UDC 338.22(497.7):338.124.4(100)

THE ROLE OF MACROPRUDENTIAL MEASURES IN TERMS OF GLOBAL ECONOMIC CRISES – THE CASE OF THE REPUBLIC OF MACEDONIA

Gjorgji Gockov, PhD[1]

Trenovski Borce PhD[2]

Abstract

The global financial and economic crisis has revealed the lack of an analytical framework that can help in predicting and dealing with growing global financial imbalances, which can cause serious macroeconomic consequences. If we make a general retrospective of the global crisis, we will determine the fundamental shortcomings in understanding the systematic risk - in fact it is a failure to assess how the aggressive risk taking by various types of financial institutions was the reason for the huge growth in the balance in the entire financial system. Excessive confidence in the ability of self-adjustment of the financial system led to an underestimation of the rising values of debt and leverage, as a result of the credit boom and the increase in the prices of assets. In addition there was an insufficient appreciation of the role of financial innovation and the financial regulation in increasing financial imbalances and the consequences of the real economy.

The global crisis was the reason for the revision of the broad policy instruments and measures. In this respect, today's crisis pointed the need to overcome the purely micro-founded approach to financial regulation and supervision and to attract particular attention to the defining of the development of macroeconomic policy elements for financial stability. Policy makers came to a consensus that the purpose of the macroprudential policy is a reduction of the systematic risk, strengthening the ability of the financial system to cope with shocks and a strong support for stable financial system functioning, without the enormous support during the crisis.

This paper will be focused on several key issues concerning macroprudential policy: defining the goals of macroprudential policies after the global financial shock; overview of the use of macruprudential measures during the crisis; analysis of the implementation and efficiency of macruprudential measures during the crisis; reasons for cooperation with monetary policy; analysis of the above mentioned issues on the case of the Republic of Macedonia, having in mind the country specific characteristics – small and open economy extremely vulnerable to global imbalances, fixed exchange rate regime.

Keywords: *crises, risk, measures, macroprudential policy, imbalances, debt*

1) Assistant Professor, Faculty of Economics – Skopje, gockovg@eccf.ukim.edu.mk, phone: 3286-903, R.Macedonia

2) Assistant Professor, Faculty of Economics – Skopje, borce@eccf.ukim.edu.mk, 3286-887 , R.Macedonia; CEA Senior Economist

Introduction

The global financial and economic crisis has point out the lack of an analytical framework that can help in predicting and dealing with emerging global financial imbalances, showing that they can cause serious macroeconomic consequences . If we make a retrospective, we can detect some fundamental flaws in the understanding of systematic risk. In fact, it is a failure to assess how aggressive risk taking by different types of financial institutions - against the background of robust macroeconomic performance and low interest rates - was a cause for huge growth in balances across financial systems. Excessive confidence in the self-adjustment ability of the financial system led to an underestimation of the growing value of debt and leverage, resulting from the credit boom and the rise in the prices of assets (especially real estate) –reflected in the historically lowest level of volatility in prices of assets and risk premium. In addition, there was an insufficient understanding and considering of the role of financial innovation and regulation in the creation of the financial boom, financial imbalances and strong consequences for the real economy (see Galati and Moessner, 2011) .

The global crisis was the reason for the revision of a broad toolkit of measures and policies. In many cases microprudential supervision failed to provide sufficient levels of capital and liquidity for financial institutions, in order to successfully deal with the shock. The effectiveness of monetary policy in dealing with systematic financial risk in terms of stable inflation, initiated a wide debate. In this respect, the present crisis has underlined the need to transcend/surpass the purely micro founded approach to financial regulation and supervision and to point out the need for significant attention to be put on the development and defining the element of macroeconomic policy for financial stability. Policymakers came to a consensus that the purpose of the macroprudential policy is reduction of systematic risk, strengthening of the financial system in dealing with shocks and providing help for stable functioning without the enormous support received in terms of crisis (see Committee on the Global Financial System, 2010).

Analysis of the macroprudential policies in terms of the global crisis in most cases (as in this paper) can be presented in several parts: the definition of their objectives, set of measures, when and how to use the measures, implementation and effectiveness in dealing with financial and economic shocks and their relation to monetary policy.

Significance and role of the macroprudential policies

Macroprudential policies seek to ensure financial stability by reducing systematic risk. Systematic risk arises from relationships within the financial system, as well as from its interaction with the real economy through cyclical movements. It can be defined as: a serious break of the provision of financial services due to a disorder in whole or in parts of the financial system, which has the potential to cause serious adverse consequences for the real economy (the definition is derived from the joint work of IMF, BIS, FSB). The key role of macroprudential policies represents the dynamic aspect of the systematic risk - "cyclicity". Financial imbalances are created in the "good times", when leverage increases, and financial institutions become too/over exposed to more correlated (or aggregate) risks. Moreover, the macroprudential policies seek to prevent the creation of structural weaknesses/gaps that contribute to higher systematic risk (this is rooted in "agency problems"- a moral hazard/adverse selection and problems of collective actions). Examples: the process of securitization where misguided incentives contributed to the destruction of credit standards and transparency of financial derivatives; inadequate arrangements for implementation and settlement of transactions on derivatives markets, considering the enormous growing market for this securities; inadequate regulation/supervision, treatment of financial institutions (Lehman, AIG and others) where the process of growing financial imbalances made this institutions too important to fail; big increase in complexity and connectivity in the financial system contributed to the decreasing transparency in distribution of risk and spread the shocks through the financial system (see IMF, 2010 ; Caruana, 2010).

