Macroprudential policies. The Romanian case.

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ABSTRACT

Romania was one of many emerging economies that have been affected by the excessive credit growth, the excessive price assets growth driven by the credit growth and by the foreign currency lending. The national macro-prudential tool kit was diverse and used to solve these issues both before and during the latest financial crisis. Analyzing the efficiency of these tools, it can be argued that those designed to prevent the build-up of systemic risks in the expansionary phase did not worked as they should, but this situation is not a country specific one, many other countries facing it, while those tools designed to create countercyclical capital buffers proved to be more efficient than the first ones, ensuring a strong resilience of the banking system in front of financial crisis.

Introduction

Romania was one of the emerging economies that has been affected by the risks identified by the IMF as underpinning the last financial crisis, namely the excessive credit growth, the excessive price assets growth driven by the credit growth, the excessive increase in leverage, the liquidity risk, the volatile capital flows and foreign currency lending. Although the banking system was exposed to significant risks, no banks failure was registered after the beginning of the financial crisis.

The main channel through which the weaknesses of banks' balance sheets affect the real economy is to reduce the supply of credit (Bernanke, 1983). Borio and Lowe (2002, 2004), Drehmann et al. (2010, 2011) and Schularick and Taylor (2012) have shown that indicators of excessive credit growth are very effective in signaling financial crises. Saurina and Jiménez (2006) show that there is a direct connection, albeit delayed, between credit growth and the increase of credit risk, a rapid increase in the loan portfolios being positively associated with an increase in non-performing loans in the future. During expansionary phase both lenders and borrowers are optimistic about investment projects and this translates into low lending standards, while during the crisis, banks suddenly become conservative and restrict the credit policy, which will lead to a credit crunch, leaving the economy without funding. On top of that, in essence, the banks behavior is pro-cyclical whatever regulatory, market or capital requirements.

Macro-prudential policies aim to reduce negative externalities from the financial system to the economy. They are designed to ensure overall stability of financial systems. Macro-prudential

approach considers issues affecting the market as a whole, distinct individual financial institution, problems that cannot be identified at micro-prudential level.

Research conducted after the onset of the economic crisis reinforced the idea that macro-prudential policies are best placed to control systemic risks mentioned above. Isărescu (2011) believes that macro-prudential policies failed to prevent the accumulation of systemic risks. Popa (2011) believes that small open economies such as those in emerging Europe are exposed to changes in volume and direction of capital flows yield and authorities should adjust their decisions by taking into account the volatility of external capital. Meanwhile, the recent crisis has shown that financial stability, cost of capital outflows may exceed the benefits (Mihai and Neagu, 2013). Capital flows separately from the benefits it can bring, present pro-cyclical characteristics, which can amplify credit cycles and their sudden reversal creates systemic liquidity risk. In the period 2004 - 2008, Romania has experienced large capital inflows, which were reflected in the substantial increase of external debt of households and companies, especially banks. This growth has created large imbalances by increasing liabilities in foreign currency, unmatched by a corresponding increase in foreign currency assets (Croitoru, 2011).

Objectives

We will try to analyze the main tools of macro-prudential policies applied in Romania and how they have helped to prevent the build-up of systemic risk or enhanced the resilience of the banking system in front of crisis. Data sets collected at national level and studies to date provide limited information on the application of macro-prudential policies in Romania. The toolkit enforced by the National Bank of Romania acted on the banking system, which holds a significant share of financial assets and is comprehensive, including almost all the macro-prudential measures internationally identified. It is thus relevant to analyze how these policies have contributed to the financial stability. We will also examine how monetary policies interacted with macro-prudential policies. Romania has experienced inflows of foreign capital in the period 2004 - 2008, which generated an increase in foreign liabilities of banks from euro 3.8 billion to 24.5 billion. As a result of these capital flows has been registered a gradual reduction in interest rates on deposits and loans and on average interest rate on the interbank market. At the same time, a number of other macroeconomic factors changed significantly (Croitoru, 2011), as follows:

- private sector external debt increased from 12% to 45.6% of GDP;
- the economy grew on average by more than 5% per year;
- current account deteriorated from 8.4% to 12.3% of GDP;
- the central bank's foreign exchange reserves increased from euro 6.3 billion to 25.9 billion;
- the domestic currency (RON) appreciated by 24%, from 4.1 RON/EUR in January 2004 to 3.1 RON/EUR in July 2007;
- financial intermediation increased from 16.6% to 39.3% of GDP;
- banks have become dependent on external financing and loans to deposits ratio in the banking system increased from 0.72 to 1.37.

