Methodological Aspects Concerning Evaluation of the Financial Stability of Companies in the Crisis Economy Conditions

Aspectos metodológicos relativos a la evaluación de la estabilidad financiera de las empresas en condiciones de crisis económica

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Abstract.

The financial stability of a company is one of the most important criteria for assessing the situation of enterprises both for the current period and for subsequent periods of functioning. Of course, every enterprise wants to have business liquidity, otherwise the basis of entrepreneurship collapses; however, the purpose of doing business is to make a profit. An enterprise can make good profits, but at the same time have large liabilities, that is, debts. In this case, it is difficult to call the company financially stable. The onset of the economic crisis in the Russian Federation only prompts the conduct of such studies. Firstly, because it is necessary to understand how the situation in the country's economy as a whole affects a single enterprise, and secondly, what the prerequisites for this influence can be noticed in advance and how to try to prevent them. The relevance of this study lies in the fact that today in Russia there are a number of difficulties with assessing the status of organizations and their adequate comparison with reality. There are many different methods for assessing the financial condition and, in particular, the financial stability of a company. However, when choosing one of them, it is necessary to consider them in order to identify the shortcomings of their application to certain market conditions. Identification of these disadvantages of different theories will allow us to competently and reliably analyse the financial condition of various companies. It is also worth noting that this topic is relevant not only for the companies themselves. The presence of positive dynamics of financial stability indicators as an integral part of the financial condition of the enterprise is one of the most important bases of investment attractiveness. Therefore, not only a company itself is interested in such studies in the inside, but also other market entities from the outside.

Keywords: methodology, equity, liquidity, financial stability, bankruptcy, integrated assessment

Resumen

La estabilidad financiera de una empresa es uno de los criterios más importantes para evaluar la situación de las empresas tanto para el período actual como para los períodos posteriores de funcionamiento. Por supuesto, cada empresa quiere tener liquidez comercial, de lo contrario, la base del emprendimiento se derrumba; sin embargo, el propósito de hacer negocios es obtener ganancias. Una empresa puede obtener buenas ganancias, pero al mismo tiempo tener grandes pasivos, es decir, deudas. En este caso, es difícil llamar a la empresa financieramente estable. El inicio de la crisis económica en la Federación de Rusia solo provoca la realización de tales estudios. En primer lugar, porque es necesario comprender cómo la situación en la economía del país en su conjunto afecta a una sola empresa, y en segundo lugar, cuáles son los requisitos previos para esta influencia de antemano y cómo tratar de prevenirlos. La relevancia de este estudio radica en el hecho de que hoy en Rusia existen varias dificultades para evaluar el estado de las organizaciones y su adecuada comparación con la realidad. Existen muchos métodos diferentes para evaluar la situación financiera y, en particular, la estabilidad financiera de una empresa. Sin embargo, al elegir uno de ellos, es necesario considerarlos para identificar las deficiencias de su aplicación a ciertas condiciones del mercado. La identificación de estas desventajas de diferentes teorías nos permitirá analizar de manera competente y confiable la situación financiera de varias compañías. También vale la pena señalar que este tema es relevante no solo para las propias empresas. La presencia de una dinámica positiva de los indicadores de estabilidad financiera como parte integral de la situación financiera de la empresa es una de las bases más importantes del atractivo de la inversión. Por lo tanto, no solo una empresa en sí está interesada en tales estudios en el interior, sino también en otras entidades del mercado desde el exterior.

Palabras clave: metodología, equidad, liquidez, estabilidad financiera, bancarrota, evaluación integrada

Introduction

The financial stability of an enterprise is the main component of its financial situation, representing the most spacious and concentrated margin of safety, as well as reflecting the degree of investment in this enterprise. This is the content of the financial condition, which characterizes the solvency of the enterprise.

The objective of the financial stability analysis is to assess the degree of independence from borrowed financing sources.

The financial stability of an enterprise is due to its financial independence, as well as the degree of provision with its own capital and bank loans received to purchase its non-current assets, inventories and costs, cash and receivables within the normal range.

The monitoring of financial stability is a fundamental task of management during the entire functioning period of a construction company in order to provide its independence from external partners and the rationality of covering assets with financial sources (Levkina & Titova).

Materials and methods

Currently, there is no unanimous and unambiguous approach of economists to the main indicators characterizing financial stability. Different economists recommend and use in practice different methods for assessing financial stability.

Existing techniques for analysing financial stability are classified according to the methods used and the tasks that they perform.