Macroprudential policies focus on the interactions between financial institutions, markets, infrastructure, and the wider economy. In determining the practical purposes of macroprudential policies we can indicate two points : First, strengthening the resilience of the financial system to economic downturns (negative trends) and other negative aggregate shocks; Second, actively restricting and limiting the increase of financial risks (see BIS, 2010).

Cyclical increase of the financial imbalances is mainly due to the increase in credit risk, liquidity risk and market risk. Macroprudential policies can be used to deal with these growing risks in the economy as a whole, to increase the resilience of the financial system and to enable (uninterrupted) providing financial services within the economy. Detailed structure of the set of measures see table below (see more IMF, 2010; BIS, 2010).

Table 1

Macroprudential instruments by vulnerability and financial system component

		Financial system component				
		Bank or deposit-taker		Non-bank investor	Securities market	Financial infrastructure
		Balance sheet*	Lending contract			
Vulnerability	Leverage	• capital ratio • risk weights • provisioning • profit distribution restrictions • credit growth cap	• LTV cap • debt service / income cap • maturity cap		• margin/haircut limit	
	Liquidity or market risk	• liquidity / reserve requirements • FX lending restriction • currency mismatch limit • open FX position limit	• valuation rules (eg. MMMFs)	• local currency or FX reserve requirements	• central bank balance sheet operations	• exchange trading
	Interconnectedness	• concentration limits • systemic capital surcharge • subsidiarisation				• central counterparties (CCP)

* Capital and other balance sheet requirements also apply to insurers and pension funds, but we restrict our attention here to the types of institutions most relevant for credit intermediation.

CGFS – Macroprudential instruments and frameworks: a stocktaking of issues and experiences

Source: Committee on the Global Financial System, 2010

These policies limit the financial macro-relationship (feedback) in good as well as in bad times. First, they can reduce the rising financial imbalances during periods of expansion and reduce the chances aggregate levels of credit to become unstable. Second, buffers (capital) for absorbing losses provided in good times can be used during periods when economies characterize negative trends, without compromising the capacity for lending. Finally, by limiting the scope of the vulnerabilities in the financial system, these policies also significantly reduce the likelihood of systematic risk increasing and materializing in crisis (see IMF, 2010). To ensure effective functioning of macroprudential policies they should be targeted to all related institutions which are of systemic importance for the economy. All institutions with increased leverage which provide loans, can become extremely vulnerable if macroeconomic conditions deteriorate, and their collective decisions will affect the level of aggregate loans in the economy. In some jurisdictions macroprudential policies cover all licensed depository institutions (banks). In others, they include other financial intermediaries such as leasing companies, credit unions, funds on the money markets, investment banks etc. (see wider Nier, 2009)

The structure of the macroprudential instruments in terms of the global economic crisis

The global economic crisis was a challenge for macroeconomic policy and a cause for extensive and detailed analysis of policy instruments in the wake of the financial/economic crisis as well as in the aftermath of the financial imbalances. Thus a number of countries used more frequently a wide number of instruments in order to put the systematic risk in the financial sector under control. The set of instruments contained in the dominant part prudential measures, but also a small number of other measures that are typical for other policies, including fiscal, monetary, foreign exchange policy and even administrative measures. A survey, conducted by IMF, for the financial stability and macroprudential policies (IMF Financial Stability and Macroprudential Policy Survey, 2010) showed that 10 instruments are commonly used to achieve the macroprudential goals (for details see IMF, 2011):

- Loans oriented: setting an upper limit (ceiling) on ratios loans – to - value (LTV), a ceiling on the ratios debt-to-income (DTI), an upper limit on borrowing in foreign currency and an upper limit (ceiling) on credit or credit growth .
- Liquidity oriented: limits on net open currency positions/currency mismatch (NOP), limits the mismatch of maturity and mandatory reserves
- Capital oriented: countercyclical/time related standards for capital, dynamically provision and restrictions on the distribution of profits.

Research has shown that these instruments are used to manage the four categories of systematic risk: the risk generated by strong credit growth and rising asset prices caused by the credit growth, the risk resulting from excessive leverage in the financial sector and its efforts to reduce, systematic liquidity risk, risk related to large and volatile capital flows, including foreign currency borrowing . According to the IMF analysis, starting from 2008 two-thirds of respondents used various instruments to achieve macroprudential goals. Developing countries used much more macroprudential policies before and after the crisis compared to developed economies. But today's economic crisis led an increasing number of developed countries to improve their macroprudential formal framework and to increase the number of macroprudential instruments in their policy set.

