

Improving Methodical Approaches to Estimating Financial Safety of the Enterprise

Mejorar los enfoques metodológicos para estimar la seguridad financiera de la empresa

Roman Vladimirovich KOLUPAEV [1](#); Olesya Mikhailovna FADEEVA [1](#); Alexander Ivanovich ARDASHEV [1](#); Roman Anatolyevich NOVIKOV [1](#); Kostyantyn Anatol'evich LEBEDEV [2](#)

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RESUMO:

It has been determined that there are two approaches to estimating the level of financial safety – qualitative and quantitative approaches. However, these approaches must be specified in the context of modern conditions. The combination of classical statutory values with the average indicators offered by us in terms of sectors allowed to make the financial analysis more objective and accurate. Specific values of coefficients and selection of the adjustment coefficients were determined on the basis of both real average values according to types of the economic activity of Russian material production, and recommended statutory values. According to the results of the research, it has been determined that the enterprise can obtain one of three types of financial safety estimates: critical, insufficient, and sufficient. The critical estimate means a considerable financial danger in the enterprise activity. The insufficient estimate says about a number of problems at the enterprise. In the future they can cause crisis phenomena. The sufficient estimate means financially safe condition of the enterprise.

Keywords: financial safety, enterprises, coefficient, management, analysis, methodology, economy

ABSTRACT:

Se ha determinado que existen dos enfoques para estimar el nivel de seguridad financiera: enfoques cualitativos y cuantitativos. Sin embargo, estos enfoques deben especificarse en el contexto de las condiciones modernas. La combinación de valores estatutarios clásicos con los indicadores promedio que ofrecemos en términos de sectores nos permitió hacer el análisis financiero más objetivo y preciso. Los valores específicos de los coeficientes y la selección de los coeficientes de ajuste se determinaron sobre la base tanto de los valores medios reales según los tipos de actividad económica de la producción rusa de materiales como de los valores reglamentarios recomendados. Según los resultados de la investigación, se ha determinado que la empresa puede obtener uno de los tres tipos de estimaciones de seguridad financiera: crítica, insuficiente y suficiente. La estimación crítica significa un peligro financiero considerable en la actividad de la empresa. La estimación insuficiente dice acerca de una serie de problemas en la empresa. En el futuro pueden causar fenómenos de crisis. La estimación suficiente significa condición financieramente segura de la empresa.

Palabras clave: seguridad financiera, empresas, coeficiente, gestión, análisis, metodología, economía

1. Introdução

In the context of crisis tendencies related to the development of the global economy, enterprises perform their activity under the impact of a number of destabilizing factors. It is possible to single out the following factors: imperfection of legislation, unfair competition, and a low level of the enterprises financial safety.

The problem related to ensuring the enterprises financial safety as a tool to protect from the impacts of external and internal threats requires its compliance with the flexibility and continuity criteria, as well as the need to agree and fulfill financial interests of the management subjects. Under such conditions the primary need for economic subjects is to search for new approaches to providing and managing the enterprise financial safety.

Issues related to estimating the enterprise financial safety were considered by V.A. Baburin (2016), E.V. Belskaya (2013), K.V. Galitskova (2016), I.G. Yandulova (2012), R. Kent (2004), A.A. Sirotskiy (2016) et al.

In spite of a comprehensive nature and depth of the conducted researches, the majority of them are devoted to the issues related to developing and forming financial levers and subsystems of the enterprise financial safety. That is why in the future it is necessary to research issues related to improving the methodology to estimate the level of the enterprise financial safety formed under the impact of the current system of corporate management.

2. Methodology

The main problems related to estimating the enterprise financial safety include imperfection of the methodology related to the coefficient analysis for forming estimation values for models and coefficients (Elgers, et. al. 2001; Fedulin, et. al. 2015). In this aspect the system of indicators related to the enterprise financial safety can be represented as Table 1. It shows formula to calculate indicators, their economic content and current statutory values.

