

Macro-prudential policy interaction with monetary, micro-prudential, fiscal and structural policies

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Մակրոպրուդենցիալ քաղաքականության փոխազդեցությունը դրամավարկային, միկրոպրուդենցիալ, հարկաբյուջետային և կառուցվածքային քաղաքականությունների հետ

Գասպարյան Ռ.Լ.

Հայ-ռուսական համալսարանի Տնտեսության և բիզնեսի ինստիտուտ (Հայաստան, Երևան)
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Ամփոփում: Մակրոպրուդենցիալ քաղաքականության գործողությունների տնտեսության վրա ազդեցության մասին գիտելիքներն ու փորձը սահմանափակ են: Մակրոտնտեսական քաղաքականության կայանում է բարձր մակարդակի անորոշության ներքո, ինչպես կարգավորման գործողությունների առաջխաղացման, այնպես էլ ձեռնարկված միջոցների հետևանքների առումով: Բացի մակրոպրուդենցիալ քաղաքականությունից, մյուս տնտեսական կարգավորումները, ինչպիսիք են՝ դրամավարկային, հարկաբյուջետային և կառուցվածքային քաղաքականությունները նույնպես մեծապես ազդում են ֆինանսական կայունության վրա: Միկրոպրուդենցիալ տնտեսական քաղաքականությունը նույնպես մեծ ազդեցություն է գործում տնտեսական միջավայրի վրա, չնայած ամբողջ ֆինանսական համակարգի վրա դրական ազդեցությունը վիճելի է: Տնտեսական քաղաքականության/կարգավորման յուրաքանչյուր տեսակ ազդում է ինչպես իրական, այնպես էլ ֆինանսական հատվածների և ամբողջ ֆինանսական համակարգերի վրա: Այսպիսով, կարգավորումների միջև փոխազդեցությունը որոշիչ է մակրոպրուդենցիալ քաղաքականության գործիքակազմի և շրջանակի ընտրության հարցում:

Վճռորոշ բառեր՝ Մակրոպրուդենցիալ; Ինստիտուտներ; Ֆինանսական Կայունություն; Համակարգային ռիսկ; Կարգավորում:

Взаимодействие макропруденциальной политики с монетарной, микропруденциальной, фискальной и структурной политиками

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Резюме: Знания и опыт об эффектах (последствиях) действий макропруденциальной политики для экономики ограничены. Проведение макропруденциальной политики происходит в условиях высокой степени неопределенности, как в отношении триггеров регулятивных действий и последствий принимаемых мер. Помимо макропруденциальной политики, на финансовую стабильность также сильно влияют другие экономические регуляции, такие как денежно-кредитная, фискальная и структурная политика. Микропруденциальная экономическая политика также сильно влияет на экономическую среду, тем не менее, положительное влияние на всю финансовую систему находится под жестким спором. Каждый тип экономической политики / регулирования влияет как на реальный и финансовый секторы, так и на финансовую систему в целом. Таким образом, взаимосвязь между политиками определяет выбор инструментов и рамок макропруденциальной политики.

Ключевые слова: Макропруденциальное; Институты; Финансовая Стабильность; Системный риск; Регулирование.

Relevance and research topic

One of the main issues in the development and implementation economic policies is the fact that sometimes the objectives of different economic

policies diverge. Correspondingly, it is vital to establish an effective national and international institutional framework for the macro-prudential policy implementation and coordination of the

policy with other economic policies. We would thus resolve successfully any possible conflicts that might arise (Nier et al., 2011). The text below provides an overview of the most important policies from the standpoint of macroeconomic policy.

The paper is divided into 3 main sections. First section presents the interconnection between macro-prudential and monetary policies. We have reflected the causal effect in the transmission mechanism of both policies. The second part compares and contradicts macro-prudential policy to micro-prudential one. There a direction for combination or substitution of policies is described. And the last section describes the interconnection and coordination opportunities of macro-prudential and fiscal and structural policies. The paper ends with a conclusion, which summarizes the main features of macro-prudential policy, stresses the importance of maintaining financial stability, and points to some outstanding issues that could serve as a basis for further research.