A number of factors are relevant for the choice of the macroprudential instruments (see Lim et al., 2011):

- The degree of economic and financial development - generally developing countries more often and more widely used these instruments, due to a higher risk of failure of the market at a time when financial markets are underdeveloped and banks dominate in the system. Developing countries are more concerned about the systematic liquidity risk and use liquidity oriented measures, while developed economies favor measures for controlling (targeting) credit (although some of them began to use liquidity oriented measures after the crisis).
- Foreign exchange rate also has a role in selecting macroprudential measures - countries with fixed exchange rate tend to use more macroprudential instruments because in this monetary regime the role of interest rate policy is limited. These countries often use credit-oriented measures (ceiling on loans –to-value and ceiling on credit growth) in order to manage credit growth in terms of a limited role of the interest rate. They also tend to use liquidity-oriented measures (limits on net open currency positions/currency mismatch) to manage the risk of external financing.
- The type of shock is an important variable in the process of selection of macroprudential instruments - capital inflows in many developing economies are characterized as shocks and many of them use credit-oriented measures to control credit growth as a result of inflows. Unlike other instruments that are oriented to the size and composition of flows, macroprudential instruments are directly aimed at the negative consequences of inflows (excessive leverage, credit growth and exchange rate cause credit risks that are systematic) .

Characteristics and the effectiveness of macroprudential policies in terms of the global economic crisis

Especially important for our analysis of the macroprudential policies in crisis are the characteristics of their use and their efficiency in dealing with established goals. Analysis/survey conducted by the Committee on the Global Financial System (CGFS) on 33 central banks in late 2009, showed that macroprudential measures and interventions were widely used. They targeted a wide field of problems arising from financial system and behavior, on the aggregate level as well as on specific levels and sectors. Dominant part of the economies have a wide concept of what constitutes macroprudential policies, their aims were quite different, and the highest complementarity is seen with monetary policy . The dominant part of macroprudential policies within countries are at an early stage of their development (which was significantly increased with the emergence of the global crisis). They are implemented through the use of existing microprudential monetary policy and policies for managing liquidity and existing institutional infrastructure. Macroprudential interventions in this situation took the form of adjustment or addition to the instruments already used for microprudential and liquidity purposes. To date most experiences with these policies are based more on self assessment and discretion rather than on rules in their usage. Rresearch also shows that most macroprudential policies are used to limit credit growth in certain sectors that are seen as potentially dangerous to excess aggregate credit growth (in particular real estate investment and development). Part of developing economies policies use reserves management as prevention of increasing domestic imbalances caused by capital inflows. Measures which are targeting the size and structure of the balance sheets of financial institutions for macroprudential purposes are rarely used, with the exeception of dynamic provision (reservations) used for years in Spain (see Committee on the Global Financial System, 2010).

In today's global financial and economic crisis, an exhaustive analysis/survey for the use of macroprudential policies on a global lavel (48 countries) is conducted by IMF (IMF Financial Stability and Macroprudential Policy Survey, 2010). Summarized conclusions concerning the use of macroprudential instruments are as follows (see beyond Lim at al., 2011):

- experiences of countries show that a combination of several instruments is frequently used in order to influence a particular risk;
- many instruments, especially those aimed at lending, were calibrated to target specific risks (size, location, type of obligations, currencies, etc.)
- a common practice represents counter-cyclical adjustment of instruments;
- design and calibration of the instruments is very often based on discretion rather than rules;
- macroprudential policies are sometimes used together with other macroeconomic policies (monetary and fiscal).

The effectiveness of macroprudential policies is a particular challenge for analysis. To date there are a limited number of empirical analyzes concerning the effectiveness of macroprudential instruments, that should be a foundation on which their further development and use should rest (see Turner, 2010). Empirical analyses pertaining in this scientific field dominantly are focused on the effectiveness of individual instruments, and only a limited number of studies are focused on the effectiveness of a wide set of instruments. According to the IMF, the macroprudential policies are effective in the largest number of countries which used these policies during the crisis. In order to determine the effectiveness of these policies, IMF apply three useful research approaches (see beyond IMF, 2011). The study of Borio and Shim (2007) investigated a number of cases in which policy makers use macroprudential policies (see more Borio and Shim, 2007). A recent IMF study analyzes the effectiveness of macroprudential instruments using the three approaches in order to address the various aspects (see more Lim at al., 2011): a case study to determine achieving goals in certain countries, easy access to see the effect of targeted variables before and after the use of instruments, and more sophisticated approach of panel regression. The summarized conclusions of the three approaches show that: most of the instruments (10 analyzed) in various degrees are efficient (within specifications economies), a significant evidence that the level of economic development, the exchange rate regime and the size of the financial sector affect the performance of the instruments is not found; macroprudential instruments are effective in limiting the correlation between credit and GDP growth, the combination of instruments causes lower cost on welfare, rather than a specific use or macroprudential and monetary policies.

The relationship of monetary and macroprudential policy

The central banks can provide expertise and information as well as a strong incentive to increase the efficiency of macroprudential policies. The expertise of the monetary authorities in the analysis of systematic risk and macro - financial relations is very useful in calibrating macroprudential policies. Monetary authorities also have a strong interest in design and effective application of macroprudential instruments, either directly or indirectly responsible for them (see beyond Nier, 2009). There are several reasons for their interdependence and synergy (see IMFa, 2010): 1) ineffective macroprudential instruments can increase the burden on monetary policy to reduce the increasing financial imbalances in normal times; 2) ineffective macroprudential policies also increase likelihood that the central banks will need to provide emergency liquidity to deal with systemic shocks that could potentially adversely affect their balance and complicate the conduct of monetary policy; 3) the use of macroprudential policies affects the transmission mechanism of monetary policy, either in crisis or normal times. Thus, much work remains to develop institutional arrangements to support macroprudential policies, including to ensure the independence of the monetary policy framework. Also technical cooperation between the functions of macroprudential and monetary policy should be provided, regardless of different institutional arrangements in different countries (see detailed Borio and Shim, 2007; Borio and Drehmann 2009 ; Trichet, 2010 ; IMFa, 2010 ; Galati and Moessner 2011).

