

# MONETARY POLICY EFFECTIVENESS IN STIMULATING THE CEES CREDIT RECOVERY

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## Abstract

This paper aims to appraise the effectiveness of central bank interest rate and quantitative easing measures in boosting private credit recovery from several CEE countries, after the crisis. We found that the monetary policy endeavors significantly succeeded in reducing the money market tensions following the external financial shock. The short-term interbank interest rate strongly responded to the changes in central bank refinancing rate and commercial bank reserves, in all of the analysed countries. Nevertheless, the subsequent links of the transmission chain did not perform as well. Uncertainty in the money market perpetuated a high term spread, while credit risk kept the lending rate at relative high values. The inability of central banks to further stimulate the credit supply put a question mark over the truly factual control of the decision makers on money creation by commercial banks and, consequently, on national economic activity on the whole.

**Keywords:** monetary transmission, credit supply, Eastern Europe

**JEL Classification:** E58, E52, E51

## 1. Introduction

Reviving lending activity is one of the main objectives towards which economic policy in the European countries has been focused, during the recessionary waves following the global crisis. Various empirical studies have explained how the tensions arising in the financial markets led, on the supply side, to a drastic decrease in credit availability, *i.e.*, a credit crunch. Subsequently, indebtedness of economic agents, low income, and negative expectations of business activity and profits further prevented the credit recovery - both on the

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supply and demand side - although the liquidity crisis came to an end. When commercial bank credit supply and potential borrower credit demand are both waiting for the real income revival, but the growth of the latter is subject to credit recovery, central banks have the difficult task of breaking the vicious circle. Such moments are opportunities to assess the effectiveness of monetary policy instruments and also to study the changes in the policy transmission mechanisms due to unprecedented developments of financial systems, financial innovations etc.

The European countries, notwithstanding that they did not constitute the epicenter of the global crisis, they were seriously affected and still experience its effects. All the more so since some of them - the emerging countries of Central and Eastern Europe (CEE) - were in the middle of a financial deepening process at the crisis onset. Such a financial development, characterized by the massive dependence on foreign capital, large current account deficits, excessive credit growth and over-indebtedness of economic agents, is by its very nature a source of economic instability. If we add a financial and trade shocks on this highly unstable economic background, we face a perfect storm indeed.

In these unfortunate circumstances, the CEE countries were “assured” the most drastic domestic product reduction in Europe. Their banking system was severely affected. It faced reserve reductions by cutting external funding together with depositor withdrawals, non-performing assets and capital depletion, along with solvency ratio deterioration. All these led to bank deleveraging, which added up to private sector deleveraging and generated a strong credit crunch. The Central Banks (CBs) have faced – especially on short term – strong currency depreciation pressures caused by net capital outflows, which required large scale spending of foreign reserves. Another challenge was searching for an optimum level of interest rate, high enough to discourage capital outflows, and sufficiently low not to deepen recession. Gradually, with the slowdown of external pressures, the main concern of the CBs became economic recovery in general and credit in particular.

The persistent attempts of the CBs to boost credit, both by policy rate cuts and by quantitative easing, have been shown to have a questionable effectiveness. The volume of new loans, although initially had increased, then stagnated, which prevented breaking the vicious circle formed by credit and the real economy. For this reason, we have proposed in this paper to analyze monetary policy transmission steps in the CEEs, from CBs to commercial banks and,

further, to the credit market. Identifying the weak link(s) of the monetary transmission mechanism (MTM) could be useful both theoretically and for policy makers. We begin by presenting the theoretical framework on monetary policy transmission and obstacles that may arise (section 2). Further, we empirically analyze this mechanism for a group of eight CEE countries in 2007-2013 (section 3). The fourth section summarizes the main findings of the study.

