THE INTERACTION OF MONETARY, MACROPRUDENTIAL AND FISCAL POLICIES

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Abstract
This article presents an overview of developments in the economic literature related to interaction of monetary, macroprudential and fiscal policies. The combination of fiscal and monetary policies in Ukraine and other world between 2005 and 2018 has been analyzed. After several years of a synchronized expansionary mix, monetary policy has been the most aggressive tool across countries. In response to the global financial crisis, approaches to identifying the policy mix have been reviewed. This gave rise to a new paradigm for macroeconomic and financial stability. This has also been the effect of financial stability becoming a new objective in the policy mix. In Ukraine, high economic growth is accompanied by a relative increase in inflation. Under modern conditions in Ukraine, the coordination of monetary, fiscal and sectoral policies needs to be improved: a monetary policy targets inflation; while using fiscal and sectoral policies create the preconditions for structural support and stimulation of economic growth. In other words, coordination of monetary, macroprudential and fiscal policies should ensure that inflation is reduced and GDP grows. Based on the findings of empirical and theoretical studies the lack of clear impact of monetary policy instruments on financial stability has been established. There is contradiction of goals between inflation targeting and ensuring economic growth. This fact necessitates the use of monetary policy instruments to curb inflation, macro-prudential policy instruments to ensure financial stability, and fiscal policy instruments to promote economic growth. The priority objective of monetary policy is the level of inflation, while the level of business activity can be provided with instruments of both monetary and fiscal policy. In addition, the limitation of systemic risk in the banking sector of the economy and ensuring financial stability are achieved by the macroprudential policy instruments. It has been established that the optimal balance between policies depends on the state of the economy and the business cycle stage. Under certain circumstances, macroprudential and monetary policy tools can be used together. The principles of coordination of goals and objectives of macroprudential, monetary and fiscal policies have been formed. They are scientific validity, priority of goals and consideration of mutual influence.

Keywords: monetary policy, macroprudential policy, fiscal policy, monetary and fiscal restriction (expansion), policies coordination.

INTRODUCTION

The consequences of the global financial crisis 2007–2008 have formed in the scientific environment the opinion that price stability does not provide macroeconomic financial stability. The accumulation of financial imbalances occurred even in the face of low inflation and small GDP gaps. That is why such goals of central banks as ensuring financial stability (counteracting systemic risks) and price stability should be distinguished. The goal of financial stability is achieved through the effective use of macro-prudential policy tools that limit excess growth and mitigate the effects of cyclical fluctuations in the economy.

There is a plethora of research on the rational organization of macroprudential policies in the modern economic literature. However, a number of issues, related to

the interaction of macroprudential, monetary, fiscal and structural policies, remain underdeveloped.

That is why theoretical and methodological issues of interaction will be considered in this research:

– macroprudential and monetary policies;

– monetary and fiscal policies.

Conducting such research aims to develop principles for coordinating the goals and objectives of macro-prudential, monetary and fiscal policies on the basis of maintaining financial stability by strengthening the resilience of the financial sector and preventing systemic risk.

Apparently, macroprudential policy should ensure financial stability, while monetary policy should ensure price stability. At the same time, the effective use of the tools of both mentioned above policies requires the forecasting and evaluation of their potential mutual impact.

Taking into account the lack of experience of using macro-prudential policy instruments, there is a possibility that they will be implemented inefficient. In the case of macroprudential policy instruments being inefficient, monetary tools may be additionally used. In this case, it is necessary to increase the role of monetary policy in ensuring financial stability. At the same time, in the case of limited monetary policy effectiveness (for example, for most small open economies), enhance the role of macroprudential instruments would be the most appropriate decision. However, the effectiveness of macroprudential policy instruments in ensuring price stability is debatable.

It should be added that the optimal organization of macroprudential policy is very important to ensure its effective interaction with other government policies. Policy coordination can improve the results of achieving the goal of financial stability. Therefore, it is rational to delegate the function of ensuring financial stability to one authority – the central bank. At the same time, possible contradictions in achieving policy goals require the separation of two policy functions through separate decision-making, accountability and communication structures.