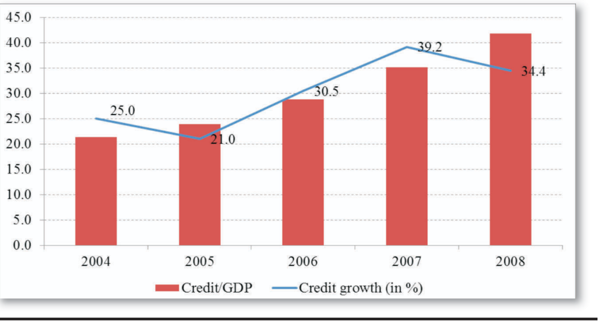
Macroeconomic ambient, risks and impact of the crisis on Macedonian economy

In the years before the the global financial and economic crisis Macedonian economy realized relatively good performances. The average annual GDP growth rate in the five years before the global financial crisis was about 5% - historically one of the highest rates of economic growth. Besides the strong external demand for Macedonian goods and services, the credit growth was one of the main driving forces of the domestic demand that realized a significant growth. The credit growth in the banking system had intensified since 2004, thus increasing significantly the share of total credits to the private sector to GDP – from around 21 percent in 2004 to around 42 percent in 2008 (Chart 1). The average annual credits growth rate in the period 2004-2008 was around 30%, or the credits to the private sector in this period increased by more than 3.5 times.

Chart 1

Credits to the private sector in the pre-crisis period

(annual growth rate and % of GDP)



Source: NBRM and SSO.

One of the main structural features of the Macedonian financial system is its relatively simple and poor structure with dominant role of the banking institutions. The most of the banking activities are financed from domestic sources (primarily deposits of residents), indicating a low correlation with the global financial market (Chart 2). This along with relatively low financial intermediation and conservative business policy banks (larger amount of deposits in relation to loans - Chart 3) helped the banking system to maintain stability amid the global financial turbulence.

Chart 2 Structure of banks liabilities

(in Denar million)

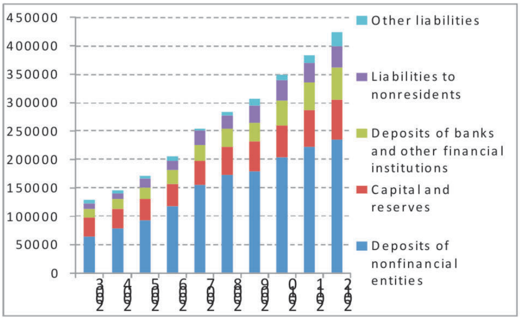
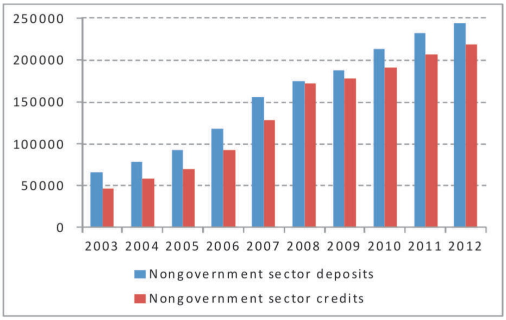


Chart 3 Nongovernment credits and deposits

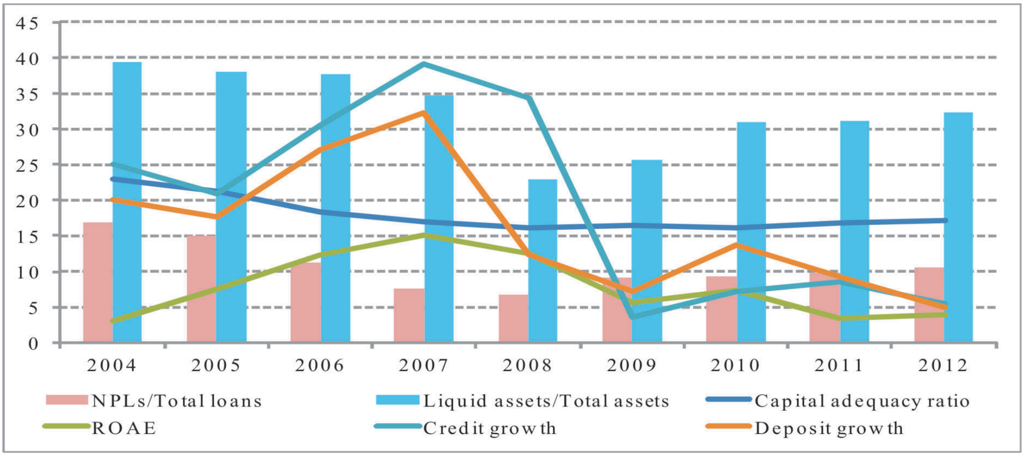
(in Denar million)



Source: NBRM.