## 2. Theoretical survey

Theoretical and empirical studies on the effectiveness of MTM and determinants during the crisis are numerous and add up with a vast literature related to financial distress periods, already existing before. According to the old “recipes” for the revival of the economy in descending phases – provided over time by economists as I. Fisher, M. Friedman or B. Bernanke -, recession could be stopped by reflating the economy through interest rate adjustment and quantitative easing measures. The new realities after the crisis, though, show us that pursuing this goal has become a difficult task. As Gambacorta and Marques-Ibanez (2011, p.1) noticed, “*the whole monetary transmission mechanism has changed as a result of deregulation, financial innovation and the increasing role of institutional investors*”. Mora (2014, p.112) found that, for the US case, the monetary policy “*pass-through has been significantly weaker since year-end 2008 than during previous period*”. Kouretas *et al.* (2014, p.36) also consider that the MTM channels in the Euroarea, USA and UK “*altered and distorted significantly. As a result, the conventional monetary policy become ineffective*”. For the CEEs, the literature on the MTM during the crisis is rather scarce. In a previous study (Olteanu, 2012, pp. 8-9) we found a poor performance of monetary conditions in predicting the GDP evolution in Romania during the 2008-2010 period. Also Lyziak *et al.* (2011, p.94) noticed a “*significant drop in the overall monetary policy effectiveness*” in Poland, after the crisis. Regarding to the credit stimulation only, Kara (2012, p.19) reached the opposite conclusion in case of Turkey: “*the CBT has been able to affect ... credit growth ... in the desired direction*”.

Bouis *et al.* (2013, pp.7-15) found that the various policy instruments “*could have boosted GDP*” in the OECD countries much more than they have actually done, and this happened because of four factors: (i) a potential decline in the natural real interest rate; (ii) a reduced effect of policy measures on credit cost and asset prices; (iii) the impact of deteriorated balance sheets on both credit supply and

credit demand; (iv) a sharp increase in saving rates, due to uncertainty. These phenomena are related both to the traditional interest rate channel - which concerns the effect of policy rate on demand (investment and consumption) - and to the non-neoclassic narrow/broad bank lending channel (Boivin *et. al.*, 2010, pp. 15-22), related to the capacity of MTM to influence the supply of credit. Since the output recovery was strongly related to the credit rebound, this channel has become one of the main concerns of the policy makers, all the more so as stimulating credit had been proved to be a challenging task during recessions.

Various factors interfere with the monetary transmission through bank lending. First, we have the mainstream view represented by Mishkin (2010, p.7) who considers that financial instability occurs only when the shocks to the financial system interferes with asymmetric information, so that the financial system cannot carry out its mission of channeling funds for productive investment opportunities. Second, as Leonardo Gambacorta put it in a discussion organized by the European Research Group on Money, Banking and Finance, "*the bank lending channel had changed a great deal over the last 20 or 30 years*" (GdRE, 2013). In this regard, Romer and Romer (1990, p.12) noticed that "*developments in financial markets ... allow banks to be less dependent on reservable deposits to found their lending*". Third, Gambacorta and Marquez-Ibanez (2011) investigated the business model of over 1,000 banks from the EU and the US during 1999-2009 period and found that many structural factors have had interfered with bank credit supply: high amount of short-term funding and securitization activity, high proportion of non-interest income activities, low capital endowment. However, they did "*not detect significant changes in the average impact of monetary policy on bank lending during the period of the financial crisis*" (*ibidem*, p.2).

Finally, although the MTM is successful in accelerating the credit supply, this may be ineffective for stimulating growth if the credit flow is directed - as before the crisis in developed countries - towards non-productive investments (financial assets, real estate etc.). At the same time, the role of banks is crucial as they may direct the liquidities towards the credit market, which will feed the real economy, but they may also invest it in governmental bonds, deposits with the CB, or other risk-free assets. For example, Cecchetti (2010, p.10) was quick to predict a rebound in capital inflows that would revive easy access to credit in emerging markets, but he mentioned

that “a high share of inflows could end up in sovereign bond and bank credit to the government”, not to the non-financial corporate sector.

The short-term interest rate remains the main tool of monetary policy. Since the money creation mechanism had acquired an endogenous character - being determined by the economic activity level - CBs gradually gave up targeting the money supply and shifted to targeting the short-term interest rate, as a mechanism for controlling inflation (Keen, 2009). Subsequently, the failure of conventional policy measures to stimulate lending has given rise to the need for quantitative relaxation, as Croitoru (2013) stated. In the following empirical analysis we deal with the effectiveness of both lowering interest rate and quantitative easing policy measures used by the CBs in the CEE countries.

### 3. Empirical evidence

Since data on countries' tools of monetary policy are available only for non-euro countries, we confine our analysis to eight non-euro (until 2013) CEE countries: Romania, Bulgaria, the Czech Republic, Poland, Hungary, Latvia, Lithuania and Turkey. In order to assess the monetary policy, we study the dynamics of six indicators:

- refinancing rate of the central banks (%);
- one-day interbank interest rates (%);
- twelve-month interbank interest rates (%);
- lending rate, *i.e.*, interest rate for new loans granted to the private sector (households and non-financial corporations<sup>1</sup>) in national currency (%);
- reserves of the commercial banks (deposits with the CB plus available cash in bank vaults), expressed in national currency;
- credit stock to the private sector issued in national currency, expressed in national currency.