According to their applied methods, the financial stability analysis techniques are divided into:

- Techniques based mainly on the analysis of financial ratios;

- Techniques using additionally vertical and horizontal analysis of various analytical tables, and other methods (Levkina & Titova).

Methodological approaches to assessing financial stability are divided into:

- General financial analysis;

- Calculation of the enterprise rating;

- Prediction of bankruptcy of an enterprise.

Table 1 shows the grouping of financial analysis structures by the considered authors; the components of structures are grouped by the commonality of the content. "The most common financial stability analysis blocks are: analysis of solvency, financial independence (sustainability, stability) analysis, analysis of the assets and liabilities structure, as well as business activity analysis (turnover, productivity of capital resources), profitability (earning power, return), and liquidity analysis. These areas can be described as the main ones in the analysis of the financial stability of an enterprise" (Levkina & Titova).

Table 1. Groups of directions for financial stability analysis of enterprises

Analysis components	V.V. Kovalev	Savitska ya G.V.	A.D. Sheremet, R.S. Sayfulin	I.T. Balabanov	O.V. Efimova
Solvency	¬	+	+	¬	+
Financial independence, sustainability, stability	+	+	+	+	+
Asset and liability structure		+	+	¬	+
Business activity, turnover, capital efficiency	+	+	¬	+	+
Profitability, earning power, return	+	¬	¬	+	+
Liquidity	+	¬	+		¬
Creditworthiness	¬	+	¬	+	¬
Potential bankruptcy	¬	+	¬	¬	¬
Leverage	¬	+	¬	¬	¬

Property status	+	¬	¬	¬	¬
Self-financing	¬	¬	¬	+	¬
Currency self-sufficiency	¬	¬	¬	+	¬
Securities market position	+	¬	¬	¬	¬
Necessary increase in equity	¬	¬	+	¬	¬

Table 1 considers only some of the most common indicators used in the analysis of the financial condition of an enterprise in both domestic and foreign practice. The presented selection of methods by the most authoritative Russian authors is not exhaustive, but indicative, since it demonstrates differences in approaches to the analysis in terms of the number of stages, the set of indicators, the complexity of the implementation, and other criteria.

The undoubted advantage of rating models is their simplicity. At the same time, methods for determining the weighted values of indicators do not always provide the necessary accuracy. The most popular rating model belongs to the American economist D. Duran. The principle of this model is to summarize the three main indicators that analyse the solvency of an enterprise with certain weighting factors.

"The following foreign methods of analysing bankruptcy risk are distinguished in economic theory: E. Altman, W. Beaver, G. Springate, F. Lis, and R. Tuffler" (Levkina & Nushtaykina, 2017). "The imperfection of foreign analytical models has led to the development of proprietary analysis methods that take into account factors not previously considered and are then integrated into the formula for the final integrated indicator that reflects the risk of bankruptcy of an enterprise" (Vasilenko & Titova, 2019; Baroughi, & ZAREI, 2013; Fujo, & Dida, 2019).

In this regard, a comprehensive assessment of financial stability is proposed which does not only use generally accepted indicators, but is also supplemented by an integral indicator that will allow the results obtained to combine together, see Figure 1.

Thus, the authors' methodological approach to assessing the financial stability of companies is supplemented by an integrated assessment of financial stability and a block for determining managerial decisions to increase financial stability. By comparing the actual values with the normative ones, deviations from them and cause-effect relationships of this dynamics are calculated. The reserves of increasing the financial stability of the company are determined on the basis of the analysis of deviations and reasons for their decrease.

