World Applied Sciences Journal 25 (2): 184-188, 2013
ISSN 1818-4952

DOI: 10.5829/idosi.wasj.2013.25.02.7049

Modification of Methods of Analyzing Creditability of Sberbank of Russia with the Purpose of Managing the Financial Stability of Enterprises

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Submitted: Aug 20, 2013; **Accepted:** Sep 26, 2013; **Published:** Oct 1, 2013

Abstract: The article suggests ways of adapting methods, developed in Sberbank of Russia to estimate the creditability of borrowers and to analyze the financial stability of enterprises. In the suggested modification these methods must be part of the inner financial analysis and be used at the stage of planning the finances and business operations, in order to control its realization, and at the stage of evaluating the results and adjusting management.

Key words: Managing enterprises · Financial analysis · Financial situation · Financial stability · Methods of estimating creditability of Sberbank of Russia borrowers

INTRODUCTION

The financial stability of an enterprise, i.e. its ability to keep the achieved normal financial position in the circumstances of adverse effects [1], is and essential feature of financial position. The observance of terms of financial stability is a problem for many, even successful, Russian companies as they are usually focused on achieving the high profits. Besides, the modern Russian economic analysis schools have not yet come to the consensus about categorical and methodological basis of analyzing financial stability, though they are usually based on one and the same western theories of economic analysis [2-4].

In our opinion, the most promising direction is developing integrated methods of financial stability analysis [5], taking into account the great variety of factors, influencing it. In this work we describe the financial stability analysis modification of an integrated method, which initially was developed for the purposes of credit analysis.

Description of the Method of Evaluating Creditability of Sberbank of Russia Borrowers: Methods of analyzing the creditability of Sberbank of Russia borrowers is part of Regulations of rendering credits to legal bodies by Sberbank of Russia and its suboffices [6]. It consists of two parts: qualitative and quantitative analysis, and so it is called integrated [7].

The quantitative analysis means evaluating the financial position of a borrower on the basis of calculating the minimum set of finance indicators, including three groups:

- Solvency ratios;
- Equity ratio indices;
- Indices of intensity and efficiency of funds application (indices of turn-round and rentability).

Six of these indices are called evaluative, as the grade of a borrower is evaluated on the base of them. These are absolute, intermediate and current liquidity ratios (K1–K3):

$$K1 = \frac{Monetary\ funds\ and\ short\text{-}term\ deposits}{Liabilities\ with\ repayment\ period\ less\ than\ 1\ year}, \quad (1)$$

$$K2 = \frac{Monetary\ funds, short\text{-}term\ deposits\ and\ borrowers'\ debts}{Liabilities\ with\ repayment\ period\ less\ than\ 1\ year} \quad (2)$$

$$K3 = \frac{All\ circulating\ assets}{Liabilities\ with\ repayment\ period\ less\ than\ 1\ year} \quad (3)$$

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\Equity-assets ratio K4:

$$K4 = \frac{Equity\ capital}{Overall\ capital}, \quad (4)$$

and profitability index K5 и K6:

$$K5 = \frac{Sales\ profit}{Income}, \quad (5)$$

$$K6 = \frac{Net\ profit}{Income} \quad (6)$$

The listed coefficients are calculated mostly by financial data reporting of a borrower. At calculating K1–K3 there is used additional information about degree of liquidity and reliability of financial investments of a borrower, about the quality of their reserves and debt receivable-illiquid and insufficiently safe financial investments and surplus stocks, as well as accounts uncollectible are not included into the calculation.

The other indices are called additional-they are used for detailing the evaluation. All indices have been selected on the basis of expert judgments of the authors of the method.

On the basis of comparing the calculated values with the stated scale (Table 1) each of the estimation indices is given a certain category (first category-the best values).

The total evaluation of a borrower *S* is calculated as the sum of products of estimation indices by their value:

$$S = 0,05CategoryK1 + 0,1CategoryK2 + 0,4CategoryK3 + \\ +0,2CategoryK4 + 0,15CategoryK5 + 0,1CategoryK6. \quad (7)$$

S is an integrated evaluation, calculated by the modified method of places sum [8, c. 96]. Values *K*1–*K*6 are appointed by expertise in such a way, that if all indices have 1 category, *S* will be equal to one.

On the basis of *S* and index K5 there is done the predefining of the borrower's creditability grade:

- Grade–the crediting of a borrower is beyond question;
- Grade–the crediting requires a balanced approach;
- Grade–the crediting of a borrower implies risks.

For giving the 1 grade *S* must be no more than 1,25, and profitability of product–no less than 10 % per annum (K5 = 0,1); for giving 2 grade the fulfilment of condition 1,25 < *S* = 2,35 and nonnegative profitability of product is required; if *S* > 2,35, the 3 grade is given (criterial values *S* and K5 are also appointed by expertise).

