COMPLEXESTIMATIONTECHNIQUEOFFINANCIALSTABILITY ASAPPLIESTOMOTORTRANSPORTCOMPANIES

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Key words: economy, finance, market, stability, motor transportation companies, complex technique, analysis, estimation, integrated, system, parameters, management.

In the passage the necessity of the analysis of the financial stability of the motor transportation companies is proved and the complex approach is applied to the analysis. The settlement basis of the technique is made by author's system of parameters which allows receiving the generalizing characteristic of the financial stability by means of methods of the correlation analysis. This approach to the definition of the integrated estimation of the financial stability of the activity of the motor transportation companies unites the following indicators: industrial, technical, social, economic and strategic aspects. The evaluation stages of the financial stability of the companies are presented in the form of an imitating model on the basis of a complex technique.

The financial stability maintenance of the organizations becomes an objective necessity, especially in conditions of the formation of the market economy. This causes an urgent development of the methodical approaches to the complex financial stability analysis which would allow measuring its size, studying its behavior, revealing the basic directions of its growth at a level of the separate organizations and motor transportation branch as a whole.

The aim of the complex financial stability analysis in the complex of parameters reflecting presence, allocation and use of financial resources, is not only their calculation and connection to the certain date. The analysis is a special sort of the technique of the finance management, therefore it is carried out in on all directions and enables to reveal weak and strong units in each specific organization. The complex approach assumes that the investigated system is rather complicated and consists of numerous interconnected subsystems, each of which has its own value and includes a number of parameters for the estimation of activity of the organization. The logic sequence and the contents of stages of the technique of the complex estimation of financial stability of motor transportation companies (MTC) are determined by the developed system of parameters (fig. 1).

The classification of criteria for the financial stability estimation of MTC is given from the point of view of its indicators or components: industrial, technical, social, strategic and economic. Each of them has a quantitative expression through its own group of parameters. All the set of criteria consists of 7 groups.

Namely, the parameters included in the group of the estimation of a property status, serve for the characteristic of the industrial potential of the organization and the efficiency of use of the property.

The parameters for the estimation of business activity reflect the efficiency of the use of the cumulative assets of the organization or their specific kind.

As the dynamism of MTC functioning is largely connected to the results and quality of work of the rolling stock park and the possibility of its use for the transport work, the parameters describing technical stability and the ability of the organization to perform an industrial-commercial activity are necessary for carrying out the complex analysis.

The parameters, included in the group of the personnel efficiency estimation, serve for the comparison of the economic characteristics of the enterprise activity to the number of manpower involved in production. It is obvious that the quality and efficiency of use of the manpower substantially determine the course of financial and economic activity and, eventually, the stability of the financial condition of an enterprise. Besides, the qualified personnel is capable to keep and increase the achieved successes, and to avoid serious drawbacks in MTC management.

The parameters of a monetary stream allow the enterprise management, proprietors and investors to estimate the current activity of the company and the prospects of its further successful work.

The parameters, estimating the structure of the capital, characterize an enterprise's ability

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to pay commitments of finance in terms stipulated by the law and the contract.[1]

The parameters included in the estimation profitability group reflect a financial position of the enterprise, an efficiency of the management of the economic activities, available assets and MTO proprietors' investments.

The results of the performed analysis and estimation of the industrial, technical, social, strategic and economic components of the MTC financial stability should be used for receiving of the complex integrated characteristic which will promote, in its turn, the formation of perspective models and the development of the programs of dynamical development of the motor transportation branch. The evaluation stages of the financial stability on the basis of the complex technique are shown on fig. 2.

The aim of the first block is to set the objectives of the analysis of financial stability which directly determine the completeness and depth of the subsequent estimation. Depending on the objectives in view, the approaches to the analysis and the set of financial stability parameters can vary.