Depreciation rate and massive capital inflows led to an accelerated growth of foreign currency lending, but also in domestic currency, while leading to greater imbalances between foreign assets of households and companies and their foreign currency liabilities. Although, during 2004 – 2008, there have been warnings of the risk of exchange rate increase they were ignored by the market, for which the reputation of the central bank acted as an implied warranty, believing that the foreign reserves will be used to avoid substantial loans impairments (Croitoru, 2011). With this implicit guarantee it was optimal for banks, companies and households to expose to the exchange rate risk (Croitoru, 2011).

The rapid credit growth associated with an increase in non-performing loans and the massive financing in foreign currency placed Romania (IMF, 2011) in the category of emerging economies with a higher risk (Figure 1 and 2).
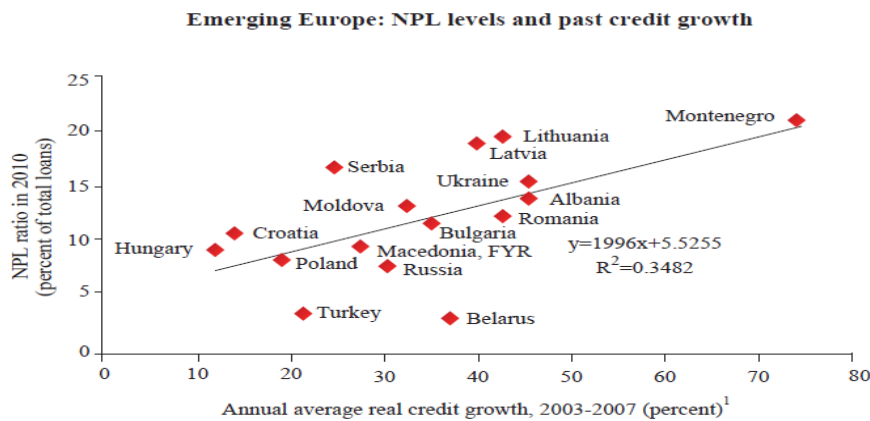
Emerging Europe: NPL levels and past credit growth

Figure 1: NPL levels and past credit growth

Source: IMF, Choosing macroprudential policies: models, instruments and preliminary empirical findings, Crowley J., Hesse H., 2011. Based on IMF, Regional Economic Outlook: Europe (October 2011)

FX loans: CEEMEA most exposed

Figure 2: FX loans/total loans

Source: IMF, Choosing macroprudential policies: models, instruments and preliminary empirical findings, Crowley J., Hesse H., 2011. Based on IMF, Regional Economic Outlook: Europe (October 2011)
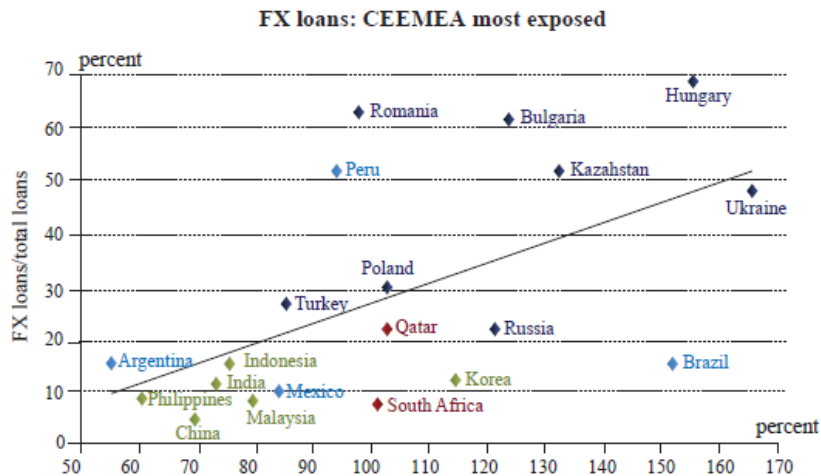
The interaction of macro-prudential policy with monetary policy

