

To the issue of assessing the creditworthiness of the company by russian commercial banks

A la cuestión de evaluar la solvencia de la empresa por parte de los bancos comerciales rusos

Para a questão de avaliar a credibilidade da empresa por bancos comerciais russos

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Written by:

A.V. Baranova (Corresponding Author)¹⁸³

E.Yu. Vetoshkina¹⁸⁴

N.B. Semenikhina¹⁸⁵

R.Sh. Tukhvatullin

Abstract

Credit in the economy plays a double role, since it is a source of development for organizations (acquisition of fixed assets, modernization and reconstruction of production, launching of new projects, as well as the replacement of working capital) and an instrument for the generation of income for the bank and, in general, its main activity. To analyze the differences in the industry, we selected 30 companies. On the basis of its financial statements, we calculate the liquidity indices, the profitability of sales and the turnover of accounts payable and accounts receivable. The results showed that the reliability and financial stability of the clients reduce the bank risks, help the bank to obtain a higher income. It is considered that the bank deals not only with high-level customers: there are also customers among them who experience financial difficulties due to inadequate production organization, poor market research or poorly chosen strategy. The ability to correctly identify the client's capabilities, recognize their strengths and weaknesses is an important task for credit institutions. Therefore, these analytical indicators allow to objectively evaluate the creditworthiness of the borrower. However, in addition to the analysis of the financial ratios, it is necessary to evaluate the quality parameters, that is, analyze the client's credit history, the period of his service in the bank, the quality of the

Resumen

El crédito en la economía desempeña un doble papel, ya que es una fuente de desarrollo para las organizaciones (adquisición de activos fijos, modernización y reconstrucción de la producción, lanzamiento de nuevos proyectos, así como la reposición del capital de trabajo) y un instrumento para la generación de ingresos para el banco y, en general, su actividad principal. Para analizar las diferencias de la industria, seleccionamos 30 empresas. Sobre la base de sus estados contables (financieros), calculamos los índices de liquidez, la rentabilidad de las ventas y el volumen de negocios de las cuentas por pagar y las cuentas por cobrar. Los resultados demostraron que la confiabilidad y la estabilidad financiera de los clientes reducen los riesgos bancarios, ayudan al banco a obtener un ingreso más alto. Se considera que el banco trata no solo con los clientes de alto nivel: también hay clientes entre ellos que experimentan dificultades financieras debido a una producción inadecuada organización, pobre investigación de mercado o una estrategia mal elegida. La capacidad de identificar correctamente las capacidades del cliente, reconocer sus fortalezas y debilidades es una tarea importante para las instituciones de crédito. Por lo tanto, estos indicadores analíticos permiten evaluar objetivamente la solvencia crediticia del prestatario. Sin embargo, además del análisis de los ratios financieros, es necesario evaluar los parámetros de calidad, es decir,

¹⁸³ English Language Department, Faculty of Communication and Modern Languages, Universiti Putra Malaysia (UPM) Emails: nimechie@gmail.com, Phone number: +60-17 667 8715

¹⁸⁴ Mathematics Department, Faculty of Science, UPM. Email: zahranazemi83@gmail.com. Phone number: +601114309965

¹⁸⁵ Department of Language and Humanities Education, Faculty of Educational Studies, UPM. Email: jahedi73@gmail.com. Phone number: +60-182126578

administration, his dependence on the suppliers and customers, and credit security.

Keywords: credit scoring, bank, rating, risk.

analizar el historial crediticio del cliente, el período de su servicio en el banco, la calidad de la administración, su dependencia de los proveedores y clientes, y seguridad crediticia.

Palabras claves: calificación crediticia, banco, calificación, riesgo.

Resumo

O crédito na economia desempenha um papel duplo, uma vez que é uma fonte de desenvolvimento para as organizações (aquisição de ativos fixos, modernização e reconstrução da produção, lançamento de novos projetos, bem como a substituição do capital de giro) e um instrumento para a geração de renda para o banco e, em geral, sua principal atividade. Para analisar as diferenças na indústria, selecionamos 30 empresas. Com base em suas demonstrações financeiras, calculamos os índices de liquidez, a rentabilidade das vendas e o giro das contas a pagar e contas a receber. Os resultados mostraram que a confiabilidade e a estabilidade financeira dos clientes reduzem os riscos bancários, ajudando o banco a obter uma receita maior. Considera-se que o banco lida não apenas com clientes de alto nível: há também clientes entre eles que enfrentam dificuldades financeiras devido à organização inadequada da produção, pesquisa de mercado deficiente ou estratégia mal escolhida. A capacidade de identificar corretamente as capacidades do cliente, reconhecer seus pontos fortes e fracos é uma tarefa importante para as instituições de crédito. Portanto, esses indicadores analíticos permitem avaliar objetivamente a qualidade de crédito do tomador de empréstimo. No entanto, além da análise dos índices financeiros, é necessário avaliar os parâmetros de qualidade, ou seja, analisar o histórico de crédito do cliente, o período de seu atendimento no banco, a qualidade da administração, sua dependência dos fornecedores e clientes e segurança de crédito.