1. Relationship between macro-prudential and monetary policy

Price stability of goods and services is the main objective of the monetary policy in most countries, as this is a precondition to prevent increase in unemployment, economic downturn, instability of interest rates and exchange rates, etc. By implementing monetary policy the corresponding institution that is usually a central bank is responsible for providing a stable macroeconomic environment, so as to indirectly ensure a stable economic growth. Meanwhile, the macro-prudential policy intends to contribute to the stability of the whole financial system to prevent and mitigate systemic risks, thus preventing downturn in the real economy.

The instabilities in the financial system usually result in macroeconomic costs, thus within the scope of national and international regulation the central banks and regulatory bodies use micro-prudential and macro-prudential analyses and instruments in addition to monetary policy tools and instruments, although a formal basis might be absent. Besides the conventional and unconventional monetary policy the central banks and regulatory bodies usually identify, monitor and analyze systemic risks, test the resistance of the system to stresses, assess risks of different sectors of the economy.

Financial stability have usually been addressed by the central banks by providing financial infrastructure, supervising big financial institutions that are systematically important for the economy and serving as the lenders of last resort.

But the relationship between financial stability and the monetary policy has been oversimplified in the past. It has been assumed that if the government

institutions, including central banks and other regulatory bodies ensure the existence of efficient and developed financial markets, stability of prices would be sufficient in achieving the stability in the whole financial sector. The crisis showed that such views were too narrow (Caruana, 2011). Today, a sound and functional financial system is seen as a prerequisite for an effective monetary policy, while an effective monetary policy is a prerequisite for maintaining financial stability successfully (Borio and Shim, 2008).

With the recent developments in the regulatory infrastructure, central banks in several countries have become also directly responsible for achieving and maintaining financial stability and mandated by the law to implement macro-prudential policies. In some occasions the price stability has been considered as part of a more general financial stability, but in the majority of cases the financial stability has been considered a phenomenon different from the price stability. Thus, the mandate for the implementation of macro-prudential policies in some, especially in some advanced countries have been given not to the central banks, but other independent regulatory institutions. According to Brockmeijer (2014), central banks are directly or indirectly involved in macro-prudential policy implementation in 89% of European countries, and over 93% of other countries.

1.1. Monetary and macro-prudential transition mechanism

One can not expect that monetary policy alone can achieve financial stability. Particularly, the monetary policy is not usually directed to obtain stable interest rates and liquidity in the system as a whole. Neither is the monetary policy armed with tools to mitigate the effects of certain types of financial distortions or stabilize the vulnerabilities in specified sectors of the economy. In small, open economies, an increase in interest rates, which may be necessary to contain inflationary pressures, may attract capital inflows and spur the accumulation of systemic risks and external imbalances (IMF, 2013). Similarly, macro-prudential policies can have side effects on the aggregate macroeconomic parameters that are primarily in the scope of interests of monetary policy. For example, limiting general credit growth intending to mitigate the financial instability may be too harmful for the economic activity level.

The transition mechanism combining the effect of macro-prudential policy and monetary policy influence on price stability and financial stability is described in the figure 1. It is clearly depicted that the goal of monetary policy is the price stability, while the macro-prudential policy aims to achieve financial stability. While price stability is a

necessary but not sufficient condition for achieving the financial stability. The vulnerabilities in the financial system can materialize and at the