Table 1 - Key Indicators of Financial Analysis of the Enterprise Activity

Coefficient	Calculation formulae		Economic content	Statutory value
	numerator	denominator		
Coefficient of capital assets wear	Amount of capital assets wear	Balance cost of capital assets	It characterizes the degree of wear of capital assets	< 0.5
Return on capital assets	Net income from sold products	Average annual cost of capital assets	It characterizes the efficiency of using capital assets	> 1
Profitability of assets	Net profit	Average cost of assets for the period	It allows to define the efficiency of using assets	> 0.05
Assets circulation coefficient	Net profit	Average cost of assets for the period	It defines the potential of the enterprise related to earning profit under the current investments and capital structure	-

Coverage ratio	Current assets	Short-term obligations	It characterizes the sufficiency of working assets to repay debts	> 2
Financing coefficient	Average cost of indebtedness for the period	Average cost of own capital for the period	It defines the correlation of the total debt and own capital	< 1
Coefficient of payment capacity loss	Income from selling	Expenses	It shows how flow of funds can be decreased under the possibility to make the required payments	> 1

The offered methodology is based on calculating coefficients according to the data of the financial statements of enterprises with the further processing of results by means of descriptive statistics. Herewith, when performing descriptive statistics, it is offered to select representative values.

This selection must be made by deselecting non-typical values. As a rule, these are 2-3 values that most of all differ both in terms of increase and decrease. In order to form the quantitative methodology to estimate enterprises financial safety, we offer to use a comprehensive methodology with the integral value of 100 points.

It is offered to define the level of the financial safety depending on the number of the accrued points, as well as the number of points that comply with any coefficient on the basis of the expert estimates of officers of the economic department of the enterprise.

It is offered to estimate the financial safety according to the following formula (1):

$$\left\{ \begin{array}{l} O = \sum_{i=1}^n MAX_i \cdot K_i \\ K_i = 1, P_i > t_i, \\ K_i = 0,5, P_i \in t_i \\ K_i = 0, P_i < t_i \end{array} \right\} \quad (1)$$

where O is an integral estimate of the financial safety level; MAX_i is a maximum number of points according to i coefficient; K_i is an adjustment coefficient, and P_i is an actual value of i coefficient.

As based on the general directionality of the article, to our mind, the financial safety indicators are the key ones, we offer such allocation of the contribution of every coefficient in the total results (Table 2).

Table 2 - Maximum Point Estimates in Terms of Separate Coefficients of the Financial Analysis to Estimate the Level of the Enterprise Financial Safety

Coefficient	Maximum number of points
Coefficient of capital assets wear	10
Return on capital assets	10
Profitability of assets	10

Assets circulation coefficient	10
Coverage ratio	20
Financing coefficient	20
Coefficient of payment capacity loss	20
Maximum possible number of points	100

The next step must be defining values of the indicators by using adjustment coefficients – a number of points given by the analyst. We offer to classify the value of adjustment coefficients into three groups: 0, 0.5, and 1. It is necessary to do it taking into account three types of estimates of the financial safety level: critical, insufficient, and sufficient.

3. Results

When making a research, we selected data from 65 enterprises specializing in various types of economic activity of the material production of the Russian Federation (metallurgic production, production of metallic products, chemical production, production of machines and equipment, gas and oil industry, light and food industry, production and distribution of power energy).

For the data and obtained results of the analysis to be objective enough and statistically appropriate, we have taken forms of financial statements of enterprises for 2011-2015. The obtained calculations happened to be rather accurate. For some coefficients in separate areas (energetic, machine-building) we minimally filtered them because the spread of values was rather inconsiderable. On average, about 62% of indicators were related to a rather narrow group of values.

Thus, the obtained average values comply with the real average values of enterprises whose operation is related to the material production of various types of economic activity. Table 3 shows average values of basic financial and economic coefficients in terms of types of the economic activity.

Table 3 - Average Values of Key Financial Coefficients of Enterprises According to Types of Economic Activity in the Russian Federation

Type of economic activity	Coefficient of capital assets wear	Return on capital assets	Profitability of assets	Assets circulation coefficient	Coverage ratio	Financing coefficient	Coefficient of payment capacity loss
Chemical production	0.51	1.55	0.03	0.71	1.55	0.38	1.08
Production of machines and equipment	0.48	0.93	-0.01	0.36	1.66	1.02	0.93
Gas and oil industry	0.45	2.80	0.03	1.02	1.44	1.31	1.06
Metallurgic industry	0.57	3.03	0.06	1.17	1.55	0.96	1.09

Production and distribution of power energy	0.54	1.73	-0.04	0.68	0.83	1.78	0.94
Light and food industry	0.27	2.76	0.02	1.15	1.07	1.42	1.03
Statutory values	< 0.5	> 1	> 0.05	-	> 2	< 1	> 1

The analysis of the basic financial coefficients according to types of economic activity showed that there were corrupted and inaccurate tools of analysis. For the majority of indicators we have considered, the real average indicators according to areas differ from the recommended statutory values, i.e. on the general background the enterprise can have a relatively stable financial state and perform rather efficient activity, while the existing standards will characterize its financial state as negative. It may affect relations with creditors, counteragents, and investors.

