

# THE FEATURES OF CREDIT INSTITUTIONS REFINANCING IN THE RUSSIAN FEDERATION DURING THE CRISIS

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## ABSTRACT

*The article analyses the dependence between the policy of interaction between the banking and real sectors of the economy and the volume of unsecured refinancing funds received by the credit institutions from the Bank of Russia during the banking system crisis using the data from the largest banks in the country. The relationship between the amount of funds received by the credit institutions and the policy of cooperation with the real sector and the population in the area of raising funds and allocation of resources of different maturities was revealed. The analysis was performed during the period of the global financial crisis in 2008-2010. The conclusions of the study reveal weaknesses in the Bank of Russia refinancing system during the crisis of 2008 and allow using this experience in current economic crisis.*

**Key Words:** *Interaction between the Banking and Real Sectors of the Economy, the Bank of Russia Refinancing, Liquidity Crisis, Correlation Analysis, Liquidity Ratios*

## INTRODUCTION

In order to identify the main policy of interaction between banks, the real sector of the economy and the population during the crisis, the research about resource allocation of credit institutions, which have shown high activity in receiving the funds from the refinancing procedure of the Bank of Russia in 2008, was conducted. Introduced as part of anti-crisis measures from the Bank of Russia unsecured loans were provided under the Federal Law № 171 - FZ, dated October 13, 2008 "On Amendments to Article 46 of the Federal Law "About the Central Bank of the Russian Federation (Bank of Russia)" and according to the regulations of the Bank of Russia on October 16, 2008 №323-P "On the provision of unsecured loans by the Bank of Russia to Russian credit institutions".

This article will attempt to determine the reasons of the failure of the Bank of Russia measures to support the real sector of the economy and the population during the crisis through the financing of the banking system.

## METHOD

Correlation analysis as the main research method was conducted. The method allows determining the relationship and its degree between the studied variables. The formula for calculating the Pearson correlation coefficient as follows:

$$r_{xy} = \frac{\sum(x_i - \bar{x}) * (y_i - \bar{y})}{\sqrt{\sum(x_i - \bar{x}) * \sum(y_i - \bar{y}) * (n - 1)}}$$

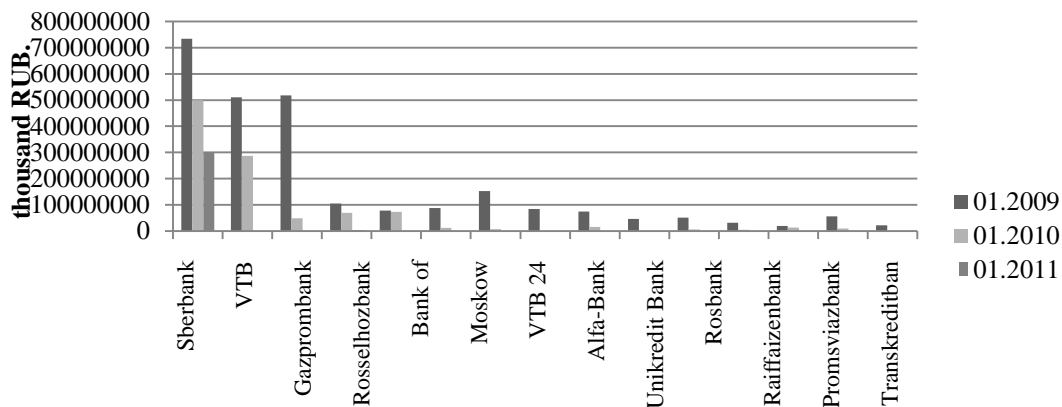
Where  $x_i$  – value of variable  $x$ ,  $y_i$  – value of variable  $y$ ,  $\bar{x}$  – arithmetic mean of variable  $x$ ,  $\bar{y}$  – arithmetic mean of variable  $y$ .

Coefficient varies from -1 to 1; the correlation degree is determined by Cheddok scale.

