

Procedural support of assessment of stability of non-bank crediting organizations in Russia

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Abstract. The study deals with the features of simulation of defect probability of a non-banking crediting organization in regard to the Russian situation. A technique of fast analysis is advanced to analyze the provability of loss solvency and financial stability (the early warning model) for Russia non-banking crediting organizations based on the integral indicator characterizing the level of solvency, profitability, capital sufficiency and available reserves to cover possible losses.

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Introduction

The matter of analysis and assessment of main causes, which entail the loss of solvency, simulation of loss likelihood at banking sector, are explored quite adequacy in local and foreign publications [1,2,3,4,5,6,7]. Meanwhile, the scientific publications, which use the econometric exploration techniques to estimate relations between negative financial results of the non-banking crediting organization and the factors, which are likely to affect it, have not been revealed necessitating thus the present study.

It is noteworthy that the Russian banking system after incomplete 25 years of its evolution has covered a rather intricate path outliving through two most severe crises in 1998 and in 2008-2009 years. Versus the 1990s and throughout the 2000s, the successive transformations, legal and regulatory innovations resulted in the improved territorially distributed baking system assuring the satisfactory performance of traditional banking intermediate functions [8].

Meanwhile, the experienced crises compel to continuously comprehend the banking business current status, to estimate the possible ways of resolving the emerging challenges, including those non-banking crediting organizations confront [9].

The approaches to constructing models of early prevention for the banking sector organizations and the factors which determine the success of operations of bank performance in developed countries are summarized in the study carried out by foreign researchers, such as Christian Blum, Ludwig Overbook, and Cristoff Wagner, home researcher K.M. Totmjanina [10].

The Russian researchers A.M. Karmiinskii, A.A. Perestskii, and others, determine the financial variables which characterize, in the first place, the commercial bank stability, they are the size of assets

and their capitalization as the relation between the bank capital and the total assets [1].

Meanwhile, V. Vennet, among foreign researchers, notes that a larger relation between capital and assets at the Russian banking sector favors the reduced likelihood of the banking organization default; meanwhile, the bank size does not influence the likelihood of its occurrence [4].

The study of economic publications of the effective techniques at the Bank of Russia has not revealed any available techniques of estimating the likelihood of solvency loss or financial stability of non-banking crediting organizations (NBCB hereinafter).

In recent years, the Central Bank of Russia conducts the stress testing regularly using the scenario analysis technique popular in international practice. The macroeconomic model used by the Bank of Russia is the system of regression equations describing the influence of macroeconomic indicators, such as the gross home product, the dollar rate of exchange, inflation, public profits and others, and their effect on the main bank performance indicators; they are the scope of crediting in economics, bank deposits, the means remaining on bank current accounts, the state of the Bad Debts, and others. But this task is highly labor consuming requiring relevant specialists and open access to data resources or extensive bank statistics, the Russtat actual data.

The application of approaches to estimating the likelihood is quite burdensome due to the same reasons when using the approaches of likelihood of solvency loss of a NBCB disclosed in the Bank of Russia instruction dated 30.04.2008 # 2005-U«The assessment of banking economic status».

Therefore, it seems expedient to develop the techniques of fast analysis (assessment) of the likelihood of particular NBCB evolution into the problematic failing NBCBs (having the negative

capital) and into the banks in the condition of technical default, in other words, those having the liquidity deficit.

Our hypothesis is based on the study of a number of indicators the model incorporates in the linear way. Thus, the work will deal with assessment criteria the indicators of assets, capital and profits. The empirical indicator model should better incorporate the quality of default likelihood indicator, the indicator of available reserves to cover the likely losses. We proceed from the fact that, when the indicator of sufficient capital from own means, the solvency, the insufficient size of accumulated reserves to cover likely losses, there may be the deficit of assets to cover the undertaken risk.

As a resulting indicator, the combined financial stability and solvency indicator FSI is proposed accumulating the intermediate indicators reflecting the NBCB solvency degree, the size of profitable performance calculated with the above-listed indicators.

The table below shows the indicators used to estimate the NBCB financial stability state.

Table 1. Technique of calculation of intermediate and resulting combined financial indicators of NBCB financial stability and solvency

| Number | Indicator | Algorithm of indicator calculation |
|--------|--|--|
| 1 | NBCB assets , thousand rubles | Data of banking accounting |
| 2 | NBCB capital, thousand rubles | Data of banking accounting |
| 3 | Profit (loss) before paying taxes, thousand rubles | Data of banking accounting |
| 4 | Actual norm N1-residual capital (CAWR), percent | Data of banking accounting |
| 5 | Reserves for likely losses, thousand rubles | Data of banking accounting |
| 6 | Solvency ratio (SR) | $\frac{\text{page1}}{(\text{page1} - \text{page2}) \times \text{CAR}}$ |
| 7 | Index of profitability from operations (FR) | $\frac{\text{page3}}{\text{page1} \times \text{CAR}}$ |
| 8 | Index of own means sufficiency (capital) - CA | $\frac{\text{page4}}{\text{CAR}}$ |
| 9 | Index of available reserves for likely losses (CR) | $\frac{\text{page5}}{\text{page1} \times \text{CAR}}$ |

Explanation: CAR – combined indicator for NBCB sector in Russia (corresponding figure for Russia).

To conduct the analysis the database is each NBCB official accounting contained in the Reference manual of crediting institutions at the site of the Bank of Russia www.cbr.ru/credit/:

«Bookkeeping balance»,

«Account of profits and losses»,

«Account of capital sufficiency, size of reserves to cover Bad debt and other assets», form code 0409808;

«Data about obligatory norms», form code 0409813.