At the end of 2008, the spillover effects of the global economic and financial crisis started to influence the domestic economy strongly, mainly through exports and the expectations channel. The escalation of the global crisis increased uncertainty and risk and influenced the balance of payments through a decrease of exports demand and a slowdown of capital flows, causing GDP declined of around 1% in 2009. The crisis caused a significant deterioration in the performance of the Macedonian banks. It was recorded a significant slowdown in the growth of deposits of non-government sector followed by a significant reduction in credit growth, reduced profitability, deterioration of the credit portfolio and increased risk of worsening the liquidity condition of the banks (Chart 4).

Chart 4 Main banks indicators before, during and after the crisis
(in %)



Source: NBRM.

In such conditions, there was a risk to increase the systemic risk of the banks due to the significant increase in the balance sheets of banks and consequently the increased risk taken in the recent years. The reduced external demand and deteriorated liquidity of Macedonian enterprises created potential risks of inability for regular servicing obligations on loans, therefore creating a risk of increased non-performing loans of the banks.

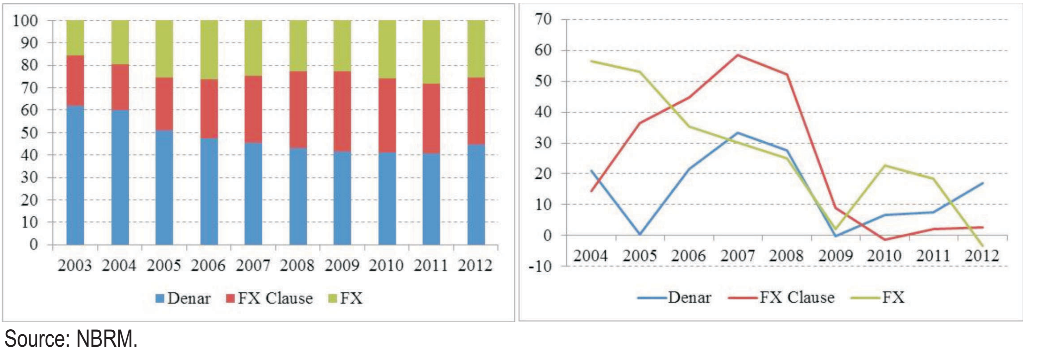
Macro-prudential measures of the NBRM during the crisis

In order to prevent the transfer / spillover of deteriorating conditions in the real economy on the increased systemic risk of the banks and to ensure a stable supply of banking services to the real economy, the NBRM continuously undertook the measures that have a macro-prudential nature. Essentially the measures intended to protect the banking system against buildup of credit risk (due to the possibility of deterioration of credit portfolio in terms of high credit growth and the worsening economic conditions) and to promote resilience of the banking sector amid the global financial and economic crisis.

Mainly the macro-prudential measures undertaken by the NBRM during the crisis *were directed to (1) control and prevention of high credit growth risk, (2) providing / ensuring an adequate level of liquidity* in terms of deteriorated macroeconomic conditions and turbulence in the financial markets.

Before we start to elaborate the concrete macro-prudential measures undertaken by the NBRM during the crisis and its effects, some NBRM measures adopted before the global financial and economic crisis deserve attention because those measures helped for easier cope with the crisis. Those are the measures that were adopted in 2006 and referred to the regulation i.e restriction of the foreign currency lending. With those measures, in order to improve the quality of foreign currency lending the NBRM tightened the conditions for providing foreign currency loans and loans with FX clause . The reason for the adoption of this measure was relatively strong growth in foreign currency lending that could cause an increase in foreign exchange risk (the so-called induced credit risk) due to a possible misalignment of currency inflows and outflows of the banks client. In the period 2004-2007 the average annual growth rate of loans with foreign exchange component (FX loans and denar loans with FX clauses) was about 40% versus the moderate growth rate of Denar loans of about 20% (Chart 4). The measure improved the quality of foreign currency lending resulting in reduced growth rates of loans with foreign currency component.

Chart 4 Banks credits to the nongovernment sector - by currency
(currency structure, in %) (annual growth rates, in %)



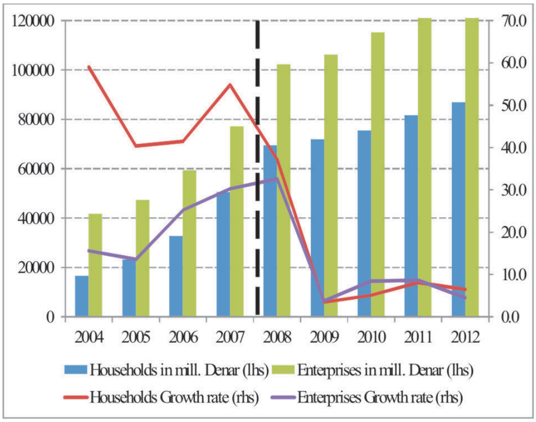
Source: NBRM.