### RESULT

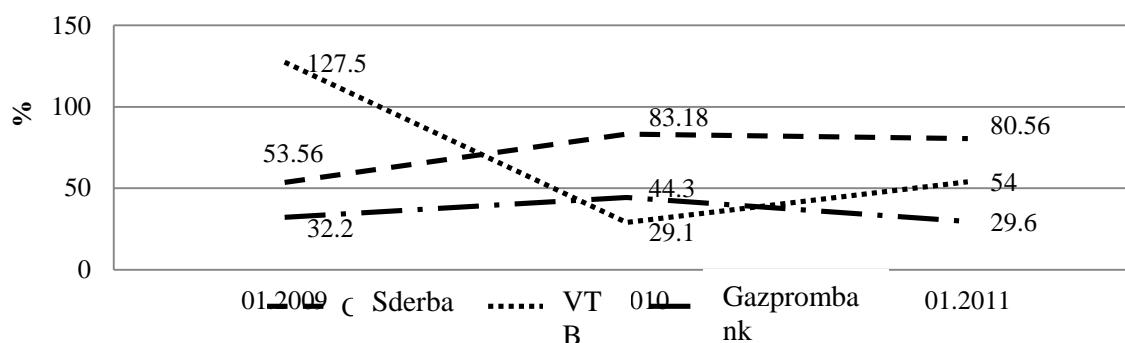
The greatest interest to the unsecured auction was shown by such credit institutions as "Sberbank of Russia", JSC "VTB Bank" and OJSC "Gazprombank", which in November 2008 attracted 80% of the unsecured refinancing of the Bank of Russia (Fig. 1). These are backbone banks in the Russian financial system, which attract the biggest share of deposits and also support the individuals and real sector of the economy.

**Figure 1**  
**DYNAMICS OF UNSECURED LOANS OF THE BANK OF RUSSIA IN THE LIABILITIES OF CREDIT INSTITUTIONS**



In this context the study of liquidity ratios dynamics and interaction between these banks with the real economy becomes relevant. Since in 2008-2010 one of the most used methods of determining the level of liquidity of credit institutions were liquidity ratios of the Bank of Russia, such indicators as instant, medium and long-term liquidity ratios and volume of loans and deposits to individuals and legal entities by maturity will be discussed in more detail.

**Figure 2**  
**DYNAMICS OF INSTANT LIQUIDITY RATIOS CHANGE**



Instant liquidity ratio of such credit institutions as Sberbank and Gazprombank during the period from 01.01.2009 to 01.01.2010 shows a positive trend, while the VTB Bank experienced a sharp decline, which was replaced by a significant increase on 01.01.2011.

If we consider the correlation analysis of the impact of Bank of Russia loans to certain performance indicators and instant liquidity ratios of studied credit institutions, it may be noted that the highest correlation of the selected indicators visible for Sberbank of Russia, followed by VTB and Gazprombank.

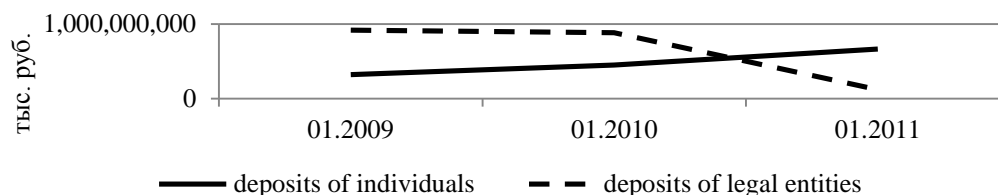
Instant liquidity ratio of Sberbank of Russia has the highest correlation with the volume of loans taken from the Bank of Russia, but this relationship is negative (-0.85), which suggests increase of the Instant liquidity ratio while reducing the volume of unsecured lending (Table 1). It should be noted that the return of the amounts of this type of refinancing increases the activity of credit transactions on the accounts as a whole and deposit transactions on the accounts of individuals.

