

Inflation Targeting in the Romanian Banking Brushwood

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Abstract. *As a result of joining the global trend of the monetary policy modernization, Romania has adopted the inflation targeting strategy in August 2005. Although the implementation conditions have been prepared in advance on the background of a medium-term disinflation process, the National Bank of Romania (NBR) succeeded in reaching the inflation target only in one year (2006). Beyond the inevitable difficulties specific to emerging countries, the implementation of this strategy, that has proved to be effective even in conditions of crisis, was hampered by an unfavourable economic and political environment. In this paper, the authors aim to analyse the responses of the Romanian banking system to the signals of monetary policy sent by the NBR. In order to do this, the dynamics of the non-governmental domestic credit and the interest rates channel have been econometrically tested. The results of the analysis showed a chaotic growth in lending over the last years (2005-2011) in Romania, respectively an uncooperative attitude of the commercial banks on reaching the objectives of the monetary polic.*

Keywords: monetary policy; inflation targeting; Granger causality tests; interest rate; commercial banks.

JEL Codes: E52, E58, C22.

REL Codes: 8F, 11B.

Introduction

The strategy of inflation targeting, which was introduced in 1990 by the Central Bank of New Zealand as an innovation of the monetary policy instruments, is considered by literature and practitioners to be a framework that allows central banks to exercise a “constricted discretionarism”, in which the role of the nominal anchor is played by the inflation targets. Thus, the inflation targeting achieves conciliation between the discipline and the responsibility imposed by the rigid rules, on the one hand, and the flexibility allowed by the discretionary approach, on the other hand. Beyond the undeniable successes achieved by both developed and emerging countries as a result of applying this monetary policy strategy, there are a number of difficulties and risks that led to missing the inflation target, especially during the first years of implementation.

The difficulties of applying the inflation targeting strategy are linked to a series of minimal conditions that describe the monetary policy framework (Mishkin, 2001):

- a commitment of the institution running the monetary policy to price stability as its main objective on long term, and to the inflation target achievement. However, many countries practice a flexible inflation targeting and give a certain degree of importance to the output stability (the macroeconomic outcome) around the potential level and even pursue other objectives to some extent;
- an explicit objective of the monetary policy through the publication of numerical targets for inflation rate in a specific time horizon, either as points (2 percent annually), or as an interval (1-3 percent), or as a point with an accepted error (2 percent \pm 1 percentage point);
- an internal process of decision in which the target variables have a prominent role and the central bank sets its instruments (the nominal interest rate on short-term) so that the objective is achieved;
- an increased transparency of the monetary policy and of the accountability of the central bank in relation to the achievement of its main objectives. Openness and transparency enable the monetary policy makers to be publicly accountable for the decisions they take. This stimulates them to achieve their goals, increasing the public confidence in the central bank and therefore its credibility.

A high degree of euroization/dollarization may create potential problems for the inflation targeting regime: this requires flexible exchange rates, as the exchange rate fluctuations are inevitable in this case. Steep depreciations may increase the burden of the debt denominated in foreign currency, causing a massive damage to the balance sheets of the economic agents and an increase in

the risks associated to a financial crisis. This suggests that emerging market economies cannot afford to ignore the exchange rate when setting the monetary policy stance in accordance with the inflation targeting strategy, but the role that it assigns should be clearly subordinated to the inflation objective (Mishkin, 2001).

One of the problems that the central bank is facing refers to the defective control that it has on inflation because of the lags that arise in the transmission mechanism of the monetary policy, the uncertainties related to this mechanism, the current state of the economy and the future shocks related to it, as well as factors that are not related to the monetary policy. The solution proposed for this problem involves using inflation forecast as an intermediate target (inflation forecast targeting). The use of the inflation forecast targeting implies that the people running the central bank should develop a range of possible paths for inflation and the GDP deviation, corresponding to different trajectories of the main monetary policy instrument (the interest rate) from which the one that leads to a minimized variation of the two variables of the loss function will be chosen.

