

THE DEFINITIONS OF MACRO- AND MICRO-COMPONENTS OF THE DELAYED LOAN DEBTS AND THEIR INFLUENCE ON THE COMMERCIAL BANK OPERATIONAL INCOME

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The article is devoted to the analysis of macro and micro components of the delayed loan debts and their influence on the commercial bank operational income.

A commercial bank is considered to be the link of the managing subjects in the economy. The crisis phenomena on the world financial market, connected with the problems of decreasing banking liquidity in 2007 - 2008, and also the cost of credit resources increase, affected the Russian financial market to a great extent. It illustrated the fact that excessive efforts of increasing their share on the credit market because of granting their credit resources to not insufficiently reliable borrowers inevitably leads to the high credit risk. Because of this, professional organization that meets to all modern requirements, and balanced bank risk management are considered to be the most pressing issue in the conditions of increased dependence Russian economy managing subjects on bank credit financing.

The approaches applied to risk credit management in Russia should be seriously moderated. The disproportions in banking sector, the lack of legislation, the weakness of management in stressful situations allow us to draw a conclusion that it is necessary to control credit risk more efficiently and first of all, to control the formation of delayed debts.

Both depositary and credit operations the heart of the bank operational activity. Let's define how delayed loan debts can influence the operational income of the bank.

The problem will be represented by the bank system of planned calculations in order to manage and to decrease delayed loan debts' influence on its activity.

Operational income (D) represents the difference between the percentage of income ($D\%$) and the percentage of expenses ($R\%$):

$$D = D\% - R\% .$$

Let's express the percentage bank income through the sum of the planned overplus of the

loan debts of i -th clients (Z_i) and the average interest rate on the credit portfolio ($Cp\%$):

$$D\% = \sum_{i=1}^n Z_i \cdot Cp\% .$$

However, these expressions do not consider the risk of delayed loan. We will designate the level of delayed debts of the bank as (r). And the operational income of the bank taking into account the level of delayed debts can be expressed like:

$$D = \sum_{i=1}^n Z_i \cdot Cp\% - \sum_{i=1}^n Z_i \cdot \gamma - R\% .$$

The received formula leads us to the following conclusion: the size of the operational income depends on the average interest rate of placing ($Cp\%$), the delayed loan debts level (r) and the size of percentage of expenses ($R\%$).

So, the operational income of the bank can be maximized by using the following methods:

- ◆ Increasing the volume of given out loans

$$\sum_{i=1}^n Z_i \rightarrow \max ;$$

- ◆ Increasing the average interest rate level

per credit portfolio $\sum_{i=1}^n Z_i \cdot Cp\% \rightarrow \max ;$

- ◆ Decreasing the level of the delayed debts

of the bank $\sum_{i=1}^n Z_i \cdot \gamma \rightarrow \min ;$

- ◆ Decreasing the cumulative percentage ex-

penses $R\% = \sum_{i=1}^n Z_i \cdot Sp\% \rightarrow \min$, where $Sp\%$

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is the average interest rate on the involved resources which the bank allocates for crediting legal bodies.

It should be mentioned, that the part of the involved resources goes for the formation of the obligatory reservation fund (FOR), and it is possible to present percentage expenses as:

$$R\% = \sum_{i=1}^n \frac{Z_i}{(1-L)} \cdot Sp\% \rightarrow \min,$$

where L is the deduction specification in FOR.

Concluding everything above, we will present expression (3) as follows:

$$D = \sum_{i=1}^n Z_i \cdot (Cp\% - \gamma - \frac{Sp\%}{1-L}) \rightarrow \max.$$

The level of the delayed loan debts of the bank is influenced by different factors, so let's define them. We will define the influence of external (macroeconomic) factors as function $f1(A, B, C, D...)$, and the influence of internal (microeconomic) factors - as function $f2(K, L, T, N...)$.

The arguments of $f1$ function are:

- ◆ general financial and economic conditions in the country and in the region;
- ◆ level of protection of economic interests in the banking system in general and in each separately taken bank, provided by the country's legislation;
- ◆ operating taxation system and tax level;
- ◆ average the borrowers' credit status level;
- ◆ other external factors, including various force-major situations (in particular, the defaults of payments under state obligations).

All these factors define the macroeconomic component of non-return credit risk and as the result, the size of the delayed debts' relative density. It is clear that average credit risk size is influenced by economic conditions in the coun-

try, overall financial and economic stability. The higher the economic stability level of the country (or region) is, the lower the average value of the indicator r (with other things being equal) is. Thus, environmental factors make long-term defining impact on the formation of an average delayed loan debts level, raising or lowering it.

The set of arguments for $f2$ function concerns the following aspects:

- ◆ strategic and tactical methods of planning, which are used by the top management and bank activity management;
- ◆ the account of its strategic and tactical interests;
- ◆ qualification of the of bank personnel and the applied system of personnel retraining;
- ◆ degree of integrated approach and the efficiency of applied credit monitoring methods;
- ◆ the level of actions coordination in the bank's functional divisions in the course of collecting the delayed loan debts.