**Table 1**  
**CORRELATION ANALYSIS OF THE IMPACT OF BANK OF RUSSIA LOANS ON SHORT-TERM INDICATORS OF CREDIT INSTITUTIONS**

	Sberbank	VTB Bank	Gazprombank
Credits to individuals	-0,504255457	-0,753176789	-0,722886398
Credits to legal entities	-0,990672199	0,826291619	0,944543042
Deposits of individuals	-0,981956462	0,881226553	-0,789811522
Deposits of legal entities	0,86217133	-0,666939065	-0,618090712
Instant liquidity ratio	-0,847631975	0,666278773	-0,267562692

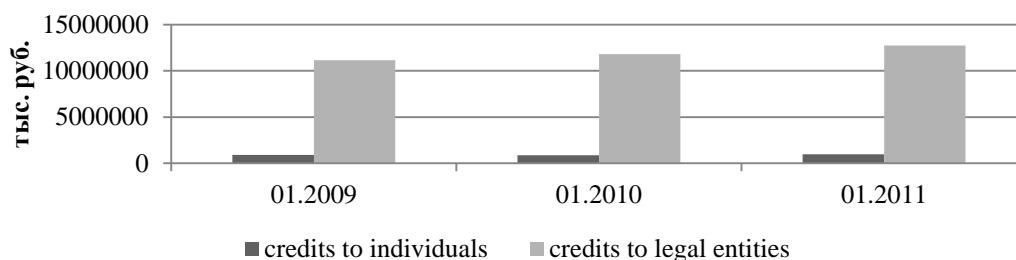
In our opinion, this happened due to the fact that the return of the funds received from the Bank of Russia leads to the need of credit organizations to replace these funds with other types of borrowed resources. That means the increase of the volume of deposits on the accounts of individuals (- 0.98) by increasing the attractiveness of payroll and other projects. However, the funds in the accounts of legal entities have a reverse trend (0.86) (Figure 3).

**Figure 3**  
**THE DYNAMICS OF DEMAND DEPOSITS OF SBERBANK OF RUSSIA BY THE TYPE OF CUSTOMER**



At the same time, the need for placement of attracted funds is increasing, therefore the volume of lending to legal entities (-0.99) and individuals (-0.5) is increasing also (Figure 4).

**Figure 4**  
**OVERDRAFT DYNAMICS OF SBERBANK OF RUSSIA BY TYPE OF CUSTOMER**



The opposite situation is observed in terms of short-term activities of VTB Bank. Here the Instant liquidity ratio ratio has a less strong and positive relationship with the amount of unsecured lending by the Bank of Russia (0.67), which indicates a certain degree of dependence of the bank regarding short-term activities from refinancing during the global financial crisis. So, with a reduction of attracted funds from the Central Bank of the Russian Federation, VTB Bank is reducing the volume of overdraft to legal entities (0.83), at the same time reducing dynamics of raising funds in the accounts of individuals (0.88) and increasing the volume of deposits of legal entities (-0.67).

**Table 2**  
**DYNAMICS OF INDICATORS OF SHORT-TERM PERFORMANCE OF VTB BANK**  
 Thousand rubles

Indicator	Credits to individuals	Credits to legal entities	Deposits of individuals	Deposits of legal entities
01.2009	779	7 921 325	5 945 262	124 860 041
01.2010	605	348 009	2 291 469	317 426 685
01.2011	1 244	370 122	1 825 628	268 857 708