The mainframe contains six stages. The analysis of the initial data includes an estimation of

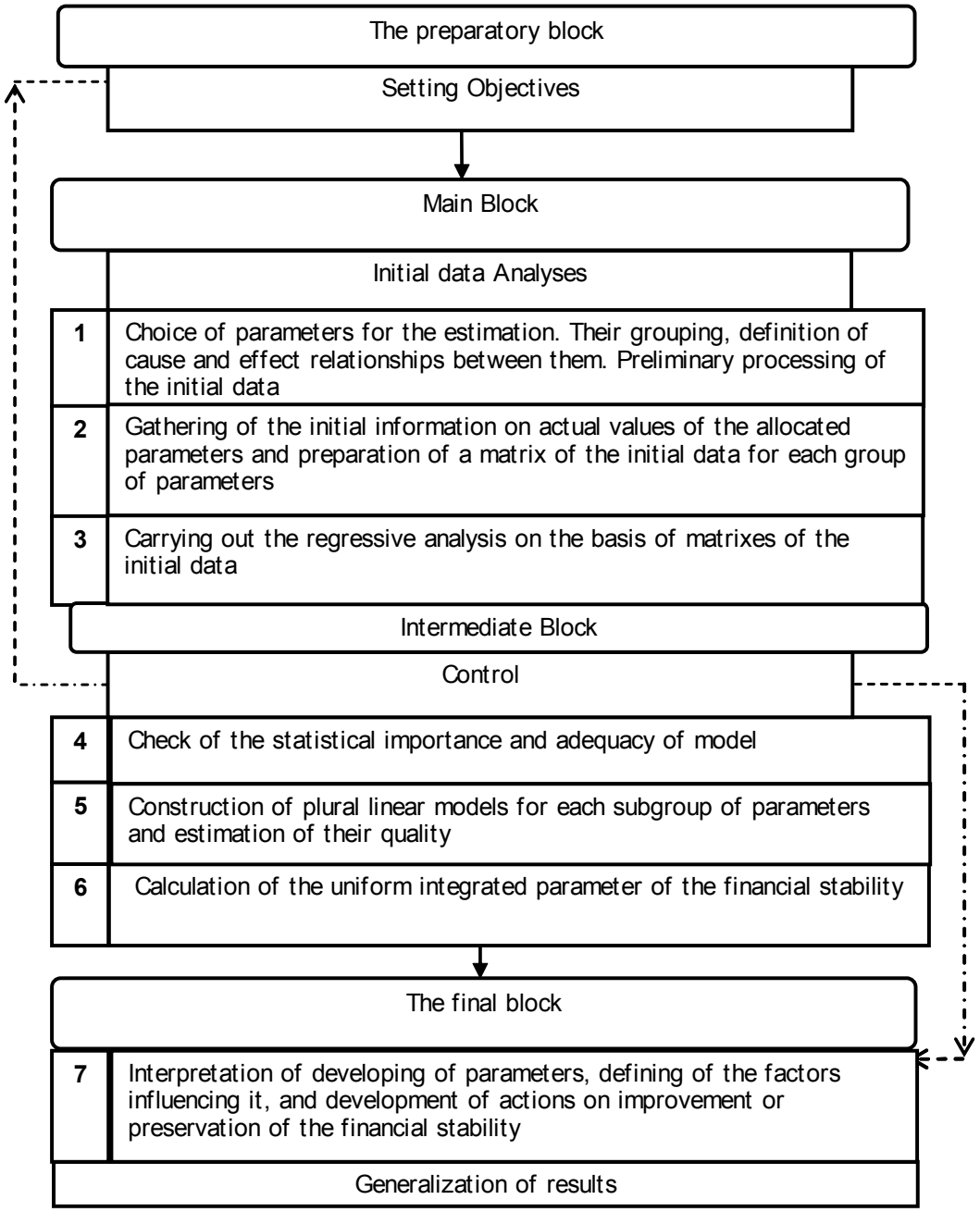

Fig. 2. **Stages of evaluation of the financial stability of the company on the basis of a complex technique**

the financial and economic condition and results of the activity of the company in the following directions:

1. Choice of estimation parameters. Their grouping, defining of cause and effect relationships. Preliminary processing of the initial data.