Isărescu (2011) argued that, since the monetary policy rate was the main instrument used to achieve the objective of price stability, the National Bank of Romania did not use it in order to achieve macro-prudential purposes, choosing to responded with a series of macro-prudential measures to imbalances build up in the boom phase of 2004 - 2008. The effectiveness of these measures was relatively limited, because some of macroeconomic policies were pro-cyclical, and especially after the full liberalization of the capital account in September 2006. Isărescu (2011) argued that those measures limited major macro imbalances that could occur in their absence. Crowe, Dell'Ariccia, Igan and Rabanal (IMF 2011) found that monetary policy is an inappropriate tool which can create additional costs to solve the problem of accelerated credit growth and house price driven growth, if it is not linked to a wider process of overheating. Tightening the monetary policy may lead to an undesirable slowdown of economic growth which will not be reflected, with the same intensity, in a reduction of assets prices.

The last financial crisis has shown that there is a major conflict between monetary and financial stability. While monetary stability focuses on consumer prices, financial stability takes into account changes in prices of assets (such as real estate market prices) and aims to reduce the pro-cyclicality of the financial system. The conclusion in economic theory is that, on the long term, there is no conflict between monetary stability and financial stability, the two concepts are mutually supporting, low inflation and stable long-term monetary policy

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aimed at achieving this goal tends to promote financial stability. Cerna (2011) finds that monetary policy pursued by most central banks in the last decade, exclusively oriented towards price stability, facilitated and even fueled credit expansion. The belief that keeping inflation at a low level, so monetary stability, will automatically ensures financial stability has enabled the maintenance of the bubble for years. Cerna (2011) believes that monetary policy strategy (called inflation targeting) neglected the credit capacity to cause financial instability, and suggests to use the interest rate as an instrument of monetary policy in a more flexible way in order to become more sensitive to credit slip and raising prices of financial assets. Thus, it is suggested that the instrument must be filled with specific tools of macro-prudential policy, based on two pillars: countercyclical capital buffers (to prevent systemic risk) and minimum required reserves (to put banks in a position to be able to bear the possible shortage liquidity in the money market).

In the period January 2003 - August 2007, the monetary policy rate decreased from 19.75% to 7%. Since August 2007 taking into consideration the overheating signals and the emergence of inflationary pressures, the central bank has adopted measures to increase the monetary policy rate (from 7% to 10.25% in early August 2008). Tightening monetary policy had undesirable effects, accelerating the foreign currency lending. Even there were some inflationary pressures; the measure did not prove to be effective in reducing excessive credit growth. This effect has been proved by Brzoza, Niedźwiedzińska and Chmielewski (2010), who studied the effects of monetary policy in the presence of developed financial markets in terms of capital flows. They found, based on studies made on Czech Republic, Poland, Hungary and Slovakia, that monetary policy tightening leads to substituting funding in national currency in foreign currency financing. Empirical analyzes confirm this trend for Romania, foreign currency loans accelerating the growth since the domestic currency rate was raised in August 2007 (Figure 3 and 4).
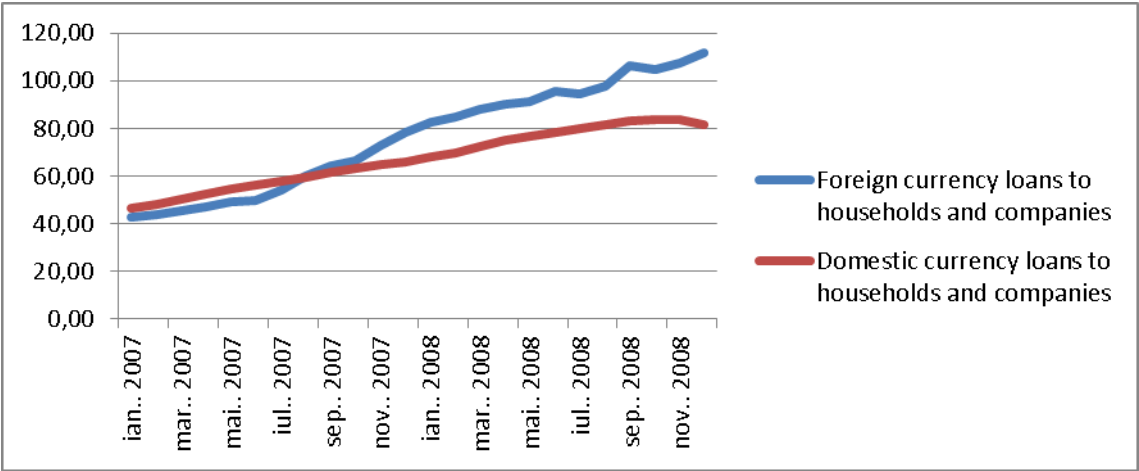