On the other hand, economic agents react with some delay to the signals sent by the central bank, delay that is caused by the check of the information received, or by the efforts to review the business plans. From this perspective, an increase in the central bank's credibility is an indispensable requirement to the successful implementation of the inflation targeting strategy. Nevertheless, one should not overlook the fact that economic agents pursue their own interests, which are not always convergent with the interests of the central bank. Of course, this is also true in the case of the relationship of the central bank with the commercial banks, which leads to a great amount of delays in propagating the effects of the monetary policy measures, or it can even cause side effects.

The empirically proven delay with which the interest rates are adjusted is supported by a series of theoretical statements. The first argument assumes that banking is facing costs generated by the information asymmetry, which could lead to adverse selection phenomena and moral hazard. In case the interest rates on credit increase, there is a possibility that banks can attract borrowers with a higher risk profile (adverse selection). Concurrently, the entities that counter loans are encouraged to choose riskier projects (moral hazard). Therefore, the expected income of banks can actually decrease along with the increased funding costs when the default probability of the borrowers increases sufficiently. In this situation, banks choose not to increase interest rates on loans proportional to a shock on the monetary market interest rate, but rationalizing the credit supply (credit rationing).

Furthermore, customers may support the switching costs when they choose to change the bank they have been working with. Such costs may be

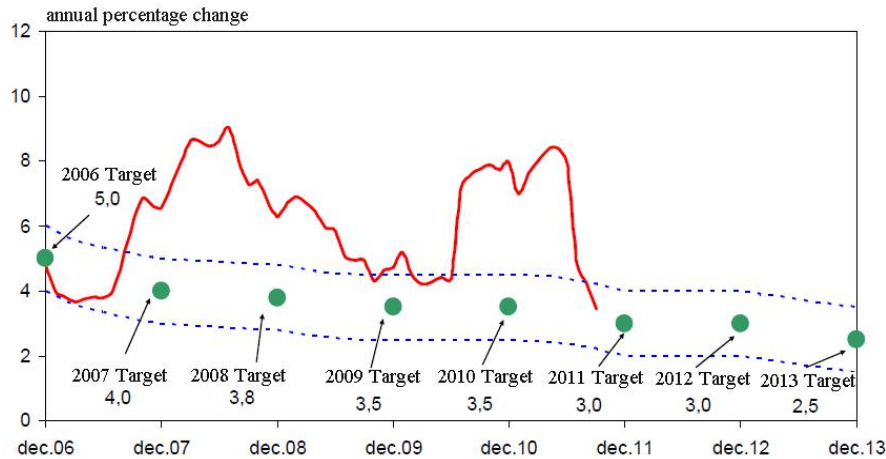
administrative or they can be related to collecting the information and they are also expected to be significant in the markets that are dominated by long-term banking relationships and repeated transactions (Sharpe, 1997). According to this theory, switching costs contribute to the segmentation of the market, reducing the elasticity of the deposit demand/supply depending on the interest rate. A low elasticity could introduce in return, *ceteris paribus*, an asymmetry in the transmission of interest rates. The reaction of the interest rates on loans, for example, would be stronger in case of an increase in the interbank interest rates and weaker if the latter decreases.

Another argument is that the banks are facing adjustment costs when the interest rates of the monetary market change. A bank that aims to maximize the profit will make a change in the interest rate on credits only when the adjustment costs are lower than those induced by maintaining interest rates unchanged. The latter are directly proportional to the elasticity of the demand for bank loans, which is lower in markets characterized by a smaller number of competitors, greater barriers at the market entry or the absence of non-bank financing alternatives or on the external market. Moreover, banks will choose not to change the interest rates when they perceive the interest rates variation of the monetary market as temporary.

Leuvensteijn Van et al. (2008), Groppa et al. (2007) emphasize the fact that the intensity of competition affects the transmission of interest rates in the Euro area. Sander and Kleimeier (2004) conducted a study involving eight countries that joined the EU in 2004, and concluded that the transmission process is determined by several variables such as the banking market concentration, the health of credit institutions, the foreign participation to their capital and the monetary policy regime. Based on this result, the authors argue that there is a high potential for convergence of the interest rates pass-through in these economies in accordance with the convergence progress of the macroeconomic financial structure.