The combination of classical statutory values with the average indicators we offered in terms of areas will allow to make the financial analysis more objective and accurate. We defined specific values of coefficients and selection of the adjustment coefficient for them on the basis of both real average values according to types of economic activity of the Russian material production area, and recommended statutory indicators (Table 4).

Table 4 - Defining the Adjustment Coefficient According to Key Indicators of the Financial Analysis in Russian Material Production in 2015

Coefficient	Adjustment coefficient		
	0.00	0.50	1.00
Coefficient of capital assets wear	> 0.65	0.45-0.65	< 0.45
Return on capital assets	< 1.00	1.00-1.90	> 1.90
Profitability of assets	< 0.00	0.00-0.04	> 0.04
Assets circulation coefficient	< 0.45	0.45-0.85	> 0.85
Coverage ratio	< 0.75	0.75-0.95	0.95-1.50
Financing coefficient	> 1.10	0.85-1.10	< 0.85
Coefficient of payment capacity loss	< 0.85	0.85-0.95	> 0.95

Thus, when defining the adjustment coefficient, we were basically guided by real data of economy of the Russian Federation without losing the logical relation with the economic content of each specified financial indicators.

The research has shown that according to the results of the analysis, the enterprise can get one of the three types of estimates related to the level of the financial safety: critical (less than 50 points), insufficient (50-70 points), and sufficient (70-100 points). The critical estimate means a considerable financial danger in the enterprise activity. The insufficient estimate says about a number of problems in the activity of the enterprise that in the future may cause crisis phenomena. The sufficient estimate means financially safe state of the enterprise.

We will show the offered methodology related to estimating financial safety of the enterprise

through the example of “Renault Russia” LLC as on 2015 (Table 5).

Table 5 - Defining the Level of Financial Safety of “Renault Russia” LLC for 2015

Coefficient	Coefficient value	Adjustment coefficient	Maximum number points	Real number of points
Coefficient of capital assets wear	0.24	1	10	10
Return on capital assets	3.22	1	10	10
Profitability of assets	-0.02	0	10	0
Assets circulation coefficient	1.44	1	10	10
Coverage ratio	1.02	1	20	20
Financing coefficient	0.55	1	20	20
Coefficient of payment capacity loss	1.00	1	20	20
In total	-	-	100	90

4. Discussion

The reliability of the above methodological methods to estimating the enterprise financial safety is proved by the fact that the use of statutory values of coefficients will considerably simplify the work of financial analysts, and their activity results will be more objective.

The practice has shown that the considerable dispersion of coefficients values according to types of the economic activity stipulates a rather broad typical range. It does not allow to get an accurate idea about the limits of the indicator fluctuations where any change will not be interpreted as worsening of the financial state or incompliance with its statutory values.

It is considered to be necessary to use the typical ranges normalized according to the recommended statutory values for the material production as a whole and in terms of separate sectors. It will enable the analyst to most accurately and objectively estimate the enterprise state.

Even taking into account our recommendations, the financial indicators considered above only partially estimate the level of the enterprise financial safety (Karaulova, et. al. 2013; Lebedev 2014). On the one hand, when using a considerable number of coefficients, there is an opportunity to most comprehensively analyze the activity of the enterprise and its current, and probably, future financial state. On the other hand, a lot of financial indicators considerably complicate the work of analysts, and can cause ambiguity as a result of contradictory values of various indicators.

5. Conclusions

It has been determined that there are two approaches to estimating and diagnosing the level of financial safety – qualitative and quantitative approaches. However, these approaches must be specified in the context of modern conditions.

It has been proved that according to the results of the analysis, the enterprise can obtain one

of three types of financial safety estimates; critical (less than 50 points), insufficient (50-70 points), and sufficient (70-100 points). The critical estimate means a considerable financial danger in the enterprise activity. The insufficient estimate says about a number of problems at the enterprise, which can cause crisis phenomena in the future.

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1. Russian State Social University, Russia, 129226, Moscow, Wilhelm Pieck street, 4
 2. Institute for Tourism and Hospitality, Russia, 125438, Moscow, Kronstadt Blvd., 32a
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