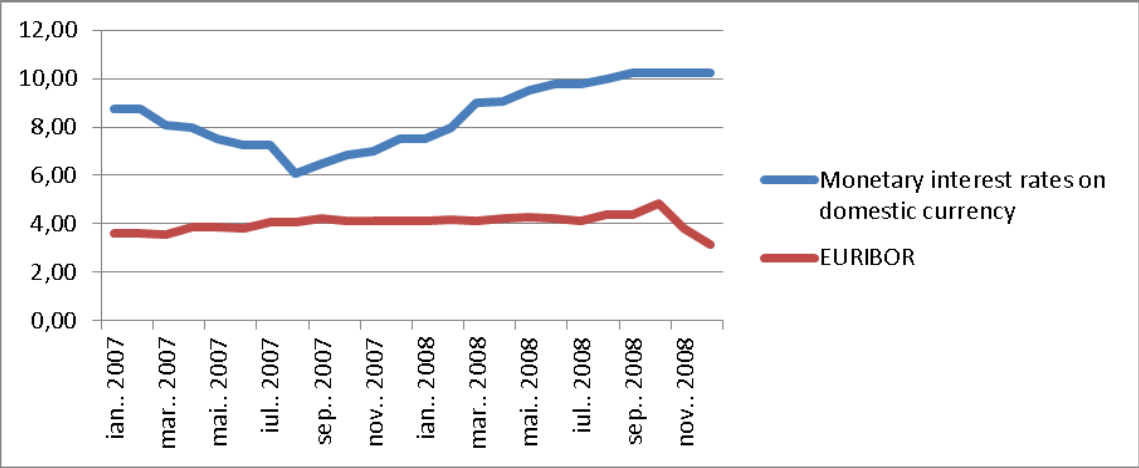**Figure 3: The domestic and foreign currency lending evolution**

Figure 4: The gaap between the local policy interest rate and Euribor

Brzoza, Kolasa and Makarsky (2013) suggest that macro-prudential policies could at least partially cancel the effect of the loss of monetary policy independence in countries on the periphery of the union, including the fact that the interest rate set by the ECB could not answer to asymmetrical development of the periphery (Greece Ireland, Portugal and Spain) and the central euro area. Using two models for the real estate market and the banking system, they found that the LTV seems to be more effective than the tools of capital adequacy, but to be effective must be implemented at national level. The countries of the periphery accumulated serious imbalances since integration, property prices almost doubled in the period 1996 - 2006, while they stagnated or increased slightly in the rest of the union. This has impacted the accelerated growth of GDP in these countries, and later, when the housing bubble ended in a significant reduction thereof. The accelerated growth of real estate prices has been identified as the main determinant of evolutionary divergence in GDP between periphery and center area. They consider that the main source of asymmetric development was the sharp reduction of interest on the periphery as a result of accession to the euro zone, combined with easier access to cross-border funding.

The situation was not different in the case of Romania, which, although joined the European Union only in 2007, there were optimistic scenarios about productivity and wages growth in the previous period of the integration. These increased the capital inflows in foreign currencies at banks level that relaxed the lending standards. This translated into an increase of the indebtedness at the companies and households level. In Figure 4 can be seen the difference between the domestic policy interest rate and Euribor, that helped increasing cross-border financing and exacerbated the carry trade and the supply push by which the major banking groups with global representation provided cheap funds in different parts of the world.

The macro-prudential policy instruments applied in Romania

Depending on the type of instrument macro-prudential measures can be divided into instruments designed to prevent building up of systemic risks and tools designed to increase the banking system resilience in front of crisis. National Bank of Romania adopted both types of tools, some of them being considered also for micro-prudential purposes.