In Romania, the central bank officially adopted the inflation targeting strategy in August 2005. The decision to shift to inflation targeting was adopted only after the preconditions specific to this kind of change have been met. The main preconditions considered were the following: (i) lowering the annual inflation rate below 10 percent, (ii) strengthening the independence *de jure* and *de facto* of the NBR; (iii) restricting the fiscal dominance and a better coordination between the fiscal and the monetary policies; (iv) the recovery and strengthening of the banking system and increasing the banking intermediation.

Nevertheless, the inflation target was reached in only one year (2006), while the period 2005-2010 was dominated by failure. It seems that in the second semester of 2011 the inflation target might be reached (Figure 1).



Note: Variation band is 1 percentage point around the central target

Source: NBR.

Figure 1. *Dynamics of the inflationary process in Romania according to the targeted interval*

Of course, there are many possible explanations regarding the NBR's failure to reach the inflation target. Thus, the levels of the annual inflation targets are considered to be set so that they meet the requirements arising from both the implementation of the monetary policy in the context of inflation targeting strategy and the need to conduct the nominal and real convergence process of the Romanian economy. Under these circumstances, there is a question arising among specialists - whether one of the obvious reasons for missing the target is the very ambitious level to which it has been set. However, we should not overlook the fact that the NBR dealt with this dilemma that was generated by the increase in the inflationary pressures of the demand, on the one hand, and on the other hand, with the amplification of volatile capital inflows as a result of allowing the non-residents to access term deposits in Ron.

Moreover, because Romania is an emergent economy, with many prices that are still administered, the prices advance at a higher rate than in the rest of the Euro area is a natural process. If inflation targeting around 2% in the Euro area can be considered an anchor in the past, for Romania, the choice of target can be seen either as an anchor transfer, or a spurt of ambition. The anchor transfer is more like a reference to the foreign reality, rather than the Romanian one. Furthermore, the NBR influences only part of the consumer basket that it aims, which means that in order to force the achievement of the target, it should produce deflation in the prices that it can affect. Forcing the process of reducing inflation affects economic development (Isar, 2011).

Without exhausting the long list of causes that contributed to the inflation target misses, the authors intend to address this problem in terms of the relationship between the central bank and the commercial banks.

Methodology

Our analysis focused on the dynamics of the domestic non-government credit and the factors that influence it, but also on the interest rate channel. In the analysis of the dynamics of the domestic non-government credit we took into consideration the lags existent in the monetary transmission mechanism and, therefore, in the propagation of the shock effects that appear in the case of some endogenous variables, by using an autoregressive form of the econometric equation (equation 1). Regarding the interest rates channel, we took into account the correlations between the monetary policy interest rate and the average commercial banks interest rates, respectively the average interest rates for loans in Ron granted on the interbank market (Robor) at different terms (one month, three months and twelve months). Given the double direction of the transmission channels, we performed Granger causality tests (Tables 2 and 3) to identify the direction and intensity of the causal relationship. The null hypothesis (H0) of no causal relationship was verified with F-test. The symbols and the meaning of the variables used in the econometric analysis are presented in Table 1.

Table 1

The variables of econometric model

CIN	The non-government domestic credit
M2	Intermediate money
RD_PM	The monetary policy interest rate
RDA	The average active interest rate applied by credit institutions
RDP	The average passive interest rate applied by credit institutions
ROBOR12M, ROBOR3M, ROBOR1M	(Romanian Interbank Offer Rate) The interest rate of deposits on the interbank market
IPC	The consumer price index

In order to ensure the consistency of the model and of the time series stationarity, the variables have been transformed into logarithms and we worked with first-order differences. Taking into account the main variables considered in the literature as being responsible for the dynamics of the non-government domestic credit, we used the following form:

$$\begin{aligned}
 DL_CIN = & C(1) + C(2)DL_M2 + C(3) DL_M2(-1) + \\
 & + C(4) RDA(-1) + C(5) RD_PM + C(6) RD_PM(-1) + \\
 & + C(7) DL_IPC + C(8) DL_IPC(-1)
 \end{aligned}
 \tag{1}$$

Data

The data used in the econometric analysis correspond to the period January 2005 - June 2011, with a monthly frequency (for the analysis of the non-government domestic credit growth and testing the causal relationship between the monetary policy interest rate and the average commercial banks interest rates) and a daily one (for the analysis of the causal relationship between Robor rates and the monetary policy interest rate). The econometric estimation was made for the period following 2005, as this was the year in which the NBR adopted the inflation targeting strategy. In order to test the time series stationarity, we used the ADF test (Augmented Dicky Fuller), and in the case of the first-order differences the results were positive.