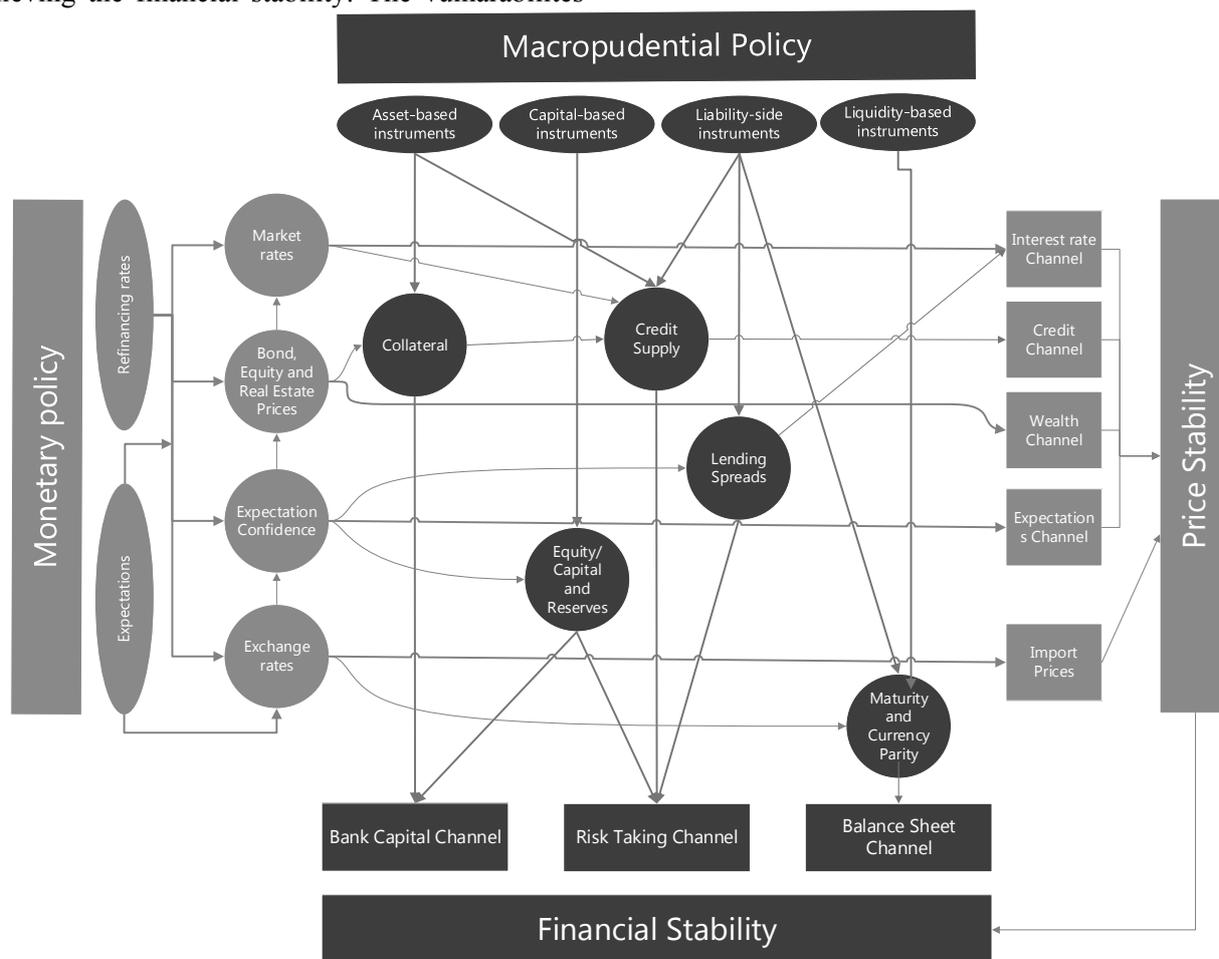


Figure 1.

Monetary and Macro-Prudential Transmission mechanisms

Source: Developed by the author, based on (Ireland, 2005), (Kuttner and Mosser, 2002), (Beyer et al., 2017).

same time price stability is not disturbed at all or for a relatively long period of time. As described by Ireland (2005), the monetary authorities can alternate the refinancing rate thus influencing the market rates, bond and equity prices. The expectations and confidence in the general public that is influenced largely by the monetary authorities can also influence significantly the prices. And obviously, the exchange rates, is one of the most important factors that can be influenced, which can in turn affect the import prices.

Macro-prudential policy on the other hand, have a different and a higher variety of policy tools including asset-based and capital based instruments, liability-side and liquidity-based instruments. Applying these macro-prudential authorities, may arrive right into the transmission channel of the monetary policy, increase or decrease the magnitude of its influence. But, most importantly, macro-prudential tools give are weapons either influence the financial stability directly, or transmitt

the influence of monetary measures towards financial stability that would otherwise not be addressed. A classic example is the inability to limit the credit growth in the overheated economy by monetary measures.

The most common policy response available for the monetary authorities is the increase of the interest rates. This in turn may increase incentives for larger savings and larger insurance of financial assets in the economy. Moreover, in the open economy capital inflows will increase in the short term, thus increasing the possibility of the realization of systemic risks. Macroprudential policy measure can influence the credit supply increasing the cost for loan issuance by the banking sector. This can influence the financial stability through the risk taking or capital channels.