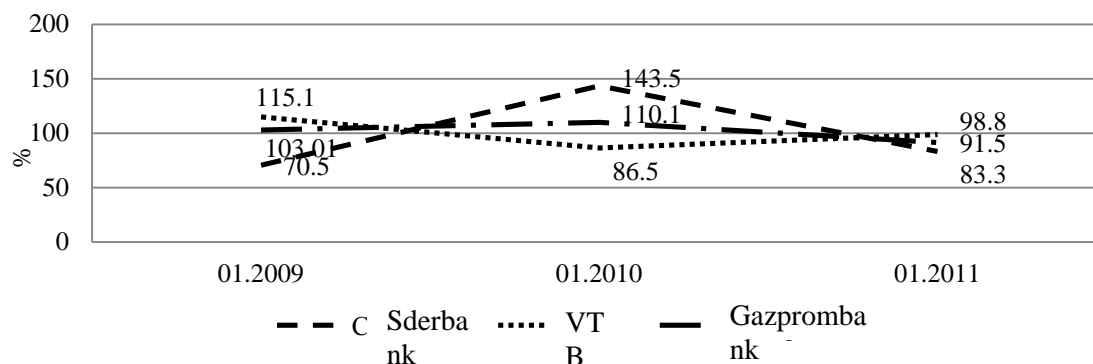
On January 1, 2010, in terms of overdraft to legal entities of VTB Bank, a sharp decline from 7.9 trillion rubles up to 348 billion rubles was observed, and on January 1, 2011, this indicator increased slightly to 370 billion rubles. We can conclude that the credit institution

increased its volumes of commitments at a relatively low level of assets in this category. And in times of crisis a short-term corporate lending was mainly done at the expense of the Bank of Russia refinancing, which further led to a sharp drop in instant liquidity ratio during their return.

It should be noted that in Gazprombank the correlation between the Instant liquidity ratio and the amount of funds received from the Bank of Russia is absent, since the coefficient is -0.27, respectively, this resource is not used in the short-term activities of Gazprombank. Thus, analysis of the relationship between these parameters is inappropriate.

With regard to current liquidity ratio (N3), Fig. 5 shows that the greatest dynamics is observed for Sberbank of Russia, but on 01.01.2011 the performance of all three banks account is about 90%.

**Figure 5**  
**DYNAMICS OF CURRENT LIQUIDITY RATIOS CHANGE**



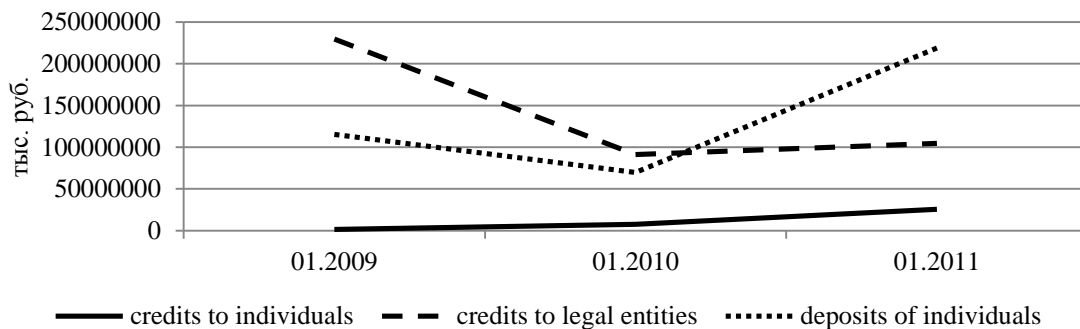
The current liquidity ratio of Sberbank of Russia, as well as Instant liquidity ratio, shows a negative correlation (-0.74), indicating the decrease in the dynamics and current types of operations against the backdrop of fundraising of the Bank of Russia. Negative impact on the level of -0.84 is also revealed in Gazprombank. VTB Bank is not considered, since it has a marginal relationship with the analyzed parameters (Table 3).

**Table 3**  
**CORRELATION ANALYSIS OF THE IMPACT OF LOANS FROM THE BANK OF RUSSIA ON THE CURRENT ACTIVITIES OF CREDIT INSTITUTIONS**

	Sberbank	VTB Bank	Gazprombank
Credits to individuals	-0,949376649	0	0,051058636
Credits to legal entities	0,843072381	-0,767701803	0,907182204
Deposits of individuals	-0,644550732	0,999999441	-0,037221055
Deposits of legal entities	0,497454973	-0,716977192	-0,193917747
Current liquidity ratio	-0,735437277	0,52299815	-0,838460406

According to Sberbank it may be noted that the funds of the Bank of Russia on the current operations were aimed at corporate lending (0.84), while loans to individuals were suspended, and the amount of their deposits decreased (Fig. 6).