We choose to use the credit issued in national currency only, both for simplifying calculations and for the fact that foreign currency loans substantially rely on an exogenous element, which is the foreign capital inflows. Also, we consider that this component of credit should be stimulated, just as the CEE central bank policy decisions have already proved.

The interest rate set by the central banks for refinancing operations, along with the cash provided to commercial banks are the main tools for credit stimulation. The liquidities injected by the CB are

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<sup>1</sup> In some countries, non-financial corporations also include the public ones, so that private credit figures have a small public component.

reflected in the bank reserves, consisting of deposits with the CB and vault cash. On the other side, the interest on open market operations is reflected in the interbank rates. Further, the effect of the two policy tools on private credit volume is affected, on *the supply* side, by the commercial banks' interference, through the interest rate on granted loans, besides the eligibility requirements. In this respect, Brown *et al.* (2012), when analyzing the Eastern European credit market, conclude that companies are affected by the high interest rates, high requirements for obtaining credit (including collateral), and slow loan-granting procedures. *The demand* equally plays an important role in accelerating credit, though it is not the topic of this paper. When commercial bank interest rate diminution is not reflected in the growing amount of new loans, the credit demand is usually the impeding factor.

We use quarterly data for the 2007-2013 period. The data sources are the following: for the refinancing rate and the interbank rates - Eurostat and the CB websites; for the interest rate on credit to the private sector<sup>2</sup>, the bank reserves, and the credit stock - CB websites. Since credit stock and bank reserve series are non-stationary and include seasonal variation, we use year-on-year growth rates instead of levels. We prefer a narrative analysis to the econometrical alternative, due to the relative short analysed period and to the many qualitative factors involved in the studied issues.

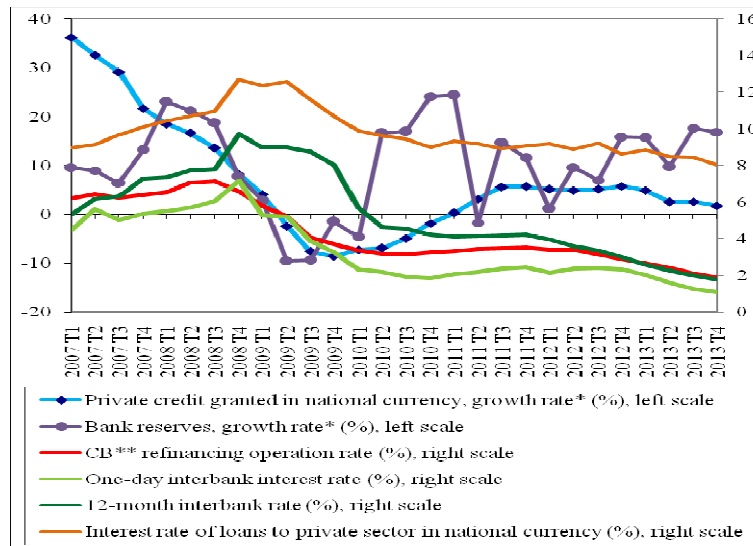
In the next figure we present the average of the CEE countries for each of the six variables mentioned above. The average of bank reserves except Romania, due to the lack of data; as for Bulgaria, the banks' reserves include only the deposits with the CB, for the same reason. In Annex 2 we present separate graphs for each country.

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<sup>2</sup> In Annex 1, we detail the calculation of the lending rate to private sector, which is compiled from interest rates on various types of credit granted to households and non-financial corporations. Since the data were provided by the national bank websites, the indicators used for aggregation are country-specific, so that such detailing is necessary.

Figure 1

Interest rates, bank reserves and credit recovery in CEE



Source: own calculations, based on data from Eurostat Interest Rates and from the national bank websites.

\* compared to the same quarter of the previous year; \*\* Central Bank.  
 Note: The figures represent simple averages of the analysed CEE countries, except for Turkey due to the extreme values for credit growth and interest rates.