Asset prices and the value of collateral is in the center of attention both for monetary and the macro-prudential policies. The overvaluation and not secure lending without sufficient guarantees to

cover the risks of unsolvency of borrowers might create procyclical effects in the market and magnify the systemic risk. Macro-prudential instruments including loan to collateral ratios, recovery

| Comparison between macro-prudential and micro-prudential monitoring. | | Table 1. |
|--|--|--|
| | Macro-prudential | Micro-prudential |
| Objective | Limit the likelihood of financial-system-wide distress and avoid significant losses in real output | Limit the likelihood of failure of individual institutions and protect consumers |
| Focus | Financial system as a whole | Individual institutions |
| View of risk | Endogenous (risk is seen as dependent on collective actions) | Exogenous (risk is seen as independent of individual actions) |
| Correlations and common exposures across institutions | Important | Irrelevant |
| Calibration of prudential tools | Top-down (calibrated with respect to cross-sectional and time dimensional risks) | Bottom-up (calibrated with respect to risks incurred by individual institutions) |

Source: (Schou-zibell, Albert and Song, 2010), Botio (2003)

| Financial cycles and stylized policy reactions | | Table 2. |
|---|--|---|
| Part of the Cycle | Microprudential Objective and Actions | Macroprudential Objective and Actions |
| Boom Strong credit and asset price growth, higher risks (but seems contained), high returns, over-optimism, and weakening underwriting standards. Expansive leveraging. | <i>No need to intervene (banks are highly profitable and can replenish capital and liquidity if needed).</i> Intervention in underwriting standards to probe the more marginal and “frothy” deals would be very desirable | <i>Address causes of systemic risk, correcting excessive imbalances and/or strengthen financial system resilience.</i> Build up strong countercyclical capital and liquidity buffers. |
| Bust type-I (resulting in no crisis) Slowdown in credit growth, stable or falling asset prices, lower returns, no confidence lost. | <i>Preserve stability of financial institutions.</i> Stabilize (or increase selectively) capital and liquidity ratios; some restrictions on dividends, more scrutiny | <i>Avoid serious deleveraging</i> Release countercyclical capital and liquidity buffers built. |
| Bust type-II (resulting in crisis) Deleveraging, substantial fall in asset prices due to fire sales, substantial financial losses, confidence lost. | <i>Regain confidence in institutions.</i> Increase capital and liquidity ratios because the minimum was wrong compared to risk, extensive scrutiny, and possible forbearance. | <i>Regain confidence in financial system and avoid deleveraging.</i> Decrease capital and liquidity buffers—if they are deemed enough—or increase them if they are the source of lack of confidence. |
| Recovery Cautious re-leveraging, Moderate credit and asset price growth. | Maintain capital and liquidity ratios rebuild during crisis or increase if needed. | No need to intervene. |

Source: Jacek Osiński, Katharine Seal, and Lex Hoogduin (IMF, 2013)

estimation techniques or more intense provisioning in the case of asset prices volatility would provide security buffers for the financial institutions. On the other hand flexing the requirements in the crisis

episodes regulatory authorities would have a bigger chance of stimulating the credit creation process, thus providing the economy with the relevant liquidity and recovery opportunity without changing the general monetary rates and escape influencing the general public expectations.

Monetary policy, however, does affect financial stability: (i) by shaping ex-ante risk-taking incentives of individual agents, affecting leverage and short-term or foreign-currency borrowing (Dell’Ariccia and Marquez, 2013, review); or (ii) by affecting ex-post the tightness of borrowing constraints, possibly exacerbating asset price and related externalities and leverage cycles. Similarly, macroprudential policies can affect overall output by constraining borrowing and hence expenditures in one or more sectors.

Most research papers to date have come to a consensus that side effects exist, however they do not have major implications on both policies, when the policies operate efficiently. In particular, most Dynamic Stochastic General Equilibrium (DSGE) models suggest that monetary policy not to change markedly when macro-prudential policies are also used, even when different types of shocks are considered. But the picture may change when either monetary or macro-prudential policies work imperfectly. In the real economy policies do not operate perfectly and, especially macro-prudential policy, can be prone to political pressures and time inconsistency issues. Thus, conduct of both policies better be coordinated and adjusted to consider the weaknesses in the other.

When the effective monetary stance gives rise to macroeconomic imbalances or excessively strong overall risk-taking incentives, national macro-prudential policies may need to be used, especially when other policies are imperfectly coordinated internationally (e.g., as when foreign lenders are not constrained from lending to the country).