Analysis and Results

We present the testing of the authors' methodology using the example of Dental-Express LLC, the main activity of which is the wholesale of pharmaceutical products.
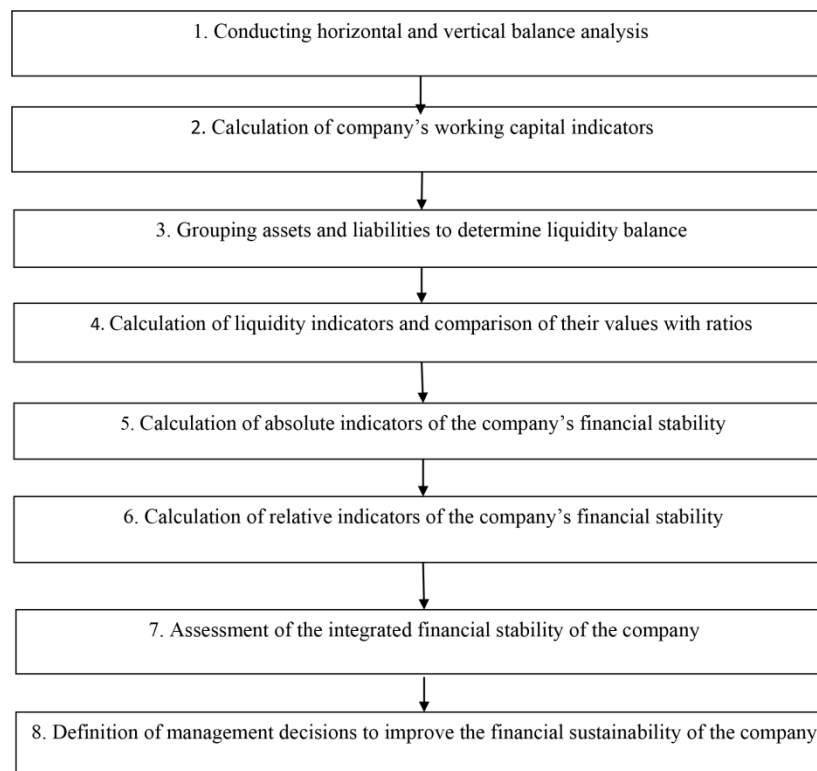
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Figure 1. Stages of assessing the financial stability of a company using the improved methodology

According to the authors' methodological approach, for a start, we will consider horizontal and vertical analysis of the company's balance (Olinichenko, 2015; Luo, et al, 2018). Let us analyse the dynamics and structure of property and capital of Dental Express LLC for 2017 - 2019 in table 2.

Table 2. Horizontal and vertical analysis of the balance sheet of Dental Express LLC for 2017-2019.

Thousands of roubles

Indicators	2017		2018		2019		2019/2018		2019/2017	
	Amount	%	Amount	%	Amount	%	Behaviour	Growth rates, %	Behaviour	Growth rates, %
Fixed assets	13373	70,4	12942	94,7	12942	83,8	-	100	-431	96,8
Total non-current assets	13373	70,4	12942	94,7	12942	83,8	-	100	-431	96,8
Stocks	20	0,1	-	-	1859	12,0	1859	-	1839	93-fold
Accounts receivable	5293	27,9	501	3,7	498	3,2	-3	99	-4795	9,4
Cash	310	1,6	220	1,6	144	0,9	-76	65	-166	46,5
Total current assets	5623	29,6	721	5,3	2501	16,2	1780	347	-3122	44,5
Total assets	18996	100	13663	100	15443	100	1780	113	-3553	81,3

Authorized capital	10	0,1	10	0,1	10	0,1	-	100	-	100,0
Retained earnings	12352	65,0	13504	99,6	14457	93,6	953	106	2105	117,0
Equity	12362	65,1	13514	98,9	14467	93,7	953	106	2105	117,0
Long term liabilities	6131	32,3	-31922	-233,6	-9978	-64,6	21944	31	-16109	-162,7
Short-term liabilities, including:	503	2,6	32071	234,7	10954	70,9	-21117	34	10451	22-fold
Accounts payable	503	2,6	32071	234,7	10954	70,9	-21117	34	10451	22-fold
Total	18996	100	13663	100	15443	100	1780	113	-3553	81,3

In general, an analysis of the property and capital of Dental Express LLC revealed a negative tendency to decrease the total value of the property by 28.7% and a positive tendency to increase equity by 17%. Analysis of the balance sheet structure of Dental Express LLC for 2017 - 2019 revealed that the largest part of the balance sheet asset is non-current assets (about 70%), which are represented exclusively by fixed assets.

The largest share of sources of financing is equity, namely retained earnings, which share in 2019 compared with 2018 is reduced by 3%. Next, we consider the liquidity balance of Dental Express LLC in table 3.

Table 3. Assessment of the balance liquidity of Dental Express LLC for 2017 - 2019
Thousands of roubles

	Assets	2017	2018	2019		Liabilities	2017	2018	2019
A_1	Most liquid assets	310	220	144	L_1	Maturing liabilities	503	32071	10954

A₂	Marketable assets	5293	501	498	L₂	Short-term liabilities	-	-	-
A₃	Slowly moving assets	20	-	1859	L₃	Long-term liabilities	6131	-31922	-9978
A₄	Sticky assets	13373	12942	12942	L₄	Permanent liabilities	12362	13514	14467
	Balance	18996	13663	15443		Balance	18996	13663	15443

For the entire analysed period, the most liquid assets do not cover the most urgent liabilities; therefore the balance of Dental Express LLC can be called absolutely illiquid. The difference in absolute value between the most liquid assets and the maturing liabilities is large and for 2017-2019 tends to increase both in percentage and in absolute terms.