First, we notice that, between 2007 and 2010, the diminution by over 30 percentage points (p.p.) in the average credit growth rate induced a considerable reduction, by 4 p.p., in the average CB refinancing interest rate, beginning in the mid 2008. The country difference in the size of these adjustments is considerable (see annex 2). It is caused by the various country-specific structural issues at the beginning of the crisis (current account deficit, structural problems of the banking sector, over-lending etc.). For example, in 2008, Bulgaria and the Baltics set pegged exchange rates against the euro.

Therefore, the depreciation tendencies - caused by capital outflow - did not allow for substantial cuts in the interest rate, which would have amplified the pressure on the exchange rate. For this reason, in Latvia for instance, a negative adjustment of over 50 p.p. in

the credit growth rate corresponds with a reduction of only 2.5 p.p. of refinancing interest. By comparison, in Romania, the 50 p.p. increase of credit growth rate imposed a cut by 8 p.p. of the refinancing interest rate. Of course, the changes in the interest rate charged by the CBs are related to the price evolution in each country. Turkey is an illustrative example in this respect; inflation drop from 10.9% per year in Q4.2008 to 5.7% in Q4.2009 required a significant change of the interest rate (-10 p.p.), although the credit decline was insignificant, relative to the other countries.

Further, the graph above and the ones in Annex 2 show a strong impact of the lower interest charged by the CBs on the average money market interest rate. After a crisis-induced hike culminating with a peak in Q4.2008, the one-day interbank rate sharply declined; this trend occurred in all of the analysed countries. On the other side, the average 12-month rate was more hesitant to follow the average short term rate, in most of the countries. Between Q1-Q4.2009 the sluggish decrease of the 12-month rate – relative to the one-day rate – had generated high term spreads which, though slowly diminished, persisted until the end of 2012. Taylor and Williams (2008, pp. 5-7) put the high term spread in the aftermath of the crisis on two distinctive factors which are usually associated with financial distress periods: the counterparty default risk in the interbank lending market, along with the lending bank's liquidity risk. Moreover, Eisenschmidt and Tapking (2009, p. 2) explain that, because of the liquidity risk, banks seldom trade on long term and the statistics on the interbank long-term rates did not really reflect the actual rates, but rather the *ask* rates, *i.e.*, the rates at which the banks were *willing* to lend. Bulgaria, Latvia and Lithuania are typical examples of countries where the banking system showed an excessive precautionary behaviour adopted in response to the two mentioned types of risk.

In the long run, expectations of future short-term interest rate use to be the main determinant of long-term rate. A high term spread reveals positive expectations regarding the course of the business cycle because the central bank is supposed to raise the policy rate in response to an overheated economy. But this is not always the case. As Krugman (2010) remarked for the US, the short-term rate has been expected to increase not necessary because of positive economic outlook, but because there was not much room to decrease. Indeed, graphs in Annex 2 reveal that in Bulgaria and the two Baltics, the nominal overnight interbank rate dropped to almost zero, so that it could not have been expected to diminish anymore.



However, a term spread above 2 p.p. - as we can see in Bulgaria, Romania and the Baltics – might suggest that part of it is still due to expectations of economic upswing.

The decline in the average interbank interest was further reflected in the average lending rate, although the effect was not proportional. Figure 1 reveals that, until the end of 2009, term spread raised to more than half of the spread between short-term interbank rate and lending rate. Afterward, the term spread slowly decreased, but the ascending credit risk premium compensated for. The “*abrupt rediscovery of credit risk*” (IMF, 2011, p. 10) became the second cause which hindered the credit supply, after the money market risks described above. Consequently, the difference between the one-day rate and the credit rate persisted.

Bulgaria shows the weakest response of lending rate; although it had a downward trend, the spread against the interbank rate strongly increased starting with the end of 2008; further, the spread began to decrease but very slowly, from the reasons mentioned above. On contrary, in Poland, although the difference between the two indicators increased initially (2009-2010), it returned at the end of the 2011 to pre-crisis values. In the other countries, the difference remained, during the recession period, above that existing before 2009.

By the end of 2009, the decline in the average interest rate charged by the CBs could not stop the drop in the average credit growth rate, although the effect on lending rate was noticeable. An essential factor of this dynamics was the downward evolution of the bank reserves in each country, which added up to the money market risks. The average reserve rate fell sharply during the acute period of the crisis (2008-2009) and took on negative values, for several reasons: because of the insufficiently sterilized currency interventions of the CBs, aiming to defend the exchange rate; because of diminishing deposits, especially term deposits and foreign currency deposits; because of possible migration of excess reserves from eastern European branches to the distressed western headquarters.