2. Relationship between macro-prudential and micro-prudential policy

Macro-prudential and micro-prudential policies differ first of all in objective and the view of risk. It is usually easy to get a clearer understanding of the macroeconomic policy and its implications by contradicting it to micro-prudential policy. Stating this, it is not meant that micro-prudential and macro-prudential policies have contradicting objectives or have opposite direction influence (see Table 1). Totally the opposite, usually micro-prudential policy actions have their policy implication in achieving also macro-prudential policy objectives. The essential distinction between the policies is in their intentions and their coordination according to business and financial cycles.

The micro-prudential dimension focuses on the conditions, risks and management in individual financial institutions and on the protection of primarily depositors and investors. The general idea behind the micro-prudential regulation is that safety of individual financial institutions one by one will make sure the whole system is immune towards the risks. The general idea of the theory can be formulated as: “if every particle of the system is healthy, the system itself is healthy”.

Ironically, the focus on individual institutions often draws our attention away from the built-up vulnerabilities in the whole system. On the contrary macro-prudential regulation concentrates its focus on the safety and soundness of the financial system a whole, and the stability of individual institutions is in the objective of macro-prudential policy in the extend of the adverse effect, that the failure of the certain institution can have on the other institutions and the whole system. Thus, the interconnectedness, common exposure across institutions is in the center of macro-prudential policy research. Another, very important difference between the two regulations is the perception of risk. While conductors of micro-prudential policy regard risk as exogenous and originating independent from the actions of a single financial institution, the macro-prudential regulators regard risk as an endogenous phenomenon. The risk is considered an integral part of the system. The level of risk for the whole system and exposed to individual institution may evolve with the changes in the actions of players of financial system. According to Schou-Zibell et al. (2010), financial institutions can collectively affect economic transactions so that total risk in the financial system may be larger than the sum of risks in individual institutions.

2.1. Macro-prudential and micro-prudential policies: toward cohabitation

Action plan or the policy reaction that micro-prudential and macro-prudential policies imply may be different for different stages of business cycle. The most important difference for this research is the policy action required during the boom time, when credit and assets prices grow strongly, with the accompanying of high risks and high returns. Micro-prudential policy call for no action, as the profitability of banks does not decline, capital adequacy and liquidity ratios show a more positive dynamics. On the contrary macro-prudential regulation expects the heated economy to overturn at the end of business cycle, thus it implies actions to smoothen the heating of the economy and building up reserves (of any kind) to increase the feasibility of crisis in the downturn.

When a milder **bust of Type I**, defined by Osi, Seal and Hoogduin (2013) as a slowdown in credit

growth, stable or falling asset prices, lower returns occur without heavy confidence lost, micro-prudential regulation again implies limited action of preserving stability in the financial institutions by adjusting the capital and liquidity requirements and limiting the distribution of profits. At the same time macro-prudential policy intending to avoid serious deleveraging by releasing countercyclical buffers, using provisions or liquidity buffers. This steps might resemble the first stage of the accelerating crisis.

The **bust of Type II**, that may resemble with the already realized crisis event, that is characterized as substantial fall in asset prices due to fire sales, substantial financial losses with the general loss of confidence, will eventually trigger micro-prudential policy pushes towards stricter capital and liquidity standards. At the same time in the macro-prudential policy still is fighting with deleveraging by adjusting the capital and liquidity buffers to the direction that is required in the corresponding economic situation.

On the stage of recovery micro-prudential policy requires reconsideration of capital and liquidity requirements based on the newly found optimal levels. Macro-prudential regulation, on the contrary, does not require any intervention, as on the downturn the capital and liquidity buffers will adjust automatically from the foster credit growth and economic activity to a certain level.

A list of macro-prudential instruments also includes some micro-prudential instruments that may also reduce systemic risks and enhance financial stability. However, despite their complementarity, macro-prudential measures cannot be a substituted by micro-prudential measures. But the opposite can be the case if the regulation objectives would include general macroeconomic stability instead of safety and soundness of individual institutions one by one.

3. Relationship between macro-prudential and other policies (fiscal and structural policies).

In addition to monetary and micro-prudential policy, macro-prudential policy is closely related to other policies, such as fiscal policy, competition policy and crisis management policy (IMF, 2013). But firstly, it is obvious to mention that the firm and healthy fiscal and structural regulatory infrastructure is critical to reduce the likelihood of macroeconomic shocks. The crisis also showed that appropriate fiscal policies are essential to maintain the limits of sovereign debt and to avoid adverse shocks between sovereign risk and the financial system.