Analyzed by sectors, in the period before the crisis a relatively high growth of loans to households was registered – at the end of the first quarter of 2008 loans to households increased by 60% while the loans to enterprises increased by 33% (Chart 5). The composition of the credit growth to households according to the type of the credit exposure illustrates an asymmetrical growth of the different credit products. The annual growth of exposure from credit cards and overdrafts to households was especially high and in some periods it reached almost 200 percent.

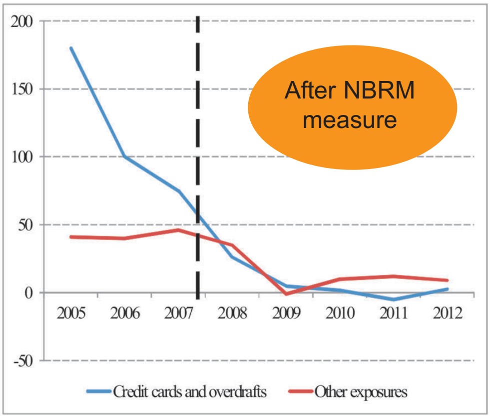
To deal with this, in March 2008 the NBRM adopted amendments to the Decision on the methodology for determining capital adequacy of banks, which increased the risk weight of used overdrafts based on current accounts and used credits based on credit cards by individuals (risk weights on credit cards and overdrafts was raised to 125%). The main objective of this prudent measure was to slow down of the credit expansion to households and to reduce the size of the credit risk of the banking sector, arising from the credits to households, on acceptable level. As a result of this measure, the growth of loans to households stemming from credit cards and overdrafts on current accounts recorded a significant reduction and it was reduced to single digits (Chart 5).

Chart 5 Annual growth rates of loans by sector

(structure and growth rates)



(households by types of credit exposure, in %)



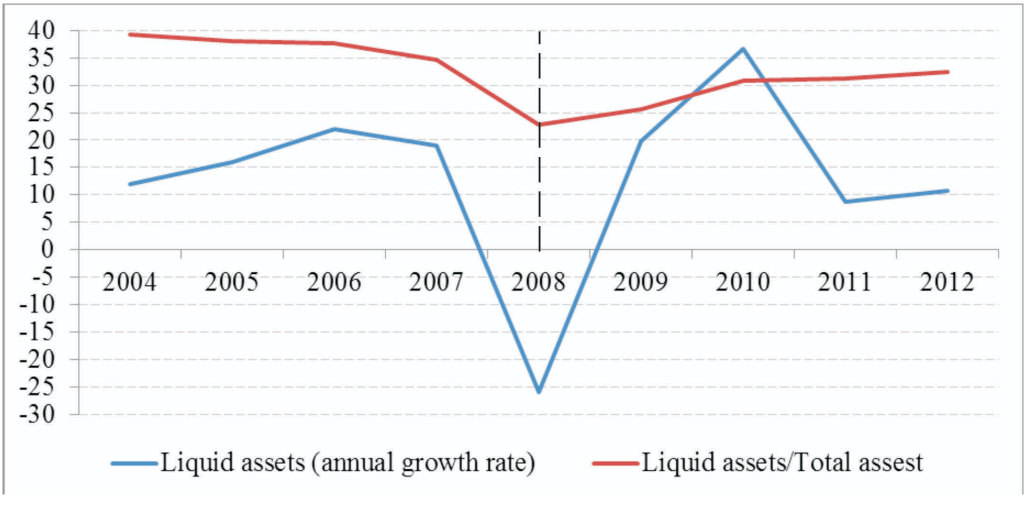
Source: NBRM.

The second measure that had reflected the credit growth of loans to households was introduced by the NBRM in June, 2008, with the adoption of the decision on the compulsory deposit with the NBRM. This decision defined the acceptable cumulative growth rates of loans to households with monthly dynamics for the rest of 2008, while in December 2008, the NBRM issued another Decision intended to cover the growth rates for 2009. With these two decisions, the annual growth rates of loans to households were projected at 39.8 percent, for the end of 2008 and 11.3 percent for the end of 2009. Whenever a bank's growth of loans to households was above the acceptable monthly rate, the bank was required to deposit with the NBRM an amount of funds equal to the achieved excess. The difference between the acceptable growth and the achieved growth constituted the compulsory deposit with the NBRM, on which NBRM paid an interest of 1 percent per annum.

The requirement for a compulsory deposit was an attempt to sterilize a certain amount of banks' funds, which could not be used for other purposes, including lending activities to households. The measure had one additional intention—to prevent the possibility of a credit growth transfer, from the exposures from credit cards and overdrafts to other similar types of exposures to households (for example, consumer loans). The NBRM measures in the area of bank lending to households have led to a significant reduction in the growth rate of loans to households - at the end of 2009 the annual growth of loans to households was reduced to about 3% (from around 38% in 2008).

The global financial markets turbulence and the contraction of the international capital flows in times of crisis determined increased risk of deterioration the liquidity position of banks - a decline of the growth of the liquid assets was registered in 2008. In order to improve banks' liquidity-risk-management systems and to strengthen their liquidity position, NBRM adopted a Decision on liquidity risk management at the end of 2008. According to this decision NBRM introduced an obligation for banks to maintain a minimum level of liquid assets. Banks are required to adhere to two minimum liquidity ratios of assets and liabilities maturing in the following 30 and 180 days. Both ratios are calculated and maintained separately for assets and liabilities in domestic and in foreign currency, and should be at least equal to one. Besides the quantitative liquidity requirements, the decision on liquidity risk management defines the minimum liquidity risk management standards that should be applied by all banks in the country. Such prudent measure on a shorter term will influence towards increase in the banks resistance to possible unfavorable effects resulting from the crisis, and on a longer term basis, this measure will enable higher certainty and viability of the banking sector's operations.