Palavras-chave: classificação de crédito, banco, rating, risco.

Introduction

The main value of the relationship between commercial banks and their borrowers is a mutually beneficial partnership, which is directly related to the borrower's creditworthiness (Vine, 2013). The insolvent and non-creditworthy organization will not be attractive as a partner not only for the bank, but for the suppliers and investors as well. The main bank's purpose in assessing the creditworthiness is to find those qualities of the borrower that could point out the possible flaws in its activity, which in turn can lead to a non-return of credit funds (Ammann, 2007). Only when passing such a reliability check, the borrower receives a positive response to its request for a credit.

Credit Scoring

Domestic banks independently develop the credit scoring methods. However, the general drawback of most of the methods used by the commercial banks is the insufficient methodological base for assessing the non-financial parameters of the borrower. In

addition, many credit institutions ignore industry features in their methods. In Russia, the banks use the regulations developed by themselves or established for a wide range of enterprises, regardless of the direction of their activities, therefore it will be wrong to compare the indicators of, for example, an engineering enterprise and an enterprise operating in the field of trade (Seiber, 1982). Undoubtedly, each industry has its own peculiarities in terms of the speed of capital turnover, cash flow, asset composition and costs of the enterprise (Van Horne and Wachowicz, 2008). With regard to the lack of clear limits of standards, calculated taking into account the industry specificity, the banks do not take into account the industry features in assessing the creditworthiness of the borrowing enterprise. In this case, the risk of an unreliable assessment of the borrower's creditworthiness is obvious, which in turn can lead to the risk of non-payment of credit obligations.

Based on the foregoing, we believe that it is impossible to apply the uniform regulatory requirements on the values of financial indicators to the enterprises of various industries.

The analysis of the enterprise's position in the industry shall begin with a market assessment and the competition features (Higgins, 2012). It is important to determine the geographical boundaries of the market: local, regional, national, international, global. The consumer diversification depends on the market scale and the stability of the company's revenue depends on it, in turn. The more consumers are diversified, the greater and more stable the revenue is, and the more stable the enterprise's position is. In each industry, the movement of financial flows is assessed in different ways (Berman and Knight, 2013). When determining the financial stability of financial flows of a borrowing enterprise, it is expedient to estimate the nature of demand: whether it depends on cyclic and seasonal fluctuations. The wider the amplitude of demand fluctuations is, the higher the risk is. If an enterprise belongs to those industries for which a strong demand fluctuation is characteristic, it is necessary to determine how it prevents these fluctuations. The stable demand dynamics is usually determined by the life cycle stage of production and manufacturing technology (Eldenbug and Wolcott, 2004).

When analyzing the quantitative parameters, it is advisable to compare the obtained actual indicators of financial ratios with certain regulatory values (Vetoshkina and Tukhvatullin, 2015). In turn, the regulatory values may fluctuate, which leads to difficulties in assessing borrowers by the banks. Fluctuations in the ratio values are associated with many factors: starting with internal ones, for example, the introduction of new production technologies, and ending with

external ones, for example, current state of the economy. In foreign countries, the economists are still developing various approaches to calculating the regulatory values of financial ratios (Abdel-Kader, 2011).

Rating

Based on the foregoing, we believe that it is impossible to apply the uniform regulatory requirements on the values of financial indicators to the enterprises of various industries (Kulikova et al, 2016). To analyze the industry differences, we selected 30 enterprises. This sample included ten companies involved in construction, ten from the field of consumer goods industry and ten from the field of food industry. Based on their accounting (financial) statements, we calculated the liquidity ratios, the profitability of sales and the turnover of accounts payable and accounts receivable. The following rules were used to select the ratios: the most complete reflection of the financial status of the organization, a small number of calculated ratios (to avoid cumbersome and laborious calculations), and no duplication. According to the study results, none of the ratios was a duplicate, the connection tightness was moderate. The next step in developing the methodology is to determine the ratio weights for the subsequent ranking. To do this, we used the data of methods for determining the creditworthiness of four commercial banks and derived the average value of the specific weight of each ratio. The next step in developing the methodology is to determine the ratio weights for the subsequent ranking. The minimum weight value was set at 0.1, which corresponded to the minimum ratio value. The remaining ratios were calculated in increments of 0.05, the data are presented in Table 1.

Table 1 - Determination of the weight of financial indicators of the developed methodology

Indicator name	Indicator weight in the methodology				Total indicator weight	Average weight	Indicator number	Indicator weight in the methodology
	Bank 1	Bank 2	Bank 3	Bank 4				
1	2	3	4	5	6	7	8	9

Absolute liquidity ratio (R1)	0.05	-	0.05	0.04	0.14	0.047	5	0.1
Current liquidity ratio (R2)	0.40	0.08	0.11	0.38	0.97	0.243	1	0.3
Sales profitability ratio (R3)	0.15	0.15	0.13	0.11	0.54	0.135	2	0.25
Accounts payable turnover ratio (R4)	-	0.06	0.06	0.08	0.2	0.067	3	0.2
Accounts receivable turnover ratio (R5)	-	0.03	0.06	0.06	0.15	0.050	4	0.15

Also, we have determined the criteria values that allow classifying borrowers to one of four categories. The ranges were calculated by

dividing the population into four parts and outputting the industry average value for each ratio in Table 2.