Table 4. Fulfilment of the liquidity conditions of Dental Express LLC for 2017 - 2019

Thousands of roubles

Absolute accounting liquidity conditions	2017		2018		2019	
A1> L1	-207	A1<L1	-31851	A1<L1	-10810	A1<L1
A2 >L2	5293	A2 >L2	501	A2 >L2	498	A2 >L2
A3> L3	-6111	A3< L3	-31922	A3< L3	-8119	A3< L3
A4 <L4	1011	A4>L4	-572	A4 <L4	-1525	A4 <L4

At the next step, we will evaluate the relative solvency indicators of Dental Express LLC for 2017-2019.

Table 5. the Dynamics of the relative indicators of the solvency assessment of Dental Express LLC for 2017-2019.

Indicator	Normal	2017	2018	2019	Deviation

	value				2018/ 2017	2019/ 2018
Absolute liquidity ratio	>=0,2	0,616	0,007	0,013	-0,609	0,006
Quick liquidity ratio	>=0,7	11,139	0,022	0,059	-11,117	0,036
Current liquidity ratio	≥ 2	11,179	0,022	0,228	-11,156	0,206

The solvency analysis of Dental Express LLC revealed that the company is insolvent by the end of the period under analysis. The definition of the financial stability type for Dental Express LLC is presented in table 6.

Table 6. Absolute financial stability analysis of Dental Express LLC for 2017-2019. Thousands of roubles

Indicator	2017	2018	2019
Sources of equity	12362	13514	14467
Fixed assets	13373	12942	12942
Availability of working capital	-1011	572	1525
Long-term loans and credits	6131	-31922	-9978
Availability of own and long-term borrowed funds for stock holding	-7142	32494	11503
Short-term loans and borrowings	-	-	-
Total value of the main sources of funds to cover stocks and costs	-7142	32494	11503
Inventory and costs	20	0	1859
Surplus (+), or lack (-) of working capital to cover inventories and costs	-1031	572	-334
Surplus (+) or lack (-) of working capital and long-term borrowed funds to cover inventory and costs	-7162	32494	9644
Surplus (+) or lack (-) of the total amount of sources of funds to cover stocks and costs	-7162	32494	9644

Three-component indicator of the type of financial stability	S=(0;0;0)	S=(1;1;1)	S=(0;1;1)

An analysis of the sources for formation of reserves and indicators for the availability of reserves with sources of financing concerning Dental Express LLC for 2017 - 2019 revealed that only in 2018 the company had the opportunity to fully fund reserves at its own expense. The type of financial stability of the company in 2017 is defined as a "crisis financial situation", but by the end of 2019, we can say that Dental Express LLC has normal financial stability. Sustainability can be restored by justifiably reducing stocks and costs and reimbursing long-term loans.

The level of financial stability is determined through the calculation of the coefficients presented in table 7

Table 7. The main indicators of financial stability at Dental Express LLC for 2017-2019.

Indicator name	Indicator value			Change	Normative value
	2017	2018	2019		
Equity to total assets ratio	0,65	0,99	0,94	0,29	Normal value for the industry: 0.4 or more (optimal 0.5-0.7)
Financial leverage ratio	0,54	0,01	0,07	-0,47	Normal value for the industry: 1.5 or less.
Own working capital ratio	-0,18	0,79	0,61	0,79	Normal value: not less than 0.1.
Fixed asset indicator	1,08	0,96	0,89	-0,19	-
Current assets to equity ratio	-0,08	0,04	0,11	0,19	Normal value for the industry: 00.15 and more.

The results obtained make it possible to see that Dental Express LLC is characterized by independence from external sources of financing; the equity to total assets ratio of the company as of 2019 was 0.94 (the share of own funds in the total amount of sources of financing at the end of the reporting period was 94%). The value of the fixed asset ratio

indicates a high share of fixed assets and non-current assets in the sources of equity.

Most financial stability ratios are higher than the normative values; therefore, during the analysed period, Dental Express LLC has sufficient market financial stability. The positive dynamics of almost all of the obtained coefficients indicates an increase in market financial stability of Dental Express LLC.

Given figure 1, it is necessary to conduct an integrated assessment of the financial stability of the company. It is proposed to apply the integral method designed by S.A. Kucherenko, who justified the system of performance indicators and identified five groups of financial stability of companies (Kucherenko, 2014).