Consequently, achieving the objectives of the study requires identifying the transmission channels of monetary policy impact on financial stability. They are: borrower balance sheet (default) channel; risk-shifting channel; exchange rate channel; risk-taking channel; asset price channel [24].

In the case of a borrower default channel (balance sheet channel), monetary policy may impair financial stability by affecting borrowing restrictions and increasing the risk of default. First, tight monetary policy increase the debt load for floating lending rate borrowers. Second, restrictive monetary policy affects economic activity, which has a negative impact on borrowers' income flows and loan repayment. Third, the increase in interest rates reduces the cost of the loan due to falling asset prices, which further reduces access to credit. In other words, tight monetary policy leads to an increase in the likelihood of borrowers default, a decline in banks' profits and an increase in non-performing loans. According to Allen and Gale (2000), the deployment of such a mechanism could eventually lead to a financial crisis [2; 13]. Similar conclusions are reached by scientists in empirical

studies. For example, in Spain during 1884-2006 the increase in central bank rates had a negative impact on the likelihood of borrowers default and the quality of bank loan portfolios (Jimenez and others, 2009). [17]. In the case of securitization of loans, an increase in default rates may lead to a fall in asset prices, which could further cause a financial crisis [12; 15; 22].

Given the above, it can be concluded that restrictive monetary policy can lead to a deterioration in financial stability as a result of increased debt load on borrowers and an increase in non-performing loans.

The mechanism of the next transmission channel – risk shifting – is similar in nature to the previous one, but has a fundamental difference: in this case, the source of instability is restrictive monetary policy and rising rates. Rising central bank rates may lower the margin of financial intermediaries and cause them to seek increased risk. Bhatacharya argues that financial institutions with higher leverage and lower margins will choose more risky assets (Bhattacharya, Sudipto, 1982) [5].

The effect of rising interest rates on interest margins is explained by banks providing short-term floating-rate funding and long-term lending by fixed rates. Lowering the margin in this case can lead to investing in more risky assets and increasing leverage to maintain the level of return on equity, thereby shifting value from depositors and lenders to bank owners. The effect of such a channel is usually amplified immediately before a crisis. This channel was empirically confirmed for the crisis in the United States in 2004 [11].

Another channel that confirms the negative impact of restriction on financial stability is the exchange rate channel. In open economies, monetary policy can affect the exchange rate and capital flows that determine the existence of the exchange rate channel: higher central bank rates cause foreign investment to flow into the country and lead to excessive credit expansion [14; 21].

In banking systems, capital inflows can lead to credit expansion and credit leverage increase. This creates a situation where raising domestic interest rates can lead to excess capital inflows and increasing lending. Given the low monetary rates in developed countries, this dilemma is faced by developing economies (eg Brazil, Peru and Turkey). However, it should be added that this channel was also relevant after the crisis: in Iceland, high interest rates stimulated capital inflows through the banking sector and overheated economy. In Iceland, inflation has led to a rise in central bank rates, which in turn has led to an increase in capital inflows, thereby creating a so-called “negative feedback loop” [18]. Many countries in Central and Eastern Europe have also faced this dilemma before the crisis. At the same time, in some empirical studies, the rise in financial instability has been linked to expansionary monetary policy. This negative impact is related to the implementation of the channel of excessive risk taking and the value of assets. In the case of the excessive risk taking channel, monetary policy may affect the incentives for financial intermediaries (primarily banks) to take risk. In the case of expansionary policies (with low interest rates) banks’ spreads will shrink. This may encourage banks to look for other sources of profit growth. They are increasing financial leverage and simplifying credit standards. It is associated with taking additional risks [6; 8]. Scientists also identify factors that may exacerbate a transmission mechanism of risk-taking channel: low

interest rates reduce the likelihood of borrowers default and capital requirements [1]. It should be emphasized that empirical confirmation of this mechanism has been obtained in studies based on micro-level balances of individual banks [16]. However, in the case of macro data analysis, there was no significant effect of rates on leverage and credit growth [8; 25; 21].