Empirical results

Between January 2005 - June 2011, the non-government domestic credit increased more than four times (from less than 50 billion Ron to more than 200 billion Ron), outpacing the growth of the intermediate money in the second half of the interval (Figure 2).

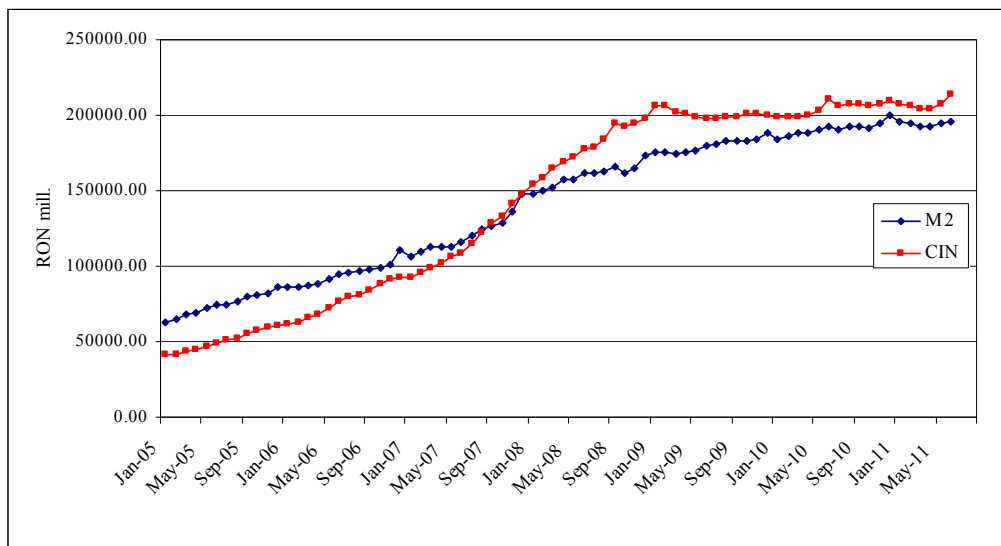


Figure 2. The evolution of the non-government domestic credit and of the intermediate money between January 2005-June 2011

The intermediate money variable is the only common influence factor in the literature that proved to be econometrically consistent in terms of the statistical data in the Romanian economy, and therefore, after successive tests, we chose the most consistent econometric estimation (the exogenous variables have to be restricted to the most significant group, thus avoiding the multicollinearity).

The econometric estimation:

$$DL_CIN = 0.0380 + 0.7183 DL_M2 + 0.3281 DL_M2(-1) - 0.0030 RDA(-1) \quad (2)$$

Considering the results, it is particularly interesting that the influence of the monetary policy interest rate is not significant and the average active interest rate applied by credit institutions has very little influence. This shows a chaotic development of the domestic non-government loans based on the excessive stimulation of the consumer credit. That means that NBR and other banks in the system adopted divergent positions:

- Private banks created pressure to relax lending conditions, speculating the increasing trend of the population income and developing a wide range of lending instruments.
- NBR has failed to hold back the enthusiasm of credit through the monetary policy interest rate (the econometric tests associated with this variable are not significant). The high value of the coefficient associated with broad money reveals that the growth of the non-government domestic credit was significantly supported by the monetary expansion as well.

These results made us to test the consistency of the interest rate channel. As it can be seen (Figure 3), there is a certain similarity between the dynamic forms of the monetary policy interest rate and the average active and passive interest rates of the banking system.