3.1. Competition and structural policies.

Competition and the structure of in the financial services sector is another important source of

vulnerability. Evidently monopolistic market structure is burdened with all kinds of risks, that even can not be defined or grouped. But a harsh competition in the financial services industry has also its drawbacks and can be source for accumulation of systemic risks in the economy. A higher level of competitiveness may lead financial institutions to take more, higher and unjustified risks, thus increasing the system's vulnerability to potential shocks. Trying to win a larger market share and secure a position in a particular market segment, financial institutions may intentionally apply less strict or even completely inappropriate lending standards. Such behavioural patterns are typical for upswings of the cycle. In addition to this, the price competition may force market players decrease lending interest rates, thus decreasing profitability and, correspondingly, the financial positions of the institutions. In the upswing of business cycle also mergers and acquisitions might become a frequent phenomenon. As a result financial institutions might emerge that are too big for the whole system to fail. In this case when the crisis hits, the social costs of the failure of the financial institutions are extremely large for the public. This also speaks in favor of a more frequent inclusion of macroprudential regulators in the policy making process of regarding changing of the market structure, fiscal policy and competition.

Macroprudential is an argument in favour of the inclusion of macroprudential policymakers in decision-making processes regarding mergers and acquisitions that may result in institutions whose size might present a threat to the entire financial system (IMF, 2013). The problem of institutions that may threaten the system's stability because of their size, importance or interconnectedness with the rest of the financial system is prominent at both national and international levels, and is often associated with moral hazard and the implicit assumption of the management structures of such institutions that they would receive government support should difficulties arise.

3.2. Fiscal and macro-prudential policies: avoiding contradiction.

During the economic boom fiscal/tax policy might encourage higher customer spending, the purchase of assets including real estate during the upswing of the cycle. This, coupled with heating economic environment, can intensify the upsurge in the real estate prices. The intensifying business cycle is usually accompanied with the abundance of capital inflows. Thus, stimulating fiscal policy is usually procyclical and increases the probability of systemic risks in the downswing of the cycle. In addition, the time horizon of political structures is generally shorter as it is most often determined by

the phase of the election cycle, which makes coordination between these two policies even more

difficult. Obviously, monetary and macro-prudential authorities are able to analyze the underlying

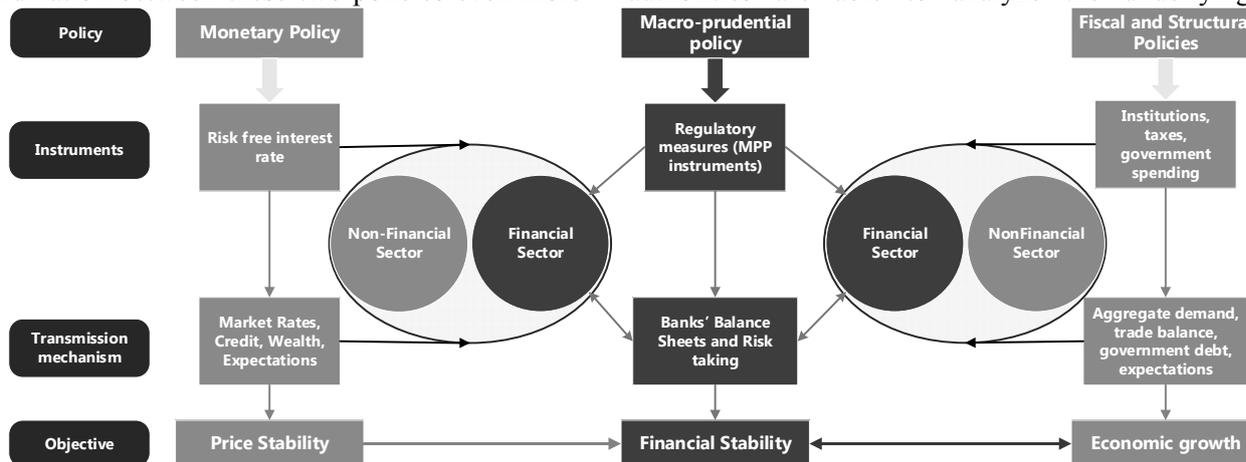


Figure 2. Macro-prudential, Fiscal and Monetary Policy transmission and interaction
 Source: Developed by the author, based on Smets, F. (2013) and Hellwig, (2015).

macroeconomic risks and imbalances, draw attention of fiscal and structural policy makers when system risks can materialize adversely for specific sectors and flag their concerns to take appropriate actions.