Tools designed to prevent building up of systemic risks

i) introducing the *liquidity ratio*, since 2001, the last and most important changes being made in 2009 and 2011 (a more restrictive calculation, imposing qualitative requirements on liquidity risk management e.g. alternative financing agreements under crisis conditions, definition of liquidity reserves in crisis scenarios etc.);

ii) limiting the net open currency position, since 1992, the maximum being set to 10% of own funds individually for any currency and 20% for total foreign currency position;

iii) introducing the loan-to-value ratio (LTV), since 2003. The initial cap was set at 75%, generating a coverage ratio of 133% of loans. The inarticulate legislative framework (the possibility to buy properties without proving the existence of the down payment, over valuated guarantees in the context of accelerated rise in property prices, lack of national indicators on the real estate market evolution etc.) affected the efficiency of this instrument. In addition, the pressure of capital flows and competition for volumes and market share generated from 2007 launching offers with higher LTVs, even 100% (in some cases the residual risk was covered by insurance policies which activate if the guarantee did not repaid in full the loan). Obviously, during the crisis, these hedging mechanisms have not worked.
In my opinion, it could be useful to use different LTVs depending on the location and type of property. This can be seen in the context of unbalanced economic development between regions, cities etc. or based on property specific conditions (plots of land without utilities etc.). Perhaps the lack of relevant data series would have not allowed anyway such type of analyzes.

Subsequent to the crisis development, amid housing market crash, the LTV was significantly reduced for foreign currency loans (75% for euro denominated loans and 60% for Swiss

francs denominated loans) to ensure an adequate level of guarantee coverage in a crisis situation, and to limit in the same time the foreign currency lending;

iv) introducing the debt-to-income ratio (DTI), since 2003. The debt ceilings was initially set at 30% of the debtor revenues for consumer loans and at 35% of income for mortgage loans; the income was considered at the family level, net of other liabilities, and the maximum degree for the total debt was set at 40% of revenues. This tool worked efficiently for a while, but since 2007, following integration into the European Union and on external capital inflows pressure, the DTIs efficiency was affected, banks being able to substantiate, based on internal data, their own DTI ratios. Since the boom began in 2003, historical data could only indicate a very good performance of the loan portfolios. This trend was considered by the banking industry to be maintained in the future, even under increased indebtedness.

The move led in practice to a raise of the DTI ratio up to 70 - 75% of the net income of the households, leading to over-indebtedness of individuals. In adopting that measure contributed some macroeconomic policies that gave false signals about the sustainability and long-term trend in revenue growth, both banks and borrowers underestimating the risks (Isărescu, 2011). In practice, these signals caused granting loans with promotional interest rate, that rise after a period (usually 2 years), and also considering as eligible incomes some revenues streams which proved to be volatile during crisis (commissions, incentives, bonuses, incomes not subject to taxation etc.). Most of the non-performing loans were granted during the period 2007 - 2008, characterized by high credit growth rates and low lending standards (high rates on LTV's and DTI's). The phenomenon is not unique; the IMF (2011) noted that the crisis in the US was generated by borrowers with high rates of LTV's. It was found, that the higher was the LTV before the crisis, the greater was the nonperforming loans rate after.

Later onset of the crisis, the National Bank of Romania adopted measures to reduce indebtedness, especially on unheeded borrowers, by incorporating the results of some predefined stress tests when calculating the DTI ratio. The maximum degree of indebtedness is considered now putting in assumptions about currency risk, interest rate risk and adjustment of revenues. Stress testing hypothesis are based on a depreciation of the local currency by 35.5% compared to euro, by 52.6% compared to CHF and 40,9% compared to USD, on a shock to the interest rate risk of 0.6% and on o reduced disposable income by 6%. From 2012, a shock on the exchange rate also applies to non-financial companies.

v) limiting the banks' exposure in foreign currency loans granted to unheeded borrowers to currency risk, from 2005 to 2006, up to 300% of the own funds of each credit institution. Mechanism to limit foreign currency lending has been effective for a period, until banks have found alternatives to continue expand the foreign currency lending. The main channel was originate and distribute model, banks transferring the foreign currency exposures to parent banks or to special purpose vehicles (assignments, funded or unfunded risk participation, securitization etc.). Some of these transactions (especially swap operations, through which banks funded the foreign currency lending) were not covered by the regulation regarding the minimum requirement reserves for foreign currency liabilities, generating an increase in the short-term wholesale funding.