Chart 6 Liquidity positions of the banks



Source: NBRM.

In order to limit the risks in the banks in a crisis, the NBRM has adopted some additional measures:

(a) Decision on the foreign currency deposit with the NBRM, which enables the banks to deposit foreign assets with the NBRM, thus avoiding the credit risk if placing foreign assets abroad amid the global financial turbulence. The interest rates on the foreign currency deposits placed with the NBRM will be equal to the interest rates on the foreign assets placed in the central banks in the Euro area, in the international financial institutions or to the yields based on the Treasury bills of the Euro area member states;

(b) Amendments to the Decision on the exposure limits, which envisages inclusion of the exposure of the domestic banks to foreign first class banks in the calculation of the exposure limits in full amount (instead of 20% of the amount, as it was envisaged in the so far practice);

(c) Decision on managing the interest rate risk in the banking book, which prescribes the minimum necessary elements for managing the interest rate risk in the banking book, as well as the manner of measuring the banks' exposure to this risk;

(d) Decision on the reserve requirement, which enables increase in the reserve requirement allocation rate for the banks' liabilities with foreign currency component (increase in the liabilities rate in foreign currency from 10% to 11.5% and late to 13% and liabilities rate in domestic currency with FX clause from 10% to 20%). Part of the amount obtained by applying the reserve requirement allocation rate for liabilities in foreign currency is met in Denars. Simultaneously, the Decision enabled the banks full use of the assets of the reserve requirement allocated in Denars for satisfying their daily liquidity needs;

(e) Amendments to the Decision on managing banks' liquidity risk, which enables banks to include their placements in NBRM instruments (except to the reserve requirement in Euros), in the calculations of the rates for determining the necessary minimum of Denar or foreign currency liquidity.

It should be noted that at the end of 2011, following the example of developed economies, a Financial Stability Committee was established, composed of representatives from the Central Bank and Ministry of Finance. The main goal of the Committee was to analyze the risks, offer preventive macro-prudential policies and to coordinate fiscal and monetary policies.

Concluding remarks

Policymakers came to a consensus that the purpose of the macroprudential policy is reduction of systematic risk, strengthening of the financial system in dealing with shocks and to providing help for stable functioning without the enormous support received in terms of crisis. Macroprudential policies focus on the interactions between financial institutions, markets, infrastructure, and the wider economy. In determining the practical purposes of macroprudential policies we can indicate two points : First, strengthening the resilience of the financial system on economic downturns (negative trends) and other negative aggregate shocks ; Second, actively restricting and limiting the increase of financial risks. Research has shown that macroprudential instruments are used to manage the four categories of systematic risk: the risk generated by strong credit growth and rising asset prices caused by the credit growth, the risk resulting from excessive leverage in the financial sector and its efforts to reduce, systematic liquidity risk, risk related to large and volatile capital flows, including foreign currency borrowing . Developing countries used much more macroprudential policies before and after the crisis compared to developed economies. But today's economic crisis led an increasing number of developed countries to improved their macroprudential formal framework and to increase the number of macroprudential instruments in their policy set. Analysis/survey conducted on 33 central banks in late 2009, showed that macroprudential measures and interventions are widely used. They targeted wide field of problems arising from financial system and behavior, on the aggregate level as well as on specific levels and sectors. Dominant part of the economies have wide concept of what constitute macroprudential policies, their aims were quite different, and the highest complementarity is seen with monetary policy .

In order to prevent the transfer / spillover of deteriorating conditions in the real economy on the increased systemic risk of the banks and to ensure a stable supply of banking services to the real economy, the NBRM continuously undertook the measures that have a macro-prudential nature. Essentially the measures intended to protect the banking system against buildup of credit risk (due to the possibility of deterioration of credit portfolio in terms of high credit growth and the worsening economic conditions) and to promote resilience of the banking sector amid the global financial and economic crisis. Characteristics of NBRM macroprudental response to crisis:

- Financial crises first effect were smooth - the most of the banking activities are financed from domestic sources (primarily deposits of residents), indicating a low correlation with the global financial market. This along with relatively low financial intermediation and conservative business policy banks (larger amount of deposits in relation to loans) helped the banking system to maintain stability amid the global financial turbulence.