Nevertheless, fiscal and structural policies objectives usually are contradicting to monetary policy objectives. The contradistinction of the macro-prudential and fiscal policy objectives also exist.

This balancing nature of the policy interactions is vital in ensuring abrupt growth as well as sustainability of this growth and stability in the economy. However, while the contradictory nature of fiscal and the monetary policies are well understood and may give rise to different policy dilemmas, contradiction between the macro-prudential and fiscal policy objectives is not practically very obvious. The main reason for this is that unlike the monetary policy tools the macro-prudential policy measures do not directly influence the aggregate demand and supply. And this is one of the major advantages of macro-prudential policy. It usually targets stability in the financial sector, is directed to a limited number of institutions, thus minimizing the adverse externalities on the aggregate supply and demand, economic growth and other real economy side parameters.

But there is one phenomenon in the tax policies, that macro-prudential policy makers need to take into account. Corporate tax systems create incentives for the accumulation of systemic risks as it encourages the use of debt instead of equity financing. Interest paid is tax deductible for the profit tax considerations. This pressures the leverage ratio in the financial sector as well as encourages banks to hold lower level of capital. Secondly, no or very low level of taxation from housing(rent)

income might add up to the vulnerabilities in the assets market, thus adversely affecting the financial stability. But on the other hand this is a good example of how the coordination between fiscal and macro-prudential policies can help curb systemic risks in the economy.

In the existing literature, there is a growing interest in Pigovian taxes and levies that can also be used more directly to address systemic externalities. IMF, (2010) and Viñals (2013) suggest that taxation can be imposed on the financial institutions to cover the cost of the externalities that might be caused by them. Such taxes can be imposed at a flat rate or varied depending on the level of contribution by the individual institutions to systemic risk as well as depending on the level of overall systemic risk over time. But, given the fact that the evaluation of the future possible systemic risk, leave alone the social costs measurement are highly judgemental and not obvious information, the taxation could be connected to unnecessary bourocratic costs. Nevertheless, there can be positive examples of targeted levies that can efficiently limit the systemic vulnerabilities. Korea, for example, introduced a price-based Pigovian tax on banks' non-core foreign currency liabilities (Viñals, 2013), which is, in other words, restriction on the FX derivatives position.

This taxation is a strong have positively influenced the ratio of short-term FX liabilities and prevented banks in immersing into speculative FX trading activities. Correspondingly, Pigovian taxes can affect asset prices as well as the possibility of the speculative pressure on the exchange rates. In the cases of crises the volatility of exchange rates will be suppressed.

Conclusion

Macro-prudential policy infrastructure is in its infancy. Huge amount of practical work will still be

done to reveal the whole potential of the macro-prudential policy until it finds its firm place in the line with the core macroeconomic policies. From the comparison and contradistinction of macroprudential and micro-prudential policies that the tools used are very similar. However micro-prudential policy will obtain soundness of individual institutions and macro-prudential policy will obtain overall stability in the financial system. This is a policy choice. And we come to a conclusion that government policy will be directed to obtain financial stability, it is not always clear that by obtaining financial security of individual institutions the whole financial system can be safeguarded. In this regard micro- and macro- prudential policy tools can be merged into a one general macro-prudential framework.

At the same time the importance of monetary policy can not and should not be downgraded, as the price stability is a material prerequisite for the stability in the financial system. In addition, monetary policy affects the real sector of the economy. It is seen from the transmission mechanism and DSGE models that macro-prudential policy does not have strong adverse effect on monetary policy objectives. Moreover, macro-prudential policy instruments are flexible and various enough to achieve monetary policy and stability objectives when refinancing rates are powerless or may have adverse effect on the economic activity in the real sector.

And finally fiscal and structural policies are neither contradicting nor supporting significantly in achieving macro-prudential policy objectives. But a greater coordination and cooperation is needed to utilize synergic effect of both policies to achieve financial stability with stronger impulses such as Pigovian taxes while keeping economic activity on its potential.

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