Another instrument used to cover the risks implied by the foreign currency lending to unheeded borrowers was to set supplementary capital requirements for foreign currency exposures, through Internal Capital Adequacy Assessment Process - ICAAP. The measure was adopted in circumstances in which, following the significant depreciation of the national currency (end of 2008), the central bank imposed, starting with April 2009, a stricter provisioning policy for exposures granted to unheeded borrowers;

vi) the central bank gradually increased the minimum required reserve ratio for foreign currency liabilities with maturities of up to two years, from 25% to 40% in the period 2004 - 2006. The measure was relatively efficient, managing to reduce for a while the growth pace of foreign currency loans. At the same time, excluding from the minimum reserve mechanism the liabilities with maturities of over 2 years stimulated attracting long term external resources. Thus, in 2008, part of the wholesale funding was over two year's maturity, and were not recorded significant outflows immediately after the onset of the financial crisis. A

similar approach can be considered the one introduced later in 2010 in Korea. Since 2010 Korea has implemented a set of tools that targeted the liabilities of banks, and thus the pattern of funding. Korea was affected by the liquidity withdrawal of foreign banks in the domestic market, given that in previous periods was recorded an accelerated growth of credit unsupported equally by domestic savings.

The aim was to reduce pro-cyclicality in banking system by reducing the short term wholesale funding, namely the cross border interbank liabilities (the non-core funding). The Korean authorities introduced a non-core liabilities levy to limit non-core liabilities of banks, applied to the amount of foreign currency debt of the banking system.

After the levy implementation, Bruno and Shin (2013) examined the evolution of the Korean banking system, compared with a group of five large countries in the region (Indonesia, Malaysia, Philippines, Thailand and Vietnam), demonstrating the positive effect of applying the non-core liabilities levy, Korea' vulnerability to crisis being reduced.

vii) with the purposes of preventing rapid reversal of capital flows, National Bank of Romania has also used another unconventional instrument which consisted in signing by this, in April 2009, under the auspices of the International Monetary Fund and the European Commission, the Vienna Agreement, with the parent banks of the nine largest foreign-owned credit institutions operating in Romania, covering about 70% of banking assets. This agreement had three components, namely:
- maintaining the total exposure in Romania of the nine credit institutions;
- increase the capitalization of subsidiaries in Romania over 10%;
- restrictions on the payment of dividends in the years of economic crisis, on a case by case basis;

In the period 2009 - 2011 commitments have been met, and the agreement has proved to be efficient. Although in recent years there has been a contraction of funding from parent banks to Romanian branches, it has been gradually accommodated by an increase in the domestic savings. In my opinion, in Romania could be effective applying a mix of instruments such as that adopted by India, namely different risk weighting ratios in the calculation of capital requirements combined with a specific provisioning policy for certain types of exposures, which were growing faster than the average loan portfolios (real estate, construction, etc.). India applied this mix in accordance with the monetary interest rate changes. The lack of relevant data series makes almost impossible to determine, at the national level, the real contribution in credit and GDP of these sectors since a significant portion of these types of exposures were given to real estate developers who had other NACE codes than real estate developers, and thus the exposures were consolidated under the NACE coding.

As IMF identified (Lim et al. 2011) the exchange rate regime appears to have a role in choosing macro-prudential instruments. In countries with fixed or administered exchange rate regime tend to be used more macro-prudential policy instruments since the exchange rate regime limits the impact of monetary policy rate.

In Romania, credit growth was associated with an increase in capital flows since it was an implied warranty on exchange rate, which functioned as an incentive for financial institutions to increase credit supply through external funding. Thus National Bank of Romania used more tools for credit risk (e.g. LTV's limit, limits on credit growth) to manage the increasing volumes of loans, while using the interest rate was ineffective. Also have been used liquidity measures (e.g. limits on foreign currency lending, limits on net open foreign currency position) to manage the risks arising from foreign currency financing. The phenomenon is not specific to the Romanian market, none of the emerging economies succeeding in effectively control volatile capital flows that generated an excessive credit growth.

Regarding **macro-prudential policies** to build-up **countercyclical capital buffers**, designed to increase the resilience of the banking system, it can be argued that although were not implemented strictly such instruments, National Bank of Romania applied to the banking system similar mechanisms that have proven to be effective.

The dynamic provisioning policy applied by Spain has become a reference model. Spain has a dynamic provisioning mechanism since 2000, which is similar to setting up countercyclical capital requirements. Methodology for determining the dynamic provisions was different from setting up provisions for losses identified in the bank's portfolios. The methodology takes into account a latent loss existing in total loans in the banking system (statistically estimated) although they are not individually identified, leading to the build-up of provisions stocks during periods of expansion, which will be used in downturns.