The complexity of the given problem lies in the impossibility to differentiate microeconomic and macroeconomic factors' influence. It is a combination of the plural factors, and these factors influence the ability of borrowers to execute their duties.

To definite the macroeconomic component influence on the delayed loan debts level of the bank we will describe the financial and economic development in the country for the pre-crisis period (October, 2007 - September, 2008) and during the crisis (October, 2008 - September, 2009).

Let us consider $f1$ and $f2$ functions' influence on the formation of the delayed loan debts of legal bodies. It is presented in tables 1-3, and is based on the data for the regional banking system in which SBERBANK (POVOLZHSKY REGION) is carrying out its activity.

Table 1

Relative density of the delayed loan debts in SBERBANK (POVOLZHSKY REGION) from October 2007 to October 2008

Region	01.10.2007	01.01.2008	01.04.2008	01.07.2008	01.10.2008
Astrakhan	6,59 %	5,25 %	3,64 %	3,14 %	1,41 %
Volgograd	0,98 %	1,16 %	1,01 %	0,92 %	0,56 %
Orenburg	6,11 %	5,34 %	4,55 %	4,48 %	4,86 %
Penza	1,43 %	0,75 %	0,56 %	0,40 %	0,31 %
Samara	1,01 %	0,82 %	0,78 %	0,79 %	1,00 %
Saratov	0,21 %	0,15 %	0,12 %	0,09 %	0,07 %
Ulyanovsk	3,26 %	3,02 %	2,18 %	1,99 %	1,88 %
TOTAL	1,82 %	1,50 %	1,31 %	1,23 %	1,21 %

Table 2

Relative density of the delayed loan debts in SBERBANK (POVOLZHISKY REGION) from October 2008 to October 2009

Region	Before crisis	During crisis	Relative density of macroeconomic component
Astrakhan	4,00 %	1,00 %	-299,96 %
Volgograd	0,93 %	2,62 %	64,62 %
Orenburg	5,07 %	9,08 %	44,16 %
Penza	0,69 %	0,68 %	-0,92 %
Samara	0,88 %	2,99 %	70,57 %
Saratov	0,13 %	0,59 %	78,28 %
Ulyanovsk	2,47 %	3,03 %	18,64 %
IN TOTAL	1,41 %	2,89 %	51,08 %

Table 3

The average level of relative density of the delayed loan debts in SBERBANK (POVOLZHISKY REGION) before and during the crisis

From the presented data it is clear, that

Let us consider that $f_2 = f_2$, then:

Region	01.10.2008	01.07.2009	01.10.2009
Astrakhan	4,00 %	1,00 %	0,85 %
Volgograd	0,93 %	2,62 %	3,89 %
Orenburg	5,07 %	9,08 %	11,87 %
Penza	0,69 %	0,68 %	0,81 %
Samara	0,88 %	2,99 %	3,59 %
Saratov	0,13 %	0,59 %	0,78 %
Ulyanovsk	2,47 %	3,03 %	3,12 %
TOTAL	1,41 %	2,89 %	2,61 %

So, while comparing the results of relative density of the delayed loan debts before the crisis and during the crisis, it is possible to define macroeconomic factors influence (f1) on the delayed loan debts occurrence.

For this purpose we shall consider that before crisis the influence of macroeconomic factors (f1) was close or equal to zero, then:

$$\gamma'_1 = f_2$$

where γ'_1 is the average relative density of the delayed loan debts before the crisis in SBERBANK (POVOLZHISKY REGION).

$$\gamma'_2 = f_1 + f_2$$

where γ'_2 is the average relative density of the delayed loan debts during the crisis in SBERBANK (POVOLZHISKY REGION).

Thus, the average share of influence of the macroeconomic indicators on the level of the delayed loan debts in SBERBANK (POVOLZHISKY REGION) is equal to 51,08 %. And then, 48,2 % concerns the influence of microeconomic indicators. It is necessary to point out that while solving the delayed debts reduction problem, the bank manager should bring, first of all, "micro" component to zero:

$$f_2 \rightarrow 0;$$

f_1 is the planned level of the delayed loan debts.

The average chronological data based on statistical numbers can be one of the most possible methods of defining the planned level of delayed loan debts.

The simplicity of calculation is the advantage of the given method, and the disadvantage is that the calculation of the future indicator is based on the aggregated values of the previous period which do not reflect the factorial values of the indicator.

The factorial model is the second method of the delayed loan debts forecasting. The detailed calculation is the advantage of the second method. Finding the arithmetic average of the received values from the first and second methods, taking into account updating based on personal experience, is the third method - the expert method.

Thus, using the statistical information of the bank, it is necessary for a bank manager to predict the future relative density of the delayed loan debts. The manager should define the influence of macroeconomic factors of function (f_1) on the relative density of the delayed

loan debts. The relative density of the delayed loan debts should be taken in account for operational income forecasting, especially during decision-making on interest rate establishment.

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