

MULTIPLICATIVE MODEL OF RETURN ON ASSETS IN EVALUATION OF COMPANY'S FINANCIAL SECURITY

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Abstract. The article reveals the possibilities of the multiplicative model of return on assets in the information support of financial security suggested by the authors. The authors formulated definition of financial security on the basis of integrated approach, including resource-potential, target and regulatory-legal. As a result of company financial management's interests as the main object of financial security systematized by the authors, its tasks are formulated. In accordance with objectives of the financial security system, indicators reflecting its level are grouped. The information bounds of the return on assets' indicator are critically evaluated in order to assess the level of financial security. Multiplicative model of asset efficiency is constructed, which includes eight indicators (factors). Factor analysis of the impact of eight individual financial indicators on a comprehensive indicator of return on assets is carried out on the example of food industry enterprise located in the Moscow region (Russian Federation). The conclusion about additional information opportunities of factor analysis based on the multiplicative model of return on assets in identifying internal threats to the company's financial security is made.

Key words: information, financial security, indicators, return on assets, multiplicative model.

1 Introduction

Returns on capital invested in business is the basis of company's financial system stability. Excess of income over expenditure is a source, firstly, the owner's remuneration and, secondly, the business' development. That is why in the world and domestic practice the profitability indicator, defined as the ratio of the profit received to the amount of assets (advanced in business capital) is an indicator of financial independence. Its decrease signals problems in the company's financial security ensuring. Therefore, the diagnosis of this indicator, development and preventive measures' adoption based on its results is the main objective of financial security ensuring.

Issues of financial security ensuring had acquired special significance during the economic reforms' period on the transition to a market economy at the end of the XX century and the beginning of the XXI century. The financial problems of Russian enterprises in the XXI century are due to permanent political and financial and economic crises, the globalization of the economic space, the instability of financial markets, abnormal variations in energy carrier's prices, etc. These circumstances and the conditions of the economic systems' functioning represent the main list of its financial system's dangers. All the many threats to financial security which are the result of these dangers can be divided into four groups:

- financial resources' insufficiency to provide operational and investment activities;
- loss of financial resources;
- solvency, bankruptcy;
- the cost of financial resources' growth.

Economic systems at various levels' (companies, holdings, regions and the state as a whole) functioning in the conditions of dangers and threats necessitates the searching for fundamentally new approaches to ensuring the integrity, sustainability and

ability of its further development. This circumstance implies new solutions in the company's financial security organization.

The state strategy in the field of the security of individuals, society and the state' ensuring against external and internal threats of political, economic, social, military, technological, environmental, information and other nature is defined in Presidential Decree of May 12, 2009 № 537, «About the National Security Strategy of the Russian Federation until 2020». However, companies should independently develop mechanisms to ensure its economic security in the conditions of market competition.

The essence of company's financial security according to I.A. Blank, is its ability to develop independently and implement financial strategy in an uncertain and competitive environment [Blank I.A. 2009]. The main condition for the company's financial security is its ability to withstand dangers and threats. To ensure this condition, the company's management must maintain financial stability, appropriate balance and ensure sufficient financial independence.

As an independent object of research, the company's financial security began to be considered relatively recently. Theoretical bases of financial security as a component of economic security, are investigated by many Russian scientists: G.A. Androshchuk, I.A. Blank, O.O. Borodina, M.I. Bendikov, P.P. Krainev, E.A. Oleynikova. Problems of company's financial security strategic planning are devoted works of E.M. Boyko, V.A. Vasilenko, S.S. Gerasimenko, N.A. Golovach, K.S. Goryachev, A.V. Grachev.

Understanding of the financial security level is concretized with the help of quantitative and qualitative indicator indicators' system which determine the state and level of financial subsystem's development. K.S. Goryacheva, T.Y. Zagorelskaya, T.B. Kuzenko, O.I. Baranovsky, O.V. Arefieva, R.S. Papekhin analyze both indicators and methods of assessing the level of company's financial security. However, a large number of existing company's financial security indicators necessitates the systematization of mentioned information through their rating scheme's creation, or search for a comprehensive indicator reflecting the role of individual indicators.

The main aim of this research was the construction on the basis of the concept of financial security of the micro-level economic system of the multiplicative model of the return on assets' indicator (advanced in business capital). The multiplicative model of the efficiency indicator of the use of capital advanced to business will allow to establish the influence on this indicator of other financial and economic indicators characterizing certain aspects of financial security.

In accordance with the purpose of the research the main tasks were identified:

- research and classification of threats to financial security of the micro-level economic system;
- systematization of financial security indicators by types of financial activity;
- development of a multiplicative model for assessing financial security and way of determination the impact of each individual factor on the level of a financial security's comprehensive measure

2 Methodology

The methodological basis of the research is the fundamental provisions of the theory of economic systems, economic security, analysis. When constructing a multiplicative model of return on assets as an integrated assessment of financial security, the method of lengthening the classical model was used. Assessment of the impact of financial indicators on a

comprehensive indicator of financial security was carried out using the method of factor analysis.