Table 2- Category definition of financial indicators

Ratio	Borrower's category			
	1	2	3	4
	Construction			
Absolute liquidity ratio	more than 1.1	from 0.2 to 1.0	from 0.05 to 0.1	from 0 to 0.05
Current liquidity ratio	more than 2.5	from 1.3 to 2.4	from 0.3 to 1.2	from 0 to 0.3
Sales profitability ratio	more than 0.2	from 0.05 to 0.2	from 0 to 0.04	less than 0
Accounts payable turnover ratio	more than 20.3	from 20.2 to 53.9	from 54 to 79	more than 80
Accounts receivable turnover ratio	less than 36.1	from 36.2 to 80.2	from 80.3 to 113.6	more than 113.7

Enterprises engaged in the consumer goods industry

Absolute liquidity ratio	more than 0.6	from 0.06 to 0.5	from 0.03 to 0.05	from 0 to 0.03
Current liquidity ratio	more than 3.0	from 1.2 to 2.9	from 0.9 to 1.2	from 0.8
Sales profitability ratio	from 0.6	from 0.05 to 0.5	from 0 to 0.05	less than 0
Accounts payable turnover ratio	from 15	from 16 to 40	from 41 to 90	from 91
Accounts receivable turnover ratio	less than 20	from 20.1 to 57.8	from 57.9 to 88.9	from 90
Enterprises engaged in the food industry				
Absolute liquidity ratio	more than 0.5	from 0.2 to 0.5	from 0.02 to 0.1	from 0 to 0.02
Current liquidity ratio	more than 3	from 1.2 to 2.9	from 0.3 to 1.1	from 0 to 0.5
Sales profitability ratio	more than 0.4	from 0.06 to 0.3	from 0 to 0.05	less than 0
Accounts payable turnover ratio	less than 11	from 11.1 to 27.2	from 27.3 to 79	more than 80
Accounts receivable turnover ratio	less than 27.1	from 27.2 to 49.3	from 49.4 to 95	more than 95

It should be noted that this technique has its disadvantage in the idea of monotonic threshold values for class definition, but we take into

account that the credit expert conducts a dynamic analysis of indicators to better understand the organization's position.

$$S = \sum_{i=1}^5 X_i \times \text{Category } R_i, \quad (1)$$

where: S - total estimation of financial indicators;

X_i - specific weight of the i -th indicator;

Категория K_i - category of the i -th indicator.

If we apply the weights to the formula calculated earlier, we get:

$$S = 0,1 \times R_1 + 0,3 \times R_2 + 0,25 \times R_3 + 0,2 \times R_4 + 0,15 \times R_5 \quad (2)$$

Taking into account the minimum and maximum value of the scores obtained with the help of formula 2, they can be assigned to the analyzed

organization to characterize its financial state, depending on the received rating score when assessing the financial condition of the borrower.

Table 3- Classification groups of the preliminary financial state of the organization

Rating score	Financial state estimation	Scores
1-1.25	The enterprise is solvent, the risk of credit non-repayment is minimal	100
1.26-2.00	A stable financial position, the borrower can be considered as a potential	75
2.01-2.50	The financial position of the borrower is average, it is required a balanced approach	50
2.51-3.25	The financial position of the borrower is worse than average, it is required a balanced approach	25
3.26-4.00	The extremely unstable financial situation of the enterprise, possible bankruptcy	0

Conclusions

Based on the final rating evaluation, it is calculated the borrower's financial position. For a more detailed analysis, we use five quality categories of the financial indicators of the organizations, and put up the scores in accordance with them. The scores presented are recommendatory, each commercial bank appoints them independently on the basis of an expert opinion. This methodology is part of the overall methodology for assessing the financial soundness and creditworthiness of the borrower. To use the methodologies with the industry characteristics, it is necessary to have a sufficient basis for analyzing and determining the criterial values.

Summary

The article is devoted to the problem of a choice of businesses' creditworthiness estimation method, criteria of creditworthiness, defining the ways of its estimation based on a system of financial ratios (financial stability, cash flow analysis, business risk etc.) The main attention is paid to small businesses (SB) creditworthiness assessment and a choice of financial ratios, considering credit policy of a bank and operating conditions of SB. For an assessment of SB creditworthiness the authors single out five groups of ratios including liquidity rates,

efficiency, financial leverage, profitability and debt servicing. Research of commercial banks experience allowed choosing business risk as an assessment of a client's credit worthiness. The authors focus attention on business risk factors; offer their grouping on stages of funds circulation and SB creditworthiness analysis procedure as follows: carrying out the general analysis of a business and its rating assessment - definition of a credit worthiness class.

Conflict of Interest

The author confirms that the data presented does not contain any conflict of interest.

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