The formula for calculating dynamic provisions summarizes *i)* specific provisions determined for non-performing loans to a certain date; *ii)* determined proportion of general provisions on loan portfolio growth; and *iii)* a general provision based on a comparison of the average cyclical provisions recorded in the last credit cycle (at system level) with specific provisions determined at the time of calculation, for each bank.

This comparison is one that is the countercyclical element in times of expansion, when the level of non-performing loans is low, the specific provisions is reduced compared with the average provisioning on a cycle, the difference is positive and dynamic provisions fund is established. During a recession period, the trend is reversed, specific provisions increase due to a rise of non-performing loans, the countercyclical component becomes negative and the stock of dynamic provisions is used.

National Bank of Romania has pursued a specific provisioning policy since 2002. All loans were provisioned except for those of borrowers who recorded simultaneously the highest financial performance and arrears of up to 15 days. This methodology is different than the one specified in the International Financial Reporting Standards – IFRS, which is based on testing for impairment only if there are some depreciation signs, which can lead to a reduction of the asset value. In addition, there were fully provisioned all the loans with over 90 days past due. This provisioning policy has contributed to the establishment of loan loss reserves both pre-crisis and thereafter.

Some of them have been used in 2009, when the central bank allowed the deduction of up to 25% of the eligible collateral for exposures with more than 90 days past due, which led to releasing a part of the provisions established for the non-performing loans, and thus strengthening the bank's own funds.

The approach taken since 2009 can be also considered to be a dynamic provisioning. Starting with 2009, there was provisioned all foreign currency loans granted to unheeded borrowers, regardless of the credit quality (starting with 7% for the *Standard* category). This methodology considers the existence of a latent risk for all foreign currency exposures, without any impairment signs at the level of individual exposures. Starting with 2012, the national banking system adopted the IFRS. At that moment the stock of specific provisions was significantly higher (in some banks even double) than that which would have be established under the new accounting standards. Therefore, National Bank of Romania decided to maintain information on the specific provisions (RAS), along with reflecting into the accounting the new loan loss provisions, determined under the IFRS. It was decided that the prudential indicators will be calculated by taking into account the net exposures, determined as the difference of gross exposure and the maximum between RAS and IFRS provisions, while the positive difference between the total of the two types of provisions constituting into a prudential filter. This filter was deducted from the own funds. Consequently, the level of own funds have not been positively affected by the transition to new accounting standards, which implied a low level of loan loss provisions than previous one. The prudential filter was decided to be released gradually, and starting with 2014 the central bank decided to gradually release the prudential filters (20% annually, until the filter is removed entirely), which translates in a release of countercyclical capital, increasing the own funds at the banking system level.

The methodology has common features with that applied in Spain, which is taken as internationally benchmark for both academia and by regulators in respect of the formation of countercyclical capital buffers. Looking at the moments when the central bank allowed the deduction of 25% of the collateral in calculating specific provisions for non-performing

exposures and the release of 20% of prudential filters, it can be seen a large positive effect of establishing ex-ante loan loss provisions. Also, analyzing the non-performing loans coverage ratio with specific provisions could be seen that during the period 2003 – 2014 this exceeded 100%, while the difference between the specific provisions and the impairment adjustments forms solid prudential filters.

Conclusions

Macro-prudential policy tools can be helpful, but their effects are still far from being fully understood, systemic risk is multidimensional and difficult to measure, and transmission mechanisms are not yet fully known (Isărescu, 2011). In addition, macro-prudential policies are not a substitute for traditional solid micro or macroeconomic policies, monetary and fiscal policies should remain effective against distortions and macroeconomic imbalances (Isărescu, 2011).

It can be concluded that, according to national specificities, the most effective tools that can reduce accelerated credit growth without inducing distortions remain LTV and DTI ratios, especially when the effects of monetary policy are limited. Lambertini et al. (2013), in a model analyzing real estate market, consider that a countercyclical LTV based on credit growth may stabilize the economy better than the interest rate. At the same time, limiting foreign currency lending may be effective in the accumulation of risks.

Regarding the tools to increase capital reserves, dynamic provisioning model has proven to be efficient so can be used depending on the historical development of national financial systems. At the national level this tool proved its efficiency. This can lead to a better coverage of risks than using the countercyclical indicator introduced by Basel III.

In conclusion, the traditional instruments of macro-prudential policy continue to be effective at national level in order to control systemic risks, if they are used in a proper way.

Acknowledgements

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