losses to the banking sector, which, in the context of vulnerabilities (over leverage, poor liquidity buffers, and so on), can escalate into a full-fledged crisis. As a result, macroprudential policies aimed at protecting financial stability may be counterproductive by restricting economic development, which undermines financial stability.

Despite the growing body of evidence pointing to potential risks, Macroprudential instruments have been effective in moderating booms and providing buffers that reduce the fallout from busts. However, smart planning and international cooperation can mitigate this risk, while Monetary policy can play a more effective role when experimenting with novel macroprudential measures.

VI. Conclusion, Perspective, and Policy Implications

The primary argument for macroprudential regulation stems from the negative externalities of limited accountability, inadequate enforcement, and asymmetric knowledge. Macroprudential policy's goal is to detect, monitor, and control systemic or system-wide financial risk in both time and cross-sectional dimensions. Meanwhile, systemic risk is defined as the danger of interruptions in the delivery of critical financial services, which can have major ramifications for the real economy. Hence, macroprudential policy should focus on risks that originate or are exacerbated primarily inside the financial system, allowing other recognized sources of systemic risk to be handled by other public policies.

The macroprudential policy primarily utilizes prudential measures to reduce systemic or system-wide financial risk, minimizing the chance of interruptions in the supply of critical financial services, which can have major effects on the real economy by (1) Reducing financial imbalances; (2) safeguards that limit the severity of subsequent downturns and their effects on the economy; and (3) identifying and addressing common risks. However, countries' perspectives continue to differ, for example on whether macroprudential is a particular perspective of prudential policy or a new policy area in its own right. Others claim that prudential policy, without distinguishing between micro and macroprudential policies; has always tried to promote the overall stability of the financial system. Numerous others underline the need of distinguishing between macroprudential and micro-prudential policies (e.g., in the context of a toolkit and governance framework).

Consequently, prudential-type tools, created particularly to manage systemic risk and deployed with a larger financial system in mind, should be at the core of macroprudential policy. It is necessary to establish a macroprudential authority. It should be given a clear mandate and goals, as well as the necessary authority and incentives to operate with strict accountability and consistency between policies must be targeted.

Macroprudential policy should always begin with a periodic assessment of systemic risks throughout the financial sector, which necessitates access to information. The authority will very certainly need access to frequent supervisory data to examine systemic risks presented by individual business failures as well as dangers that accumulate across the financial system.

The authority should also be given the ability to seek and collect information directly from businesses in order to assess the contribution of entities that are not normally subject to supervision and regulation to systemic problems. Policy collaboration is necessary for two reasons: first, macroprudential instruments are

frequently shared with other policies; the second, formal control for tools impacting systemic risk may reside with authority other than the macroprudential one. Moreover, International and regional cooperation can increase the effectiveness of policies taken at the national level and can also buttress the governance of national macroprudential policies through minimum standards, complemented by guidance on, and surveillance of, national action. The institutional framework should allow for the effective identification, analysis, and monitoring of systemic risk, as well as the effective use of existing resources and knowledge to ensure timely and effective application of macroprudential policy instruments with accountability. Furthermore, systemic risk prevention and crisis management are distinct policy functions that need distinct organizational structures. A prominent macroprudential authority should be named, given a mandate and powers, and held legally accountable.

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