Beside the simple bank reserve plummet, some countries like the Baltic ones faced severe banking crises, restructurings, takeovers etc., which prolonged the credit downturn. Starting in 2009 on the average (earlier in the Baltics), the credit in some CEE countries had faced negative rates for a significant period of time: 14 quarters in Latvia, 13 quarters in Lithuania, 12 quarters in Bulgaria, 7 quarters in Romania, and 5 quarters in Hungary. Our figures show that only the

Czech Rep., Poland and Turkey avoided negative quarterly rates (as compared to the previous year) over the analysed period.

We may consider that, earlier (2008-2009), the problems of the banking system –scarcity of liquidities and counterparty default risk – turned the credit crunch into the main cause of the decreasing credit stock. Starting with 2010, the mitigation of the liquidity crisis in the interbank market, along with the return of the bank reserves to a rising trend, stopped the decline of the average credit growth rate (except for the Baltics). At the beginning of 2011 the average credit rate became positive, but its ascending trend only lasts up to Q3.2011, when a ceiling of around 5% was reached.

The major potential causes which obstructed the lending activity were the following: first, the plunging incomes and asset prices deteriorated the balance sheet of households and companies and limited the volume of new loans (the broad credit channel). Second, ascending credit risk offset the effect of decreasing tensions in the money market and kept the lending rate at relative high values. Third, as Brown, M. *et al.* (2012) revealed, credit decline in the CEE countries was due, among others, to the drastically tight collateral requirements and lending standards. Fourth, the endogenous part of credit dynamics - the demand from the private sector – had been waiting for a strong recovery of incomes (real economy) and it might have become the major hindering factor for credit recovery. Thereby, the vicious circle credit-output has hampered the revival of both indicators.

Further, a new decline of credit rate began in 2013, despite that subsequent adjustment of the refinancing rate had already started at the end of 2012, and that the bank reserve rate was rising. The effect of policy rate on credit growth remained insignificant, though there were major differences among countries. For example, Bulgaria and, especially, Turkey, succeeded in 2013 to keep a rising trend and positive credit growth rates. On the other hand, Latvia resumes negative rates. In general, we may say that, in most of the considered countries, neither the CB interest rate adjustment nor the injected liquidities could produce the expected effect of credit stimulation until the end of considered period. This might not necessarily mean that the policy rate has no longer been effective, but that a prolonged period of lower interest was needed for the credit to respond, as it happened in 2010-2011. Also, credit demand is supposed to have played a major role in this dynamics, as before.

#### **4. Conclusion**

We may consider that, after the acute stage of the crisis (2008-2009), the monetary policy endeavors in stimulating the CEE credit rebound was significantly effective. By “effective” we mean that they succeeded in reducing the money market tensions following the external financial shock. The short-term interbank interest rates strongly responded to the changes in CBs refinancing rates and commercial bank reserves, in all of the analysed countries.

Nevertheless, the subsequent links of the transmission chain did not perform as well, but this was not the CBs’ fault. Uncertainty in the money market perpetuated high term spread up to the end of 2010, and credit risk kept the lending rate at relative high values. Also, the private sector low demand - due to low incomes and shrinking asset values – and drastically tight collateral requirements and lending standards further prevented credit to recover.

The inability of the CBs to deal with the above issues put a question mark over the capacity of the decision makers to manage the national economy anymore. The real question is not whether the monetary policy has been effective or not, but whether the national banks are still truly in charge. Without a real control of the CBs on the money creation by commercial banks, the CEE lending and economic activity on the whole have become exogenous variables. Moreover, these countries are candidates for the Eurozone membership, which will involve losing the remaining monetary autonomy (interest rate and exchange rate). All these restraints, along with the capital account liberalization, will throw the stability of this group of economies at the mercy of foreign-owned banking system and international money masters.