The expansion of the next channel (asset price) is also driven by expansionary monetary policy. As central bank rates decline, the value of creditors' assets and the net worth of borrowers will increase. In response, supply and demand for credit are increasing. This leads to a further increase in asset prices through the financial accelerator mechanism [4]. At the same time, it should be noted that this mechanism has not been properly validated in empirical studies. So, Del Negro and Otrock (2007) believe that the impact of monetary policy on US housing prices has been relatively low compared to other factors [7]. It has been proved that interest rates were relatively low in some developed economies (Ireland, Spain), while Australia, New Zealand and the United Kingdom had relatively high real rates, but excessive house prices were characteristic of all economies [24].

The generalized characteristics of the above-mentioned transmission channels of monetary instruments' impact on financial stability are shown in Table. 1.

Table 1. Transmission channels of the impact of monetary instruments on financial stability

Channels	Mechanism	The source of instability
Borrower balance sheet (default) channel	Rising Rates → Declining Business Activity and Revenue → Rising Non-performing loans	Credit restrictions
Risk-taking channel	Lower rates → Increase in activity and leverage → "Overheating economy"	The behavior of financial institutions
Risk-shifting channel	Rising Rates → Declining Margins → Seeking sources to increase profits (leverage and credit risk)	
Asset price channel	Decrease in interest rates → Purchase of assets for credit → Increase in asset prices	Externalities
Exchange rate channel	Rising Rates → Reinforcing Exchange Rate → Foreign Investment Inflow → Credit Expansion	

Source: [24]

Therefore, as Table 1 shows, there are controversial effects of monetary policy on financial stability. Borrower default, risk shifting or the exchange rate channels are associated with rising rates, excessive risk-taking or asset price channels are related to easing of monetary policy conditions.

In view of the above, there is a need to further justify the delineation of the objectives of maintaining financial and price stability. Further evidence of the need for such a distinction is the results of studies (Table 2).

The main arguments in favor of the distinction between monetary and macroprudential policies are as follows:

1. In Ukraine, despite some positive developments, monetary policy transmission mechanisms are not well-established and predictable, and given the transformation processes in the economy, the final formation of such mechanisms can only be expected in the mid-term perspective.

Table 2. Review of empirical research on monetary and macro-prudential policy coordination