- The escalation of the global crisis increased uncertainty and risk and influenced the balance of payments through a decrease of exports demand and a slowdown of capital flows, causing GDP declined of around 1% in 2009. The crisis caused a significant deterioration in the performance of the Macedonian banks. It was recorded a significant slowdown in the growth of deposits of non-government sector followed by a significant reduction in credit growth, reduced profitability, deterioration of the credit portfolio and increased risk of worsening the liquidity condition of the banks .
- In order to prevent the transfer / spillover of deteriorating conditions in the real economy on the increased systemic risk of the banks and to ensure a stable supply of banking services to the real economy, the NBRM continuously undertook the measures that have a macro-prudential nature. Mainly the macro-prudential measures undertaken by the NBRM during the crisis were directed to (1) control and prevention of high credit growth risk, (2) providing / ensuring an adequate level of liquidity in terms of deteriorated macroeconomic conditions and turbulence in the financial markets.
- Some NBRM measures adopted before the global financial and economic crisis deserve attention because those measures helped for easier cope with the crisis. Those are the measures that were adopted in 2006 and referred to the regulation i.e restriction of the foreign currency lending. With those measures, in order to improve the quality of foreign currency lending the NBRM tightened the conditions for providing foreign currency loans and loans with FX clause
- In the period 2004-2007 the average annual growth rate of loans with foreign exchange component (FX loans and denar loans with FX clauses) was about 40% versus the moderate growth rate of Denar loans of about 20% . Analyzed by sectors, in the period before the crisis a relatively high growth of loans to households was registered – at the end of the first quarter of 2008 loans to households increased by 60% while the loans to enterprises increased by 33%. The annual growth of exposure from credit cards and overdrafts to households was especially high and in some periods it reached almost 200 percent.
- In March 2008 the NBRM adopted amendments to the Decision on the methodology for determining capital adequacy of banks, which increased the risk weight of used overdrafts based on current accounts and used credits based on credit cards by individuals (risk weights on credit cards and overdrafts was raised to 125%). As a result of this measure, the growth of loans to households stemming from credit cards and overdrafts on current accounts recorded a significant reduction and it was reduced to single digits.
- The second measure that had reflected the credit growth of loans to households was introduced by the NBRM in June, 2008, with the adoption of the decision on the compulsory deposit with the NBRM.With these two decisions, the annual growth rates of loans to households were projected at 39.8 percent, for the end of 2008 and 11.3 percent for the end of 2009.
- The NBRM measures in the area of bank lending to households have led to a significant reduction in the growth rate of loans to households - at the end of 2009 the annual growth of loans to households was reduced to about 3% (from around 38% in 2008).
- In order to improve banks' liquidity-risk-management systems and to strengthen their liquidity position, NBRM adopted a Decision on liquidity risk management at the end of 2008.
- In order to limit the risks in the banks in a crisis, the NBRM has adopted some additional measures: (a) Decision on the foreign currency deposit with the NBRM; (b) Amendments to the Decision on the exposure limits, (c) Decision on managing the interest rate risk in the banking book, (d) Decision on the reserve requirement, e) At the end of 2011, following the example of developed economies, a Financial Stability Committee was established, composed of representatives from the Central Bank and Ministry of Finance.

References

Committee on the Global Financial System (CGFS), "Macroprudential instruments and frameworks: a stocktaking of issues and experiences", CGFS Papers No 38, BIS, May 2010

Gabriele Galati and Richhild Moessner , "Macroprudential policy – a literature review", BIS Working Papers No 337, February 2011

C. Lim, F. Columba, A. Costa, P. Kongsamut, A. Otani, M. Saiyid, T. Wezel, and X. Wu "Macroprudential Policy: What Instruments and How to Use Them? Lessons from Country Experiences", IMF Working Paper /11/238, Octobar 2011

Ramon Moreno , "Policymaking from a "macroprudential" perspective in emerging market economies" BIS Working Papers No 336, January 2011

Claudio E V Borio and Ilhyock Shim, "What can (macro-)prudential policy do to support monetary policy?", BIS Working Papers No 242, December 2007

Caruana, Jaime, 2010, "Systemic Risk: How to Deal with It," paper for the first international

research conference: Challenges to Central Banking in the Context of the Financial Crisis," Bank for International Settlements.

Saurina, J., 2009, "The Issue of Dynamic Provisioning: A Case Study," Presentation at the

European Commission Conference on Financial Reporting in a Changing World, Brussels (May 7–8).

Nier, Erlend, 2009, "Financial Stability Frameworks and the Role of Central Banks: Lessonsfrom the Crisis," IMF Working Paper 09/70.

IMF, 2011, "Macroprudential Policy: An Organizing Framework – Background Paper."

Borio, C. (2009), "Implementing the macroprudential approach to financial regulation and supervision", Banque de France Financial Stability Review No. 13, September.

Borio, C. and Shim, I. (2007), "What can (macro-)prudential policy do to support monetary policy?", BIS Working Paper No. 242.

Turner, P (2010), "Macroprudential Policies and the Cycle", in 'The Financial Stability Board: An Effective Fourth Pillar of Global Economic Governance?', S Griffith-Jones, E Helleiner and N Woods (eds), Special Report, The Centre for International Governance Innovation, p. 43-48.

Trenovski, B (2013), "The key macroeconomic policies in terms of global economic crisis", Center for Economic Analyses

Trenovski, B (2013), "Crating optimal macroeconomic policy in Macedonia in terms of global economic crisis", Center for Economic Analyses

Trichet, Jean-Claude, 2010, Keynote speech at the 9th Munich Economic Summit, April 29.

Borio, C and M Drehmann (2009a), "Towards an operational framework for financial stability: 'fuzzy' measurement and its consequences", BIS Working Papers, no 284, June.