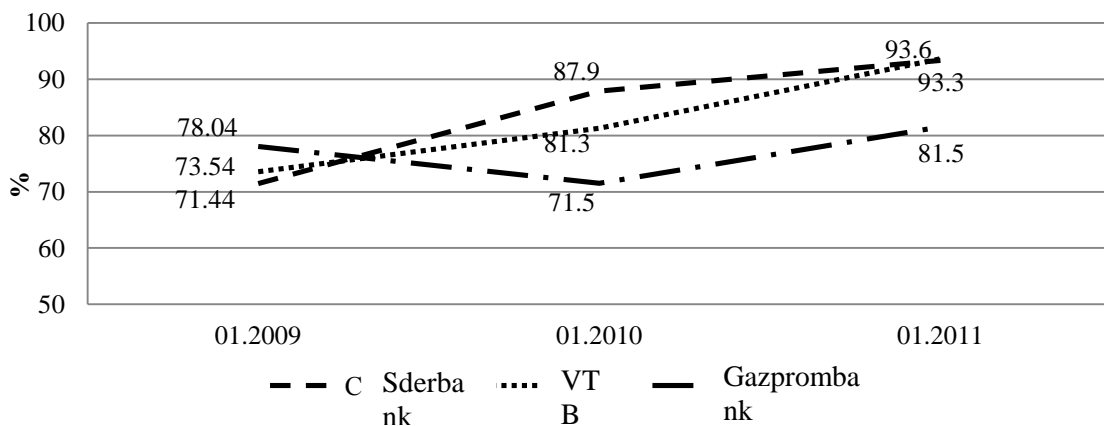
**Figure 6**  
**COMPARISON OF THE DYNAMICS OF CURRENT LOANS AND DEPOSITS OF INDIVIDUALS AND LEGAL ENTITIES OF SBERBANK CURRENT LOANS**



With regard to Gazprombank it should be noted that funds of the Bank of Russia were used to provide loans for legal entities (0.91), but the activity of the credit organization increases together with decreasing indicator of volume of accepted unsecured loans.

As for the long-term liquidity ratio, there is the dynamics of growth in such banks as Sberbank and VTB; Gazprombank shows minor variations (Fig. 7).

**Figure 7**  
**DYNAMICS OF LONG-TERM LIQUIDITY RATIOS**



Regarding the correlation analysis it should be noted that long-term liquidity ratios of Sberbank of Russia and VTB Bank have a high relationship with the volume of unsecured loans of the Bank of Russia, while in Gazprombank again low coefficient (0.55) is observed, respectively, there should be discussion about the impact that does not allow to make conclusions about the result.

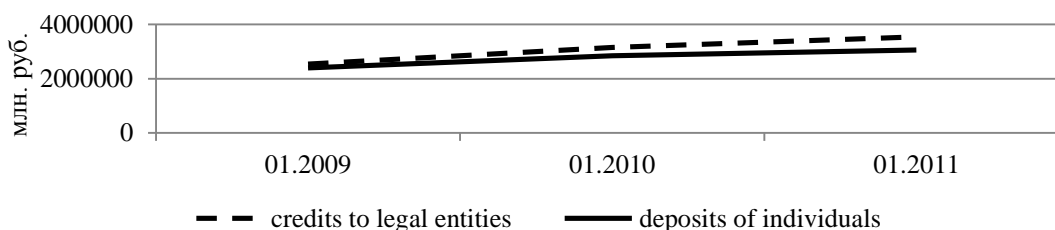
**Table 4**  
**DYNAMICS OF LONG-TERM ACTIVITIES INDICATORS OF THE CREDIT INSTITUTIONS**