Author and year of study	Period and country (s)	The main results
M. Gertler and S. Gilchrist (1994) [24]	USA (1960-1990)	Small firms are more sensitive to economic fluctuations (cyclical and monetary) and are more dependent on lending conditions. Increasing the rate leads to a deterioration of firms' financial stability and stability in the market.
Jiménez and others (2009) [16]	Spain (24,052 observations 1884-2008)	The effect of overnight rates on banks' risk appetite was assessed. Lower rates cause banks to take more risk in lending, more so for low-cap banks.
Merrouche and Nier (2010) [21]	OECD (1999-2007)	The claim that a state where the "interest rate stays low for too long" affects the accumulation of imbalances is refuted. Overall, monetary policy instruments have had little impact on instability.
Landier, Sraer, Thesmar (2011), Sengupta (2010) [20]	USA. 192,973 loans provided by New Century Financial Corporation в 2004 р.	In 2004, Fed rates were raised in response to rising real estate prices. Instead, the company providing sub-prime mortgage loans (New Century Financial Corporation) has increased its level of risk and focused its activity on aggressive growth of the loan portfolio.
Hahm, Mishkin, Shin, Kwanho Shin (2012) [14]	Open developing economies	Monetary and macroprudential policies goals should be distinguished. For example, monetary rates can not be raised to mitigate asset price bubbles. Macroprudential policy tools should be used instead.
Altunbas, Gambacorta and Marques-Ibanez (2012) [3]	A sample of 583 European banks	Well-capitalized and highly liquid banks suffered less from the crisis in 2007-2009. However, the effect of capitalization and liquidity was lower for countries with a long low interest rate period before the crisis.
Frait, Malovaná, Tomšík (2015) [9], Adrian, Liang (2016) [1]	Czech Republic	Macro-prudential and monetary policy instruments should be distinguished, as their interdependence is difficult to predict. Macroprudential instruments are more prolonged, so monetary policy instruments can only be used to maintain financial stability when a more flexible instrument is required.
IMF (2013) [24]	A number of countries in the world	The costs outweigh the benefits after a monetary shock, so monetary policy instruments should be used for excessive credit growth. Although, on the whole, the interaction between politics depends on a number of circumstances: the unemployment rate, excessive credit growth, etc.
Aino Silvo (2016) [23]	–	Using only monetary instruments to smooth cycles will lead to a contradiction between inflation and output. Macroprudential tools allow to solve this problem.
Gambacorta and Murcia (2017) [10]	Argentina, Brazil, Canada, Chile, Colombia, Mexico, Peru and the United States (1990-2012)	Macroprudential tools are more effective when used in conjunction with monetary (one-way) tools.
Soyoung Kim and Aaron Mehrotra (2017) [19]	Australia, Indonesia, Korea and Thailand (Q1:2000–Q2:2012)	Macroprudential and monetary policy tools can be used to achieve the same goals. In this case, their "double effect" and interdependence must be taken into account.

Source: own elaboration

2. There is no clear impact of monetary policy instruments on financial stability. Borrower default, risk-shifting or exchange rate channel are associated with an increase in interest rates, while excessive risk-taking or asset pricing channels occur when monetary rates drop.

3. There is a contradiction between meeting inflation targets and ensuring the required level of economic growth. The priority objective of monetary policy is the level of inflation, while ensuring the level of business activity can be provided with tools of both monetary and fiscal policies. And the limitation of systemic risk to the banking sector of the economy and to ensuring financial stability is achieved through the tools of macroprudential policy.

4. Under certain conditions, macro-prudential and monetary policy tools may be used together. Such conditions are keeping priorities of the goals and taking into account mutual influence.

Another area of research is to evaluate the coordination of monetary and fiscal policies. It should be noted that the global financial crisis of 2008-2009 has led to a revision of approaches to fiscal and monetary policy coordination. Monetary instruments have shown poor performance during the crisis, that is why most current research focuses on intensifying the use of fiscal instruments. In particular, interest in the Keynesian fiscal multiplier is returning.

Fiscal and monetary policies have been shown to have some differences depending on the region (Figure 1).