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## ANNEX 1

### **Methodological notes on the interest rate for loans to the private sector, and the source of statistical data**

The interest rate for loans granted to the private sector was calculated by aggregating the interest rates on different types of loans granted to non-financial corporations and households. Data were taken from the national bank websites, so that the indicators used in the aggregation process are different from country to country, as follows:

- Romania - the average of the interest rates on loans granted in national currency to non-financial corporations and to households, *unweighted*, due to the lack of data on the volume of new loans. Data source: <http://www.bnr.ro/Baza-de-date-interactiva-604.aspx>.
- Bulgaria – the average of the interest rates on loans granted in national currency to non-financial corporations and to households (for consumption, for house purchases and other destinations), weighted by the volume of new loans. Data source: <http://bnb.bg/Statistics/index.htm>.
- The Czech Republic - the average of the interest rates on loans granted in national currency to non-financial corporations, to households, and to non-profit institutions serving households, weighted by the volume of new loans. Data source: <https://www.cnb.cz/en/statistics/>.
- Poland - the average of the interest rates on loans granted in national currency to non-financial corporations and to households, weighted by the volume of new loans. Data source: <http://www.nbp.pl/homen.aspx?f=/en/statystyka/oproc/oproc.html>.
- Hungary - the average of the interest rates on loans granted in national currency to non-financial corporations (repos, bank overdrafts, and other loans) and to households (repos, bank overdrafts, loans for consumption, loans for house purchase, loans for other purposes), weighted by the volume of new loans. Data source: [http://english.mnb.hu/Statisztika/data-and-information/mnben\\_statisztikai\\_idosorok](http://english.mnb.hu/Statisztika/data-and-information/mnben_statisztikai_idosorok).
- Latvia - the average of the interest rates on loans granted in national currency to non-financial corporations (overdraft credit, revolving credit, extended credit card credit, loans up to 0.25 million euro, loans over 0.25 million euro and up to 1 million euro,

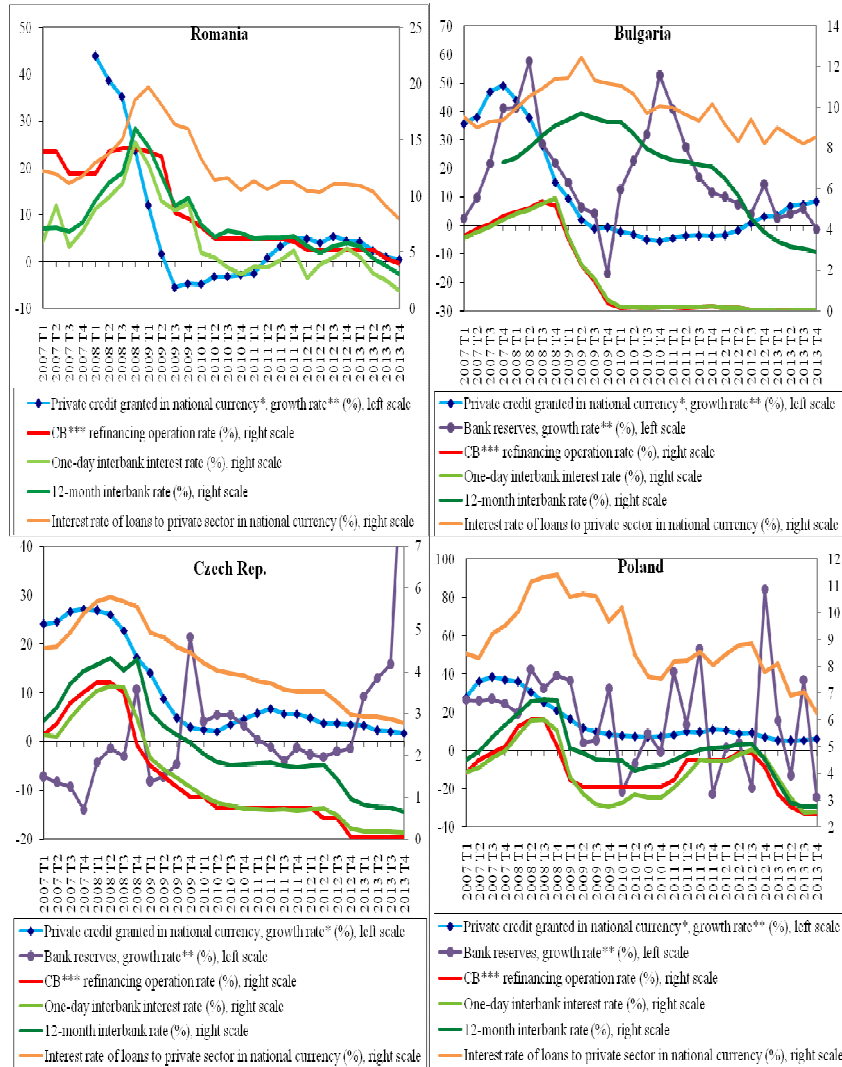
loans over 1 million euro) and to households (overdraft credit, revolving credit, extended credit card credit, loans for house purchase, consumer loans, other loans), *unweighted*, due to the lack of data on the volume of new loans. Data source: <http://www.bank.lv/en/statistics/data-room/main-indicators/mfi-balance-sheet-and-monetary-statistics-data-until-december-2013>.