	<b>Sberbank</b>	<b>VTB Bank</b>	<b>Gazprombank</b>
Credits to individuals	0,097074421	0,902696161	-0,380359397
Credits to legal entities	-0,996571069	0,0001698	-0,967714179
Deposits of individuals	-0,988120509	-0,999193669	-0,859946823
Deposits of legal entities	-0,03790463	-0,913610327	-0,91019253
Long-term liquidity ratio	-0,968608469	0,999199823	0,554795898

The situation of strong inverse relationship between the long-term liquidity ratio and funds of refinancing of the Bank of Russia (-0.97) is again observed in Sberbank. That means the bank also increases the activity and long-term types of operations while reducing the volume of funds of the Central Bank of the Russian Federation in its liabilities.

Connection with the indicator in this case exists in long-term corporate loans (-0.997) and long-term deposits of individuals (-0.988). Both coefficients are negative, that is, the bank begin to issue risky long-term resources to legal entities only during the periods of the Bank of Russia refunds and replaces these liabilities by increasing the attractiveness of long-term deposits for individuals (Fig. 8).

**Figure 8**  
**COMPARISON OF THE DYNAMICS OF LONG-TERM CORPORATE LOANS AND LONG-TERM INVESTMENTS OF INDIVIDUALS IN SBERBANK**



According to the VTB Bank correlation analysis, the funds of the Bank of Russia were used to a greater extent in order to maintain long-term liquidity ratio (0.999). In the period of entitlement of the funds in the credit institution, decline in raising funds from both the legal (-0.91) and from individuals (-0.999) is observed. Additionally, the funding for individuals (0.9) increased, however, since the activities of VTB Bank aims to work with legal entities, this growth is negligible. Accordingly, under this credit institution can be concluded, that using the funds from the Bank of Russia together with outflow of long-term resources of individuals, VTB Bank supported the long-term liquidity ratio ration at the required level.

## CONCLUSION

Thus, we can conclude that the greatest need for funds of the Bank of Russia was noticeable in VTB Bank, which spent the received resources to maintain Instant liquidity ratio and long-term liquidity ratio, while there is considerable dependence of the bank on the received unsecured loans, which indicates the presence of certain lack of liquidity problems in the credit institution.

Relatively Sberbank of Russia it can be argued that the credit institution had no urgent need to refinance its activities. This conclusion follows from the fact that all the correlation indicators inversely proportional to the volume of loans from the Bank of Russia. That means, while increasing this indicator, the bank reduced the amount of their own activities, and during the time of refunds to the Central Bank of Russia once again increased.

Gazprombank used the received funds for the medium-term corporate lending. That means that obtained resources were necessary for the bank to maintain the current liquidity ratio.

Accordingly, during the crisis credit institutions have used received refinancing funds from the Bank of Russia aimed at supporting the real economy and the population to save their own activities. Long-term financing for the period of 2009 was actually suspended and started to renew at sufficiently low rate only in 2010.

At the same time, refinancing funds of the Bank of Russia were intended to support the real sector of the economy and population during the crisis. In practice, they have been used to maintain the activity of the banks. Accordingly, the main problem of refinancing during the crisis of 2008 was a discrepancy of the objectives among the Central Bank and commercial banks and the lack of interaction between banks, real sector of the economy and population. In the current situation it is necessary to take into account the mistakes of the 2008 crisis, to limit the possibility of speculation of credit institutions, to encourage them to interact with the real sector of the economy and population. Thus, considering the retrospective review, in the current economic situation it is possible to create an effective and efficient policy of refinancing.

During the current economical situation it is important to use the experience from crisis of 2008. Government has allowed now investing no more than 10% of the Russian National Wealth Fund in the backbone banks, where Sberbank of Russia, VTB Bank and Gazprombank are part of these banks. This will help to increase the banking system capital up to 13%.

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