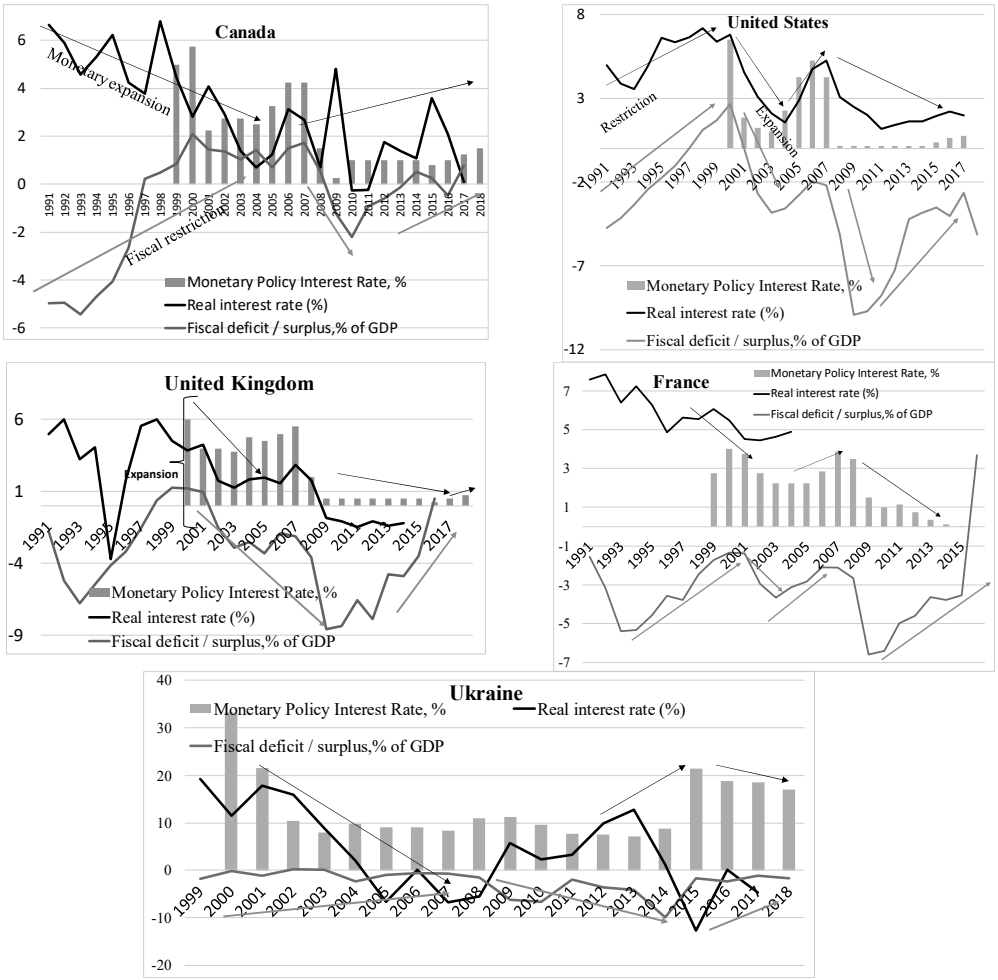

Figure 1. Dynamics of key indicators of monetary and fiscal policies of individual countries during 1999–2018

Source: own development based on statistics from the World Bank, IMF and the Bank of France

In Canada, the central bank pursued expansionary policies until 2004, followed by increases in rates in 2005-2007 and a further decline until 2015. At the same time, the gradual increase in monetary and real rates, in our view, cannot be attributed to restrictive policies, but rather reflects a possible positive trend towards the banking system's exit from the so-called “liquidity trap”. Canada’s fiscal policy focused on the surplus budget until 2007, and the aftermath of the 2008-2013 crisis necessitated an expansionary fiscal policy with a resumption of positive values in 2014-2015.

In the United States, the emergence of the so-called dotcom bubble and the subsequent collapse of the stock markets necessitated an expansionary fiscal policy. And the decline in monetary rates began in 2001. The period of 2004-2006 is identified as period of restriction, both monetary and fiscal. However, in response to the crisis, both policies could be described as expansionist since 2007, but since 2013, the budget deficit has been narrowing with a slight increase in the monetary rate.

The combination of fiscal and monetary policies in the UK and France is similar to the situation in the US: since the crisis began, monetary policy has become more aggressive, while fiscal policy has become restrictive since 2009.

In Ukraine, almost all years are characterized by budget deficits, but in stable periods, it is reduced with a significant increase in the realization of systemic risk. The relationship between the main variables that characterize Ukraine's fiscal and monetary policies is illustrated by the data in Figure 2.