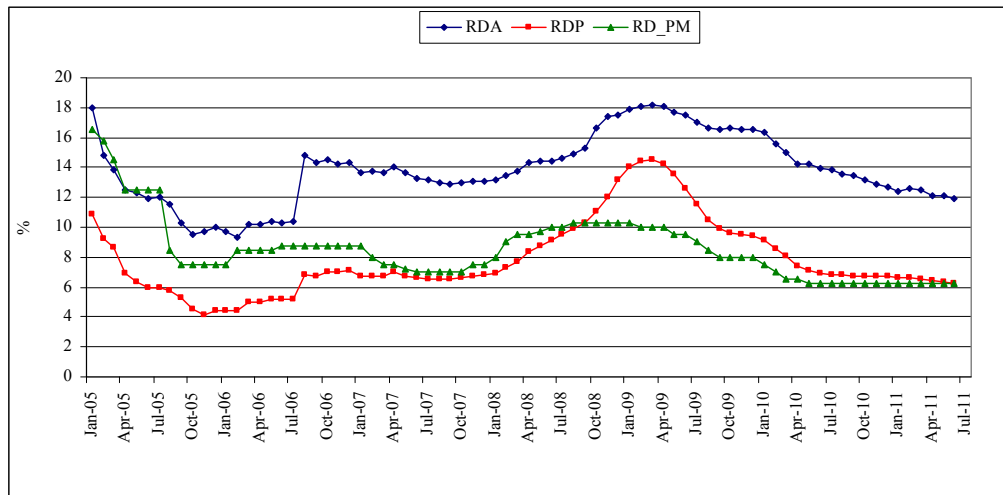


Figure 3. Monetary policy interest rate and the average interest rates applied by credit institutions

However, considering the dual direction of the causal interactions in such a transmission channel, we tested the mutual correlations between the monetary policy interest rate and the average interest rates on deposits and credits, applied by credit institutions, using the Granger causality tests (Table 2).

Table 2

The results of the Granger causality tests between the monetary policy interest rate and the average interest rates (active and passive) in the Romanian banking system

Null Hypothesis:	Obs	F-Statistic	Probability
RDA does not Granger Cause RD_PM	76	0.31949	0.72756
RD_PM does not Granger Cause RDA		5.03068	0.00905
RDP does not Granger Cause RD_PM	76	0.92170	0.40255
RD_PM does not Granger Cause RDP		2.98602	0.05687

It seems that the monetary policy interest rate does not determine (cause) the average interest rate on bank deposits. This proves the divergence of the credit policy of banks in the system in relation to the objectives of monetary policy. Instead, the average interest rate on bank deposits has a significant influence on the monetary policy interest rate, as a consequence of the reaction that the monetary authority has to the actions of the commercial banks. Similar results are also obtained in the case of the correlation between the monetary policy interest rate and the average interest rate on loans, with the only difference that the response of the NBR to the credit policy of the commercial

banks is much stronger (the null hypothesis is rejected with very high probability). This reveals the decision of the monetary authority to hold back the expansion of the non-government domestic credit. Thus, the results of previous studies in monetary economics are verified, results that highlight the lack of effectiveness of the monetary policy transmission through the interest rate channel on the real sector in Romania. The poor performance of this transmission channel may be caused by the inflexibility of the real sector regarding the monetary changes/shocks, as a result of the structural causes behind the economic development.

In order to get a more complete picture of the effectiveness of the interest rate channel we extended the analysis on the correlations between the monetary policy interest rate and the average interest rate for loans in lei (ron) granted on the interbank market (Robor) at different terms of one month, three months and one year.

The following graphics (Figures 4, 5 and 6) reveal that the ROBOR 1M-12M rates followed a descending trend starting with the third quarter of 2009, as the descending evolution of the interbank quotes is also reflected in the dynamics of the average interest rates on deposits and credits (they had a similar evolution – Figure 3).