2. Collection of the initial information on actual values of the allocated parameters and preparation of a matrix of the initial data for each group of the parameters.

3. Carrying out the regressive analysis on the basis of matrixes of the initial data.

4. Check of the statistical importance and adequacy of the model.

5. Construction of plural linear models for each subgroup of parameters and estimation of their quality.

6. Calculation of a uniform integrated financial stability parameter.

The formula of the calculation of the integrated parameter of financial stability can be presented as average arithmetic values of its making:

$$y_{financial.stability} = \frac{y_{f.ind} + y_{f.tech} + y_{f.soc} + y_{f.str} + y_{f.econ}}{5} \cdot 100\%,$$

where $y_{financial.stability}$ - integrated generalizing estimation of the financial stability MTC; $y_{f.ind}$, $y_{f.tech}$, $y_{f.soc}$, $y_{f.str}$, $y_{f.econ}$ are integrated parameters of industrial, technical, social, strategic and economic components of financial stability.

Taking into account that fact that separate indicators of the financial stability include some groups of parameters for their estimation, the initial formula will look as following:

$$y_{financial.stability} = \frac{\frac{y_1 + y_2}{2} + y_3 + y_4 + y_5 + \frac{y_6 + y_7}{2}}{5} \cdot 100\%.$$

However, the considered method does not take into account the importance of the contribution of each of the components of the financial stability in terms of the integrated estimation, which essentially reduces the reliability of the received model as the included parameters, as a rule, differ from each other to a large extent. It is caused by the fact that they quantitatively characterize the results of the internal and external factors which may have different consequences. Therefore considering them as equal can lead to the fact in that the received model of the integrated estimation of the financial stability will be inadequate. To avoid this problem it is necessary to define the specific weight factors with which the individual parameters become part of the integrated estimation.

It is advisable to apply the system effect of the factors included in the equation of regress as weight characteristics of indicators of the financial stability. The contents of the parameter of the system effect refers it to the group of the parameters of the interrelation attributes[2], however his parameter measures not the strength or tightness of connection, but the degree of the coordination of influence of the factors on the result. The system effect pays off under the formula

$$\eta_s^2 = R_{xy1...x_n}^2 - \sum_{j=1}^{K} \beta_j^2,$$

где $R_{xy1...x_n}^2$ - factor of plural determination; β_j^2 - standardized factors of the regress of *j's* individual parameter; *j* - serial number of an individual parameter, $j = 1, 2, ..., K$; *K* - number of the parameters included in the integrated estimation.

The equations of regress for the researched groups of parameters are given in tab. 1.
The formal record of the integrated parameter of the financial stability will look as following:

$$y_{ф.усм} = \frac{\sum_{j=1}^{5}}{5}\left(\frac{0,53y_1 + 0,83y_2}{2} + 0,68y_3 + \right.$$
$$\left. + 0,18y_4 + 0,14y_5\frac{0,43y_6 + 0,92y_7}{2}\right) \cdot 100\%.$$

As the settlement values $y_{financial.stability}$ determined by Lagrange method are within limits from 1 up to 100 %, we shall determine the zone of the absolute financial stability within the limits of 75 % $< y_{financial.stability} \leq$ 100 %; with a high level of stability if the values of this parameter range from 50 up to 75 %; with an average level of stability if the values of this parameter range from 25 % $< y_{financial.stability} \leq$ will define(determine) 50 % and with low stability if the values of this parameter range from 1 % $< y_{financial.stability} \leq$ 25 %.