The research is based on an analysis of scientific works in the field of economic security, in particular, the development of indicators for assessing the company's financial security.

As factual material of the research, information on the results of the activity of the food industry enterprise located in the Moscow region (Russian Federation) for five years of the second decade of the XXI century was used.

3 Results

The economic system of any level includes a set of interconnected subsystems: production, financial, information, etc. The functioning of the financial subsystem is aimed at the implementation of two main objectives: firstly, ensuring the continuity of the products exchange with other companies, which in turn, implies the provision of an economic system with the financial resources in the required volume with minimal costs.

The position of the financial system as a subsystem of the economic determines the diversity and complexity of the interests of various participants in financial and economic processes:

- ensuring the production activity with sufficient financial resources at all its stages;
- timely provision of investment projects with financial resources in the required amount;
- maintaining an appropriate level of solvency, in which the company is able to repay obligations to creditors in a timely manner;
- ensuring financial stability, sustainability and independence of the company at all stages of its development;
- increasing the profitability and return of equity in general and all the activities carried out, in particular.

All the variety of financial interests of the company we systematized into four main groups:

- generating a positive cash flow in the conduct of core business;
- attracting financial resources;
- maintaining a stable financial condition of the business entity;
- performance of obligations to creditors, ensuring an appropriate level of solvency (Karzaeva N.N. 2017).

The condition of the economic entity's financial subsystem can be recognized as safe if it allows to implement a wide variety of financial interests. Therefore, there are many definitions of financial security, based on three approaches: resource-potential, target and regulatory-legal. Resource-functional approach allows to formulate the definition of financial security as a condition of the company's financial resources in the amount sufficient to meet its needs and fulfill its obligations to creditors.

From the point of view of the targeted approach, financial security is the condition of the company's financial activity which is characterized by the ability to ensure its effective functioning and economic growth, and resistance to internal and external threats.

In the context of regulatory legal regulation, financial security is a condition in which there is in reality no possibility of financial resources' illegal use.

Based on the synthesis of the resource-potential, target and regulatory approaches to the content of financial security, we previously defined it as a state in which there are no dangers or threats to financial interests of participants in financial and economic relations, including threats to financial independence and sustainability, as well as security financial resources [Karzaeva N.N. 2017].

Thus, the financial security of the company is a state of the financial system, allowing to solve three main tasks:

1. to ensure financial equilibrium, stability and solvency in the long-term;
2. to meet the need for financial resources to implement the strategic and operational tasks of its leadership;
3. to resist threats to the financial resources and financial condition of the company.

The economic entity's financial security is characterized by:

- level of sufficiency of financial resources for financing strategic and operational projects;
- stability and sustainability of its financial condition;
- stability of relations with investors, credit institutions, lenders, suppliers and buyers and other counterparties;
- level of satisfaction of owners' financial interests (shareholders, participants).

Conceptually, the formation of an financial security's effective system should be based on the integrated monitoring's creation, i.e. a multi-level system for monitoring the dynamics of the economic entity's main financial and economic processes. The obvious difficulty appears in two points. Firstly, there are many threats to financial security. This requires the development of precise criteria for financial security. And secondly, it is required to determine the levels of these criteria, the excess or failure of which will signal the reality of a certain threat [Karzaeva N.N. 2017].

The tool for assessing the company's security level is the indicators – «development benchmarks that determine the boundaries of negative processes, signaling market participants about possible areas of trouble» [Leontiev V. 1990]. The company's financial security is characterized by a system of indicators reflecting various aspects of its financial activity: maintaining a stable and sustainably financial position of the company; making settlements with agents and counteragents; financial resources' generation and attraction [Kirov A.V. 2010]. The system of financial security indicators allows to determine the presence and level of threats and risks, to develop and implement a set of preemptive measures.

To characterize the company's financial position in assessing financial security, scientists and specialists propose to apply various indicators, the general list of which includes:

- financial leverage [Badaeva O.N., Tsupko E.V. 2013; Blazhevich O.G. 2010; Volodina I.G. 2013; Gukova A.V., Anikina I.D. 2007; Ovechkina O.N. 2013; Shevchenko L.A. 2008],
- financial stability ratio [Blazhevich O.G. 2010, Gukova A.V., Anikina I.D. 2007, Ovechkina O.N. 2013, Shevchenko L.A. 2008],
- financing or borrowing capacity ratio [Badaeva O.N., Tsupko E.V. 2013, Gukova A.V., Anikina I.D. 2007, Shevchenko L.A. 2008],
- coefficient of equity concentration (or autonomy) (Badaeva O.N., Tsupko E.V. 2013, Gukova A.V., Anikina I.D. 2007, Shevchenko L.A. 2008);
- borrowed funds' concentration ratio [Gukova A.V., Anikina I.D. 2007];
- financial dependence (or independence) ratio [Volodina I.G. 2013, Gukova A.V., Anikina I.D. 2007];
- ratio of own funds [Badaeva O.N., Tsupko E.V. 2013, Blazhevich O.G. 2010, Gukova A.V., Anikina I.D. 2007].