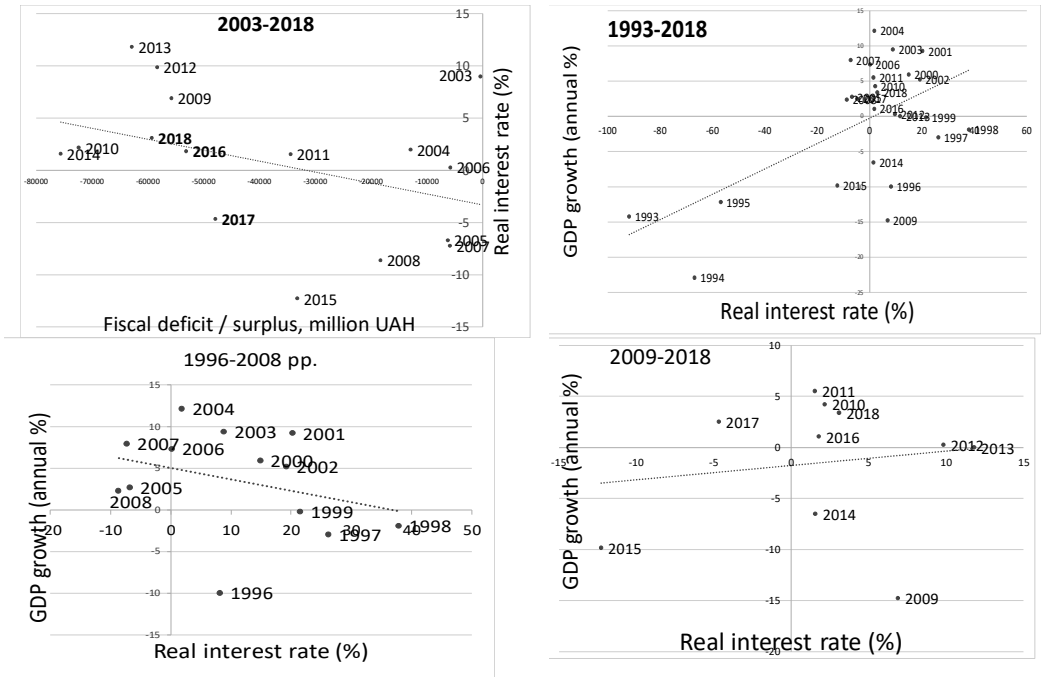

Figure 2. Relationship between the main variables characterizing the fiscal and monetary policies of Ukraine

Source: own elaboration based on statistics from NBU

As data in Figure 2 illustrates, there is slight negative relationship between the fiscal deficit and the size of the real interest rate: the instability of the economy also affects the financial sector, i.e. periods of significant deficit are characterized by high inflation and low real rates.

Comparing the relationship between GDP dynamics and the real interest rate suggests the following: lower interest real rates are associated with GDP growth in times of stable economic conditions (1996-2008), but in case of crisis, low real interest rates mean high inflation and are accompanied by the negative dynamics of GDP.

This indicates a significant difference between the Ukrainian economy and the developed ones, where high economic growth is accompanied by a relative increase in inflation. Under the modern conditions, the coordination of monetary, fiscal and sectoral policies needs to be improved: monetary policies aims at targeting inflation, while fiscal and sectoral policies should be focused on creating the preconditions for structural support and stimulation of economic growth. In other words, coordination of monetary, macro-prudential and fiscal policies should bring about a reduction in inflation and GDP growth.

CONCLUSION

Based on the results of the study, we can conclude that there is no proper and reasonable coordination of the government's fiscal policy with the monetary policy of the central bank in Ukraine. Government's social-oriented policy result in household's income growth. At the same time, income growth is much higher than the economy and labor productivity growth. These factors stimulate the growth of demand, credit expansion of banks and lead to an increase in inflation.

The need to overcome the negative impact of systemic risk on the banking sector and the economy of Ukraine as a whole requires formulating principles of effective coordination of macroprudential, monetary and fiscal policies:

– scientific validity – the implementation of the instruments of each of these policies should be carried out in accordance with scientific developments and conducted empirical studies on the basis of macroeconomic forecasting, taking into account national specificities;

– priority of goals – in order to avoid conflict of goals, it is necessary to maintain their priorities (price stability – for monetary policy and financial stability for macroprudential);

– consideration of mutual influence – applying the tools of individual policies it is necessary to take into account both their possible "double" or controversial effect.

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