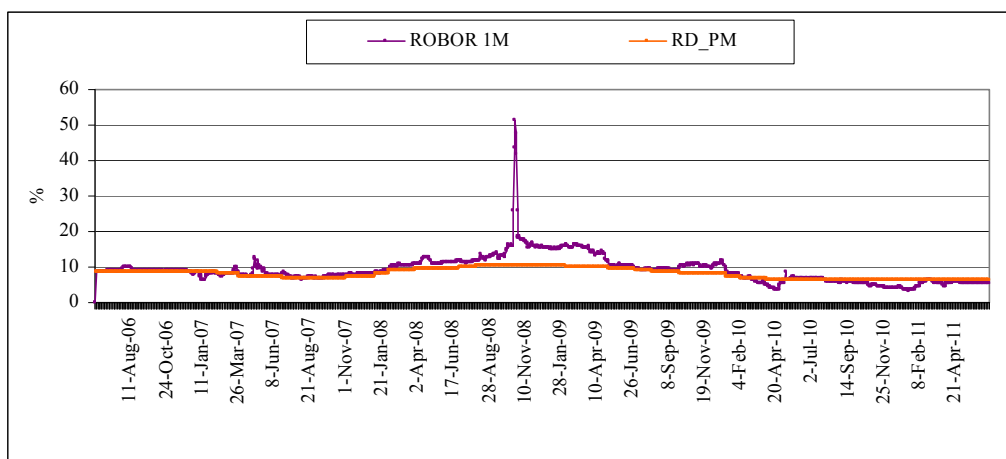


Figure 4. *Robor 1M and the monetary policy interest rate*

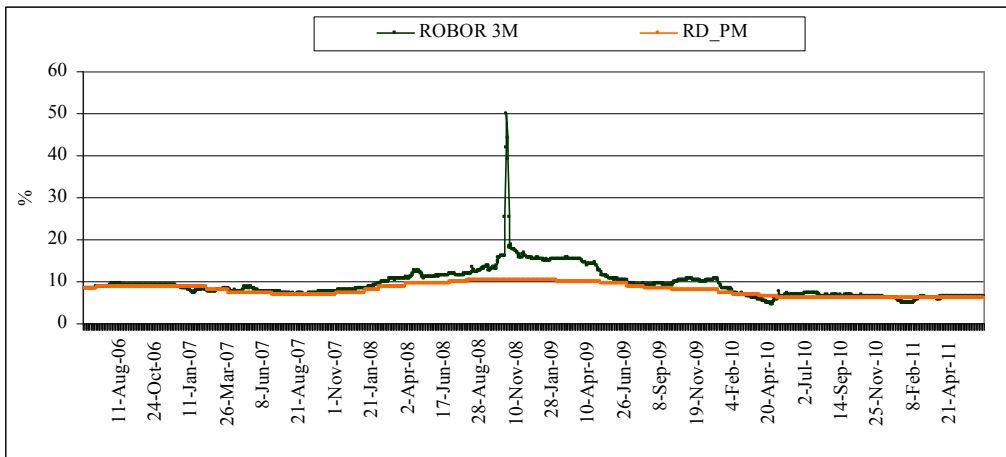


Figure 5. Robor 3M and the monetary policy interest rate

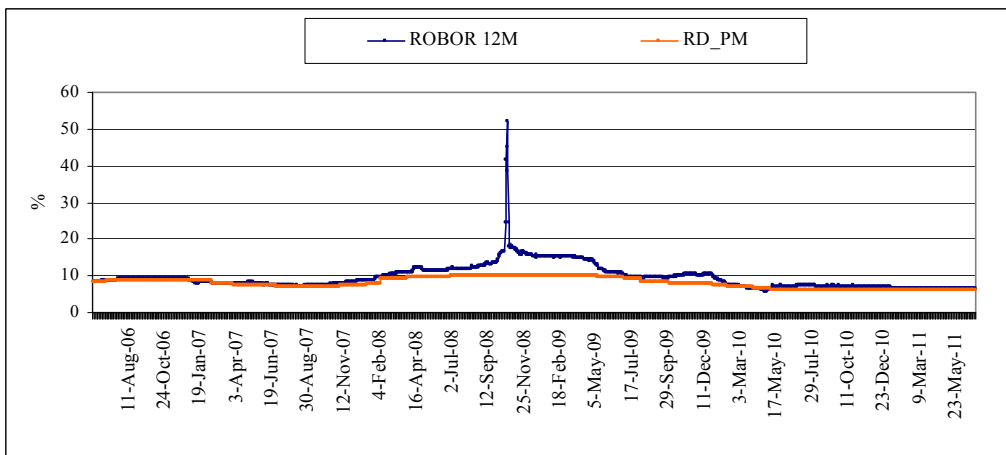


Figure 6. Robor 12M and the monetary policy interest rate

A particularity of the analysed time interval is the fact that it covers two periods: (i) a period of sustained economic expansion that begun in 2000, accompanied by a decrease of the interbank interest rates – due to a continuous process of disinflation and the downward trends of the risk premium and the nominal appreciation of the domestic currency, but also by the gradual intensification of competition in the banking sector (gaining market shares is one of the main objectives of the credit institutions); (ii) the second part of the