Stability of financial relations with creditors, according to experts, reflects the following indicators:

- absolute, quick and current ratios [Badaeva O.N., Tsupko E.V. 2013, Volodina I.G. 2013, Gukova A.V., Anikina I.D. 2007, Sannikova I.N. Indicators of the enterprise's economic security Electronic resource - Access mode: <http://econ.asu.ru>, Shevchenko L.A. 2008];

- availability of sufficient funds to pay for financial obligations in the current period [Gukova A.V., Anikina I.D. 2007];
- ratio of interest to pay [Gukova A.V., Anikina I.D. 2007];
- capital structure;
- accounts payable turnover [3, Blazhevich O.G. 2010, Ovechkina O.N. 2013];
- indicator of overdue accounts payable [Gukova A.V., Anikina I.D. 2007, Sannikova I.N. Indicators of the enterprise's economic security Electronic resource - Access mode: <http://econ.asu.ru>];
- ratio of turnover of receivables and payables [Gukova A.V., Anikina I.D. 2007];
- indicator of supplier diversification [Gukova A.V., Anikina I.D. 2007].

The ability to generate and attract financial resources to finance strategic and operational projects of the company, according to experts, can reflect such indicators as:

- return on assets, current on current assets [Badaeva O.N., Tsupko E.V. 2013,6, Shevchenko L.A. 2008];
- return on products sold [Badaeva O.N., Tsupko E.V. 2013, Ovechkina O.N. 2013];
- return on total capital [Blazhevich O.G. 2010,14];
- return on equity [Badaeva O.N., Tsupko E.V. 2013, Blazhevich O.G. 2010, Gukova A.V., Anikina I.D. 2007, Ovechkina O.N. 2013];
- sales margin [Badaeva O.N., Tsupko E.V. 2013, Blazhevich O.G. 2010, Shevchenko L.A. 2008];
- return on investment;
- return of production [Sannikova I.N. Indicators of the enterprise's economic security Electronic resource - Access mode: <http://econ.asu.ru>];
- growth rates of assets, revenues, profits [Badaeva O.N., Tsupko E.V. 2013, Blazhevich O.G. 2010, Gukova A.V., Anikina I.D. 2007, Ovechkina O.N. 2013];
- assets turnover [Shevchenko L.A. 2008];
- turnover of circulating, own, loan capital [Badaeva O.N., Tsupko E.V. 2013];
- accounts receivable turnover [Badaeva O.N., Tsupko E.V. 2013, Blazhevich O.G. 2010, Ovechkina O.N. 2013];
- coefficient of funds' reinvestment;
- degree of coverage of investment opportunities;
- ratio of the value of domestic and external financing;
- weighted average cost of capital (WACC) [Badaeva O.N., Tsupko E.V. 2013, Gukova A.V., Anikina I.D. 2007];
- indicators of customer diversification [Blazhevich O.G. 2010, Gukova A.V., Anikina I.D. 2007, Ovechkina O.N. 2013];
- amount of overdue accounts receivable [Gukova A.V., Anikina I.D. 2007, Sannikova I.N. Indicators of the enterprise's economic security Electronic resource - Access mode: <http://econ.asu.ru>];
- volume of the orders portfolio [Sannikova I.N. Indicators of the enterprise's economic security Electronic resource - Access mode: <http://econ.asu.ru>].

Experts do not consider indicators that reflect the level of owners (shareholders, participants) financial interests' satisfaction.

The main threat to the financial independence of the company is the reduction (loss) of income on advanced in business capital. Therefore, in assessing the company's financial performance, it is very important to assess the profitability of the return on assets (property at the disposal of the enterprise), own funds, financial investments (investments).

Return on assets is the most common indicator that reflects the amount of profit received per unit of property used in the company's activity. Its level depends on the level of satisfaction of the economic interests of both the company and its owners.

Return on assets (ROA) in russian and foreign practice is determined on the basis of the following analytical dependencies:

return on assets

$$R_a = \frac{P_{it}}{A} \times 100; \quad (1)$$

where

P_{it} - profit before tax and interest;

A – average annual value of aggregate (non-current and current) assets.

Return on assets (ROA) depends on sales profitability (S) and the level of aggregate (