The intermediate block includes the control that is the main condition of the realization of all process of the analysis, allowing to bring

Table 1

Theequationsofregressfortheresearchedgroupsofparameters*

Component of the financial stability	Group of parameters	The equation of regress
Industrial	1. Property status	$\tilde{y}_1 = 0{,}09 + 0{,}12x_1 + 6{,}15x_2$
	2. Business activity	$\tilde{y}_2 = -0{,}27 + 0{,}15x_3 + 0{,}23x_4$
Technical	3.operational parameters	$\tilde{y}_3 = -0{,}76 + 0{,}58x_1 + 1{,}26x_2$
Social	4. Efficiency of the personnel	$\tilde{y}_4 = 0{,}123 - 0{,}028x_5 - 0{,}037x_6$
Strategic	5. Monetary stream	$\tilde{y}_5 = -0{,}19 + 0{,}46x_7 + 4{,}69x_8$
Economic	6. Structures of the capital	$\tilde{y}_6 = 0{,}25 + 0{,}67x_9 + 0{,}01x_{10}$
	7. Profitability	$\tilde{y}_7 = 0{,}007 - 0{,}006x_{11} + 0{,}35x_{12} + 0{,}036x_{13}$

* *Designations*: y_1 - share of the basic means in actives, x_1 - factor of the correlation of the basic and turnaround actives; x_2 - factor of leaving of the fixed capital; y_2 - factor of the actives turnover; x_3 - factor of turnover of the debitor indebtedness; x_4 - factor of the payoff of the funds; y_3 - factor of release of automobiles on the route; x_5 - operating ratio of carrying capacity; x_6 - operating ratio of run; y_4 - efficiency of intensity of labour; x_7 – payoff of the wages, x_8- profitability of expenses; y_5 - factor of clean monetary inflow for the current activity, x_9- factor of repayment debts; x_{10} - profitability based on the monetary stream; y_6 - factor of long-term passives; x_{11}- factor of an autonomy; x_{12}- factor of maneuverability; y_7 - profitability of actives; x_{13}-profitability of sales, x_{14} - profitability of own capital; x_{15} - profitability of investments.

corrective amendments in due time and to make administrative decisions.

In the final block the development of the parameters is interpreted, the influencing factors are defined and the development of the measures for the improvement or preservation of financial stability, the estimation of the market appeal and competitiveness are performed. It is necessary to pay attention to the given stage as the quality of practical actions to increase the financial stability depends on the correct ordering and interpretation of the received information.

To apply the complex technique of the estimation of the financial stability, the unity of typical accounting and specialized accounting for MTC is used.

The application of the complex technique of the estimation of the financial stability for the cargo motor transportation organizations of Stavropol region has allowed receiving the following results (tab. 2).

The data in the table show, that in 2006 two enterprises – Joint Stock Company “MTC Stepanovskoe” and Joint Stock Company “ Regional transport agency-1 “ had a high financial stability.

Joint Stock Company “ Motor transportation enterprise “ Petrovskoe” had had an unsta-

Table 2

ResultsofcalculationofanintegratedparameterofthefinancialstabilityforcargoMTCoftheStavropolRegion

Copany	Level of financial stability		
	2004	2005	2006
Joint Stock Company «MTC "Stavropolskoe-2"»	29	33	37
Estimation of financial stability	Average	Average	Average
Joint Stock Company "Transport agency “Petrovskoe"	12	13	23
Estimation of financial stability	Low	Low	Low
ОАО "Нефтекумскавтотранс"	45	44	51
Estimation of financial stability	Average	Average	High
Joint Stock Company "Regional MTC - 1"	40	46	52
Estimation of financial stability	Average	Average	High
Joint Stock Company “MTC Stepnovskoe"	52	57	53
Estimation of financial stability	High	High	High
Joint Stock Company " MTC Levokumskoe"	38	40	43
Estimation of financial stability	Average	Average	Average

ble position, however, with a positive dynamics of its stabilization in 2006.

Joint Stock Company "Levokumskoe MTC" and Joint Stock Company "Stavropol - 2 " demonstrate an average financial stability.

The advantages of the above mentioned estimation technique of the financial stability of the motor transportation enterprises are: its applied character, the complex account of all components of the financial stability; the account of existence of an illegibility and qualitative character of the information; a possibility of revealing the factors negatively influencing the level of the financial stability to efficiently control them. The duly estimation of the financial stability by means of the suggested technique will allow to operatively liquidate sharp fluctuations in its dynamics and to optimize the components so that to avoid the loss of the financial stability of the enterprises.

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