- Lithuania - the average of the interest rates on loans granted in national currency to non-financial corporations and to households, weighted by the volume of new loans. Data source: [http://www.lb.lt/monetary\\_financial\\_institutions\\_loans\\_and\\_deposits\\_statistics](http://www.lb.lt/monetary_financial_institutions_loans_and_deposits_statistics).

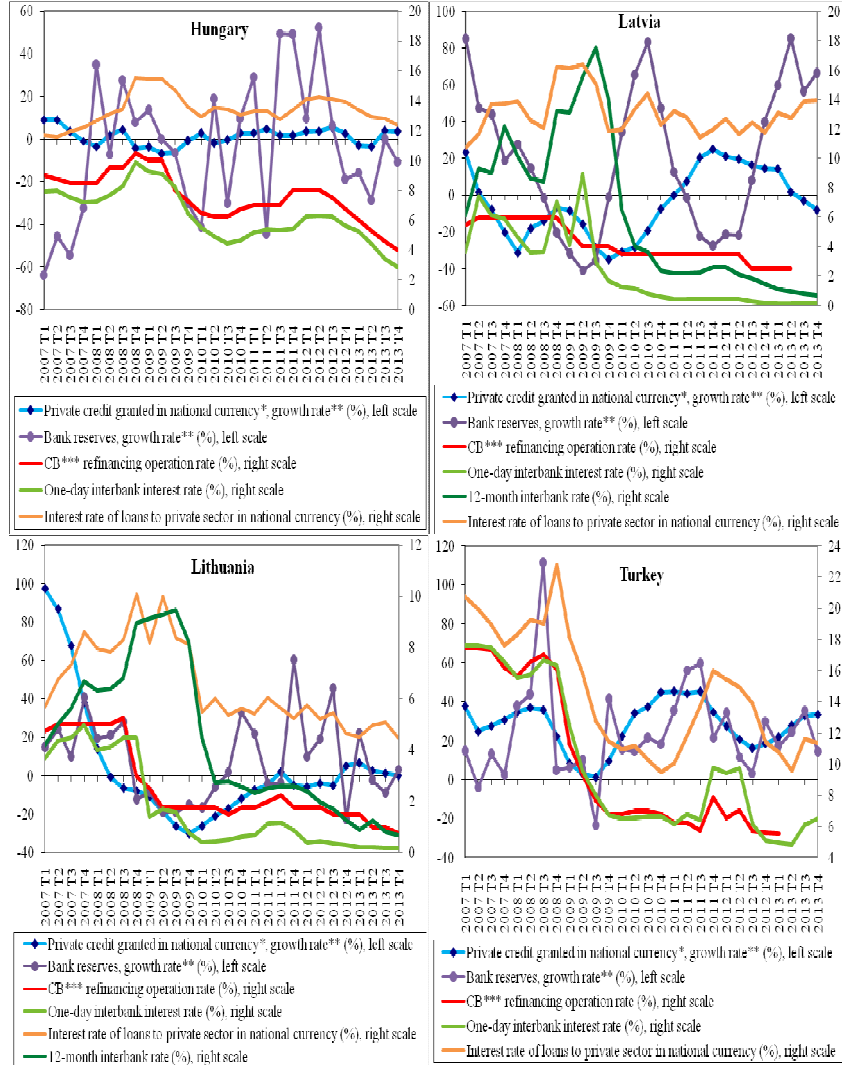
- Turkey - the average of the interest rates on business loans granted in national currency and the interest rate on consumption loans granted in national currency (personal, vehicle and housing loans), *unweighted*, due to the lack of data on the volume of new loans. Data source: [http://evds.tcmb.gov.tr/index\\_en.html](http://evds.tcmb.gov.tr/index_en.html).

ANNEX 2

Interest rates, bank reserves and credit recovery in CEE







\* Except for Turkey, for which we used the total credit, due to the lack of data;

\*\* compared to the same quarter of the previous year; \*\*\* Central Bank.

Source: own calculations, based on data from Eurostat Interest Rates and from the national bank websites.