"Using discriminant analysis methods, the author obtained a model for assessing financial stability, which is a linear combination of selected observable quantities

$$\sum X = 1{,}732 * X1 + 12{,}488 * X2 + 50{,}121 * X3 + 55{,}515 * X4 + 32{,}148 * X5 \qquad (1),$$

Where

X1 - current liquidity ratio;

X2 - intermediate coverage ratio;

X3 - specific weight of payables in balance-sheet total;

X4 - equity to total assets ratio;

X5 - return on sales" (Kucherenko, 2014).

It is possible to develop relevant management decisions to achieve the target positions based on criteria values, taking into account the obtained values of the indicators. Recommended indicator values are shown in table 8.

Table 8. Recommended values for integrated assessment of financial stability of companies according to the method by S.A. Kucherenko (Kucherenko, 2014)

Group	The financial state of the company	Interval value
I	"Companies with a significant margin of financial stability and solvency"	[116,6 and

		more)
II	"Financially sustainable companies"	[57,7-116,6)
III	"Enterprises with average values of rated indicators or with individual signs of deterioration in financial stability"	[38,7-57,7)
IV	"Enterprises in pre-crisis condition"	[21,2 – 38,7)
V	"Companies being in an on-going state of economic crisis, characterized, as a rule, by a lack of equity (capital) and their recovery trends"	(0<21,2)

For 2017-2018, the integrated financial stability assessment is 198.43 and 174.06 units at the analysed enterprise; this reflects a significant margin of financial stability and solvency and corresponds to the first group. However, in 2019, the company can be described as financially stable and can already be attributed to the second group of financial stability. Negative dynamics is associated with a multiple decrease in the liquidity ratios over the analysed period and a decrease in profitability by 4.5%.
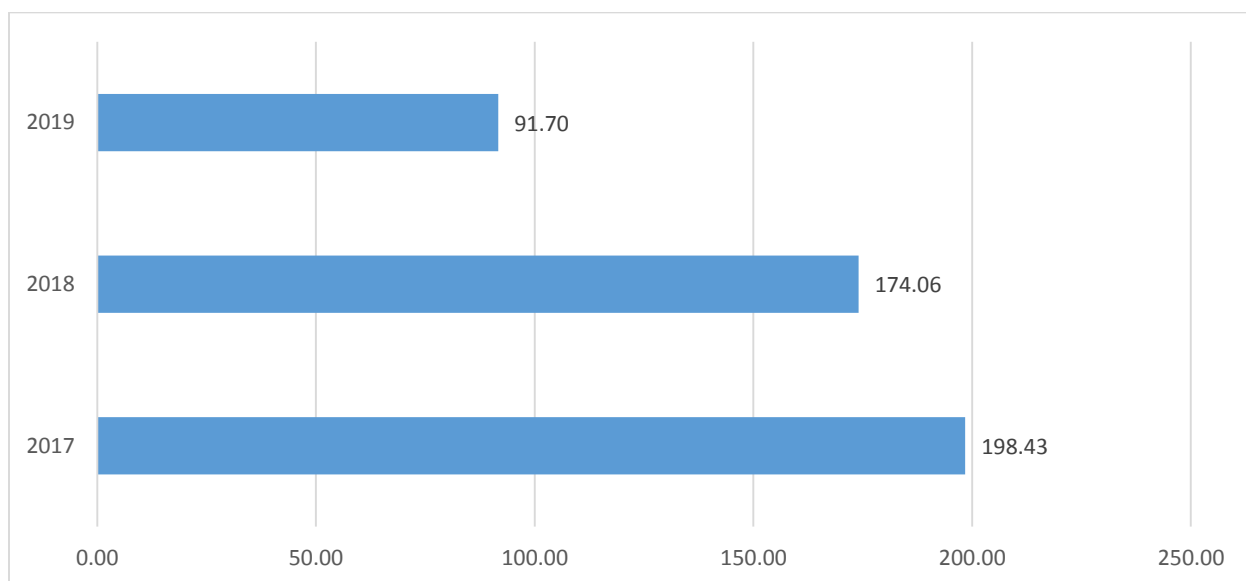

Figure 2. Integral financial stability assessment of Dental Express LLC according to the method by S.A. Kucherenko

Conclusions

Thus, the use of the integrated indicator allows one to comprehensively assess financial stability, taking into account the profitability and operating ratio, solvency over the long term, and the share of receivables in the total amount of the company property.

Taking into account the comprehensive assessment results for the financial stability of Dental Express LLC, the following areas of its development are necessary:
- Reduction in inventory and costs; increasing the profitability of sales;
- Ensuring the growth of positive cash flow through the transfer of low-liquid assets to highly liquid ones;
- Ensuring the rhythmic receipt of funds from debtors, and a large "margin of safety" in terms of solvency.

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