analysed period of time is characterized by an increasing trend of the interbank interest rates, which reflected deterioration of the inflation evolution under the influence of powerful economic and financial shocks on foreign and domestic markets and the subsequent rapid growth of the risk premium in the context of a deepening global financial and economic crisis and the accelerated spread of its effects on the Romanian economy. This was associated with a radical change in the behaviour of credit institutions, whose main objective became the management of the loan portfolio quality and the structure of balance sheets in general. At the end of the analysed period, the interbank yields showed a relative normalization, followed by a downward trend. There is a very sharp and sudden increase in the Robor rates between September-November 2008, as an attempt of the commercial banks to adopt a preventive protection against the effects of the global financial and economic crisis propagated in the Romanian economy. This episode ended with a determined intervention of the NBR, supported by the European Central Bank (ECB), which brought the dynamics of the Robor rates on a normal trend.

In the case of the Granger causality tests on the correlation between the monetary policy interest rate and the interbank interest rates (ROBOR 1M, ROBOR 3M, ROBOR 12M) similar results are obtained with significant nuances on different time dimensions of the interbank credit (Table 3).

Table 3

Granger Robor causality tests (1M, 3M, 12M) – the monetary policy interest rate

Null Hypothesis:	Obs	F-Statistic	Probability
ROBOR1M does not Granger Cause RD_PM	1294	0.49322	0.61077
RD_PM does not Granger Cause ROBOR1M		60.8183	5.8E-26
ROBOR3M does not Granger Cause RD_PM	1294	0.51530	0.59744
RD_PM does not Granger Cause ROBOR3M		57.7377	9.7E-25
ROBOR12M does not Granger Cause RD_PM	1294	0.42746	0.65226
RD_PM does not Granger Cause ROBOR12M		57.4768	1.2E-24

The results of the causality tests explain very well why the NBR had to turn to other instruments of monetary policy in order to hold back the expansion of the consumer credit (tighter credit conditions, improvement of the prudential banking regulations etc.).

Under these circumstances, the econometric equations that describe the correlations between the monetary policy interest rate and the average interest rates (active and passive), respectively the interbank interest rates (Robor) proved to be inconsistent in relation to the significance tests of the coefficients associated with the causal variables. Thus, the econometric analysis of the causal relationships between interest rates indicates a strong inertia of the

commercial banks that do not cooperate with the central bank in order to ensure the stability of the monetary market. Reasons for profit maximization aside, we believe that this is largely due to the fact that most commercial banks in Romania are subsidiaries of foreign banks and/or with a majority foreign capital, thus pursuing the objectives of other economic strategies, foreign to the interest of ensuring a financial and monetary stability of the Romanian economy.

Conclusions

Based on an increased economic boom, we have witnessed an unprecedented increase in lending during the last decade. The econometric analysis of the dynamics of the non-government domestic credit in the period January 2005-June 2011 revealed its chaotic development in Romania. The phenomenon was largely determined by the pressures exercised by the commercial banks to relax lending criteria mainly because of a fierce competition to increase market share. Furthermore, the monetary expansion (M2) sustained the accelerated growth of the non-government domestic credit as well.

Granger causality tests on the interest rates channel have shown a sustained effort of the NBR to hold back the credit expansion, but also a quasi-opacity of the commercial banks system that, more often than not, have ignored the signals sent by the monetary authority. We can assert that the ineffectiveness of the interest rates channel highlights the need for a strong local player (with domestic capital) on the monetary market in Romania, respectively the more hostile position rather than cooperating of the commercial banks with foreign capital that dominate this market. Far from having a hostile attitude towards the foreign capital in the Romanian monetary market, we believe that a balance between the foreign and the domestic capital is imperative, especially now that the global economic crisis does not seem to have come to an end and the international banking system is still recovering.

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