With the account of the above-said, the combined financial stability and solvency indicators

are proposed to be calculated according to the following formula:

$$FSI = 0,4SI + 0,3FR + 0,2CA + 0,1AR$$

(1)

where: FSI – the combined financial stability and solvency indicators (Financial strength indicators);

SI - solvency index (solvency index);

FR - index of profitability of operations (financial result);

CA - capital adequacy index (capital adequacy);

AR – index of available reserves to cover likely losses (availability of reserves).

The solvency index (SI) is determined with the following formula:

$$SI = \frac{A}{(A - C) \times CAR}, \quad (2)$$

where: A – assets (assets);

C - capital (Capital);

The index of profits from operations (FR) is proposed to be calculated with the following formula:

$$FR = \frac{PT}{A \times CAR}, \quad (3)$$

where: PT – profit before paying taxes (profit to taxes);

The index of capital adequacy (CA) is calculated with the following formula:

$$CA = \frac{CAWR}{CAR} \quad (4)$$

where: CAWR – capital to assets weighted by risk (capital to assets weighted by risk).

The index of available reserves to cover likely losses (CR) can be determined with the following formula:

$$CR = \frac{RPL}{A \times CAP}, \quad (5)$$

where: RPL – reserves to cover likely losses (reserves on possible losses).

The weights of intermediate indicators incorporated into the resulting indicator of NBCB financial stability and solvency are applied from the expert assessments of TOP-managers of banks «Neftjanoi aljans» and «Promselkhozbank» of Moscow, (see Table 2).

The proposed technique of fast analysis of stability is based on assessment of key indicators of easy to apply by the user the financial accounting permitting to determine the steady dynamics and compare them with the relevant indicators from preceding periods for profound analysis of the

economic situation and to reveal the causes of negative changes.

Table 2. Weights of intermediate indicators (indexes) of financial stability and solvency

| Number | Risk factors | Weight |
|--------|--|--------|
| 1 | Solvency index | 0.3 |
| 2 | Profitability index from operations | 0.25 |
| 3 | Index of adequacy of own means | 0.25 |
| 4 | Index of available reserves to cover likely losses | 0.2 |

Table 3 shows the results of intermediate indexes and integral indicator of financial stability and solvency in the selected NBCB circle at the beginning of 2013.

Table 3. Indicators of NBCB financial stability and solvency for 01.01.2013 (unique technique)

| Number | NBCB description | Solvency index (SI) | Portability index (PR) | Capital adequacy index (CA) | Index of available reserves to cover losses (CR) | Combined index of financial stability and solvency (FSI) |
|--------|---|---------------------|------------------------|-----------------------------|--|--|
| | Open Stock Co "Assignatsia" | 2.13 | -9.40 | 0.88 | 0.00 | -1.49 |
| | Open Stock Co "Bankovskie informatsionnye tekhnologii" | 0.97 | 0.25 | 0.59 | 0.02 | 0.51 |
| | Open Stock Co "BRINKS" | 1.16 | -0.71 | 0.17 | 4.43 | 1.10 |
| | Open Stock Co "Western Union DP Vostok" | 1.29 | 3.30 | 0.40 | 1.44 | 1.60 |
| | Open Stock Co "Dangi Main Ru" | 1.19 | 1.08 | 0.00 | 0.00 | 0.63 |
| | Open Stock Co "Eximinvest" | 1.83 | -1.30 | 1.67 | 1.20 | 0.88 |
| | Open Stock Co "INKAKHAN" | 1.04 | 1.01 | 0.23 | 5.78 | 1.78 |
| | Closed Stock Co "Innovatsionnyi tsentr" | 1.23 | 0.32 | 0.52 | 2.90 | 1.16 |
| 4 | Open Stock Co "UMUT" | 1.27 | 1.91 | 2.47 | 0.85 | 1.65 |
| 5 | Closed Stock Co "Uralskaya Raschetnaya Palata" | 1.00 | 0.11 | 1.27 | 0.20 | 0.69 |
| 6 | Closed Stock Co "Finansovoraspachetnyi tsentr" | 1.00 | 0.70 | 0.62 | 1.53 | 0.94 |
| 7 | Open Stock Co "Tsentr mezhbankovskikh raschetalov" | 3.19 | 0.39 | 1.46 | 0.11 | 1.44 |
| 8 | Closed Stock Co "Chartyi raspachetno-kassovyi tsentr" | 1.14 | 0.28 | 1.29 | 0.00 | 0.75 |
| 9 | Open Stock Co "Raspachetnyi kassovyi tsentr EnergoBusiness" | 0.97 | 0.44 | 0.43 | 5.73 | 1.65 |
| 0 | Open Stock Co "EPS" | 1.02 | 0.06 | 0.19 | 0.00 | 0.37 |
| 1 | Open Stock Co "Index Dengi" | 0.95 | 0.63 | 0.05 | 0.00 | 0.45 |
| | TOTAL: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

The model of likelihood of negative financial result is potentially attractive for the Bank of Russia as the controller of non-banking crediting institutions and their counter partners. The controller enables to reveal the most vulnerable banks and plan timely measures for their financial state improvement. The model can be useful for NBCB counter partners in order to comprehend better the risk of investment into a particular NBCB.

For practical purposes of business subjects during the evolving changes, it is required to estimate regularly the results to be able to determine the state and tendencies of main trends of attraction and

placement of NBCB means, the dynamics of profits and losses.

The independent analysis of dynamics how indicators change and their relations, the effectiveness of assets, enables to compare the interbank crediting institutions, to assess their stability and solvency and future prospects.

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