Table 1: Values and categories of indices by methods of Sberbank of Russia

Indices	1 category	2 category	3 category
K1	$K1 \geq 0,1$	$0,05 \leq K1 < 0,1$	$K1 < 0,05$
K2	$K2 \geq 0,8$	$0,5 \leq K2 < 0,8$	$K2 < 0,5$
K3	$K3 \geq 1,5$	$1,0 \leq K3 < 1,5$	$K3 < 1,0$
K4 (except trade and leasing companies)	$K4 \geq 0,4$	$0,25 \leq K4 < 0,4$	$K4 < 0,25$
K4 (for trade and leasing companies)	$K4 \geq 0,25$	$0,15 \leq K4 < 0,25$	$K4 < 0,15$
K5	$K5 \geq 0,10$	$0 \leq K5 < 0,10$	$K5 < 0$
K6	$K6 \geq 0,06$	$0 \leq K6 < 0,06$	$K6 < 0$

In further the grade of creditability is corrected with taking into account the values of additional indices and qualitative analysis.

The qualitative analysis in methods of Sberbank of Russia consists in the assessment of four groups of risks:

- Sectoral risks (market condition in the sector; trends of competition development in the sector; level of state support in the sector; importance of the enterprise in the region; risk of unfair competition from the other banks);
- Equity risks (risk of stock capital redistribution of a corporate borrower; conformity of major shareholders positions);
- Risks of managing the company activity (dependency of a borrower and financial flows, connected with it; formal and informal regulation of its activity; licensing of the borrower's activities; allowances and risk of canceling them; risks of fines and sanctions; law-enforcement risks (possibility of changes in legislative and normative base));
- Manufacturing and management risks (technology level of manufacturing; risks of supply infrastructure (changes in the prices of suppliers, fails to deliver etc.); risks, connected with banks, in which the borrower has open accounts; business reputation (accuracy in carrying out obligations, credit record, participation in large projects, quality of goods and services etc.); quality of management (qualification, stability of the management position, its adaptivity to new managerial methods and technologies, influence in business and financial world)).

If there are any of the listed risks and their impact is substantial, the grade of borrower's creditability can be lowered by one. If in the result of qualitative evaluation there were identified the facts, bear evidence of the

client's inability to fulfill his obligations, the client is given the grade *d* (default). So, the Sberbank method sets 4 different grades of borrowers according to their creditability level.

Suggestions of modifying the Sberbank method of analyzing the financial stability. Method of Sberbank of Russia, unlike most of financial analysis methods, generally accepted in Russia, includes the analysis of risks, which allows evaluating the possibility of financial position deterioration in future. This corresponds with the inner essence of the financial stability economic category, so we suggest taking the qualitative analysis of risks as the base of Sberbank's financial stability analyzing methods. As for quantitative analysis, we suggest replacing some of evaluation indices and complement them in such a way, that the most important factors of stability forming are included into consideration. At this we suggest analyzing the stability level on the basis of calculating *S*, which is constructed similar with (7).

Half of the evaluation indices of Sberbank method are presented by solvency ratios. Financial solvency is the most important feature of the organization's financial standing, an essential condition of stability, but the evaluation indices of it, generally accepted in Russian conditions, can't be considered indisputable. The liquidity rates characterize their financial solvency only to current liabilities, and only one of them (intermediate liquidity ratio) can give the information, if the organization is able to discharge these obligations in time. We think that instead of liquidity rates it would be more useful to include into evaluation the indices, characterizing the borrower's ability to discharge each group of external obligations in time:

$$K1 = \frac{Monetary\ funds\ and\ short\text{-}term\ deposits}{Notes\ payable}, \quad (8)$$

$$K2 = \frac{Notes\ receivable}{Other\ liabilities\ with\ repayment\ period\ less\ than\ 1\ year}, \quad (9)$$

$$K3 = \frac{\mathrm{Re}serves\ and\ other\ circulating\ assets}{Liabilities\ with\ repayment\ period\ over\ 1\ year} \quad (10)$$

The order of including assets into calculations should accord with method of Sberbank, i.e. illiquid and insufficiently safe financial investments, surplus stocks, and accounts uncollectible are not included into the calculations. The condition of giving the 1 category – the value of indices (8–10) must be no less than 1.

The equity ratio, i.e. financial self-sufficiency, is an important precondition of financial stability, so index K4 of Sberbank method should be included into the suggested methodology.

Indices K5 and K6 in Sberbank method characterize the profitability of organization. The high profitability contributes to preserving the normal financial position, i.e. financial stability, so profitability indices are necessary in its integrated evaluation. But, unlike the methods of Sberbank, we suggest variegating the profitability indices. In Sberbank method K5 and K6, are actually duplicating each other. If would be more reasonable instead K6 to include into the evaluation the last of additional indices, provided by Sberbank method–the total assets rentability, which characterizes the profitability of organization's business activities in general:

$$K6 = \frac{\mathrm{Pr}etax\ profit}{Total\ assets} \quad (11)$$

In addition to the above mentioned we suggest including into consideration such important factors of financial stability, as:

- Providing the company's current activities with stable sources of funding;
- Breakeven reserve of the main activity of the company.

To estimate the first factor we suggest using the own circulating assets reserves-to-production ratio:

$$K7 = \frac{Own\ circulating\ assets}{\mathrm{Re}serves} \quad (12)$$

The own circulating assets here are part of fixed capital (own and long-term debt funds), invested into floating assets.

The reserve of breaking even we suggest estimating per cent [1, c. 270]:

$$K8 = \frac{Actual\ income - Breakeven\ income}{Actual\ income}100, \quad (13)$$

where the breakeven profit is calculated as

$$\frac{Variable\ \mathrm{cos}ts}{1 - \frac{Fixed\ \mathrm{cos}ts}{Actual\ income}} \quad (14)$$

Eventually, the suggested method should contain the following indices K1 (8), K2 (9), K3 (10), K4 (4), K5 (5), K6 (11), K7 (12) и K8 (13). Note, that indices (8)–(10), (4) and (12) are momentary, and indices (5), (11) and (13) are calculated during the period. For the comparability of data, included into calculating *S*, the momentary indices should be given for the periods, for which the period indices have been calculated (by averaging them). So, the calculated value of *S* will characterize the financial stability level for this or that period of time.

Determining the criterial values of K1–K8 indices to identify their categories, in our opinion, must be based not on expert judgment, but on statistical processing of the enterprises representative sampling data, maybe, with differentiation by sectors. This requires the separate research.

S is suggested to be calculated by the formula

$$S = CategoryK1 + CategoryK2 + CategoryK3 + CategoryK4 + \\ + CategoryK5 + CategoryK6 + CategoryK7 + CategoryK8. \quad (15)$$

In the Sberbank method the weighing coefficients in the formula *S* (7) determine the nonuniform value of estimation indices. We suggest considering all the factors of financial stability formation of equal value, and as a result, the weight numbers of all estimation indices in (15) are equal to one. This is a more objective approach to estimation.

Similarly to the Sberbank method, by setting the criterial values of *S* we can identify several levels of financial stability. Determining these values requires an additional research.

Calculating *S*, similarly to the Sberbank method, is the basis for preliminary estimation in the offered methodology. The final estimation should be determined after the qualitative analysis of risks. In case of detecting the high level of risk in any of 4 groups the estimation of stability level must be lowered by one.

Methods of analyzing risks are not specificated in Sberbank method. In actual practice they are often partially evaluated with formalized analysis methods [1, c. 57], and mostly by expert judgment. Having no possibility to bring this aspect of the suggested method to a sharper focus within the framework of this work, we will only point out, that at analyzing sectoral and manufacturing risks we should make evaluating the production intensification ratio and character of using the operating resources of an enterprise the corner-stone [9]. And at comparing the quantitative indices in dynamics it's necessary to remember about the compatibility requirements and adjust the data taking into account the change of prices [10].

CONCLUSION

As a result of modification, described in the work, the method of analyzing creditability of Sberbank borrowers has been adapted for the purpose of analyzing the financial stability of enterprises. It is integrated, as it includes evaluation of factors of the stable financial position forming, analysis of internal and external risks; qualitative and quantitative analysis.

The set of quantitative analysis indices, suggested in our work, cover such important conditions of preserving the normal financial position, as:

- Financial solvency;
- financial self-sufficiency;
- Operating profitability;
- Providing the company's current activities with stable sources of funding;
- Break-even reserve of the main activity.

The qualitative analysis covers the four groups of basic risks of the company's activity:

- Sectoral;
- Equity;
- Risks of regulating the company's activity;
- Manufacturing and management risks.

This method should be used at planning the company's activity in order to choose such a variant of development, which is going to provide the highest level of stability; during fulfilling business plans, projects and development programs in order to keep the acceptable (or prescribed) level of stability; at the stage of estimating results, achieved during this of that period, to identify the achieved stability level and the causes, that helped achieving it. So, the suggested method should be used at all stages of managerial processes.

The permanent use of this method on a predetermined periodic base (and providing the proper information support) is going to allow managing the financial stability of an enterprise successfully and raising the general level of economical management in it.

Conclusions: With modifications, suggested in this work, at after solving the problem of setting criterial values K1–K8 and *S* the Sberbank method is going to be an effective instrument of regulating the financial stability at all stages of managing the finances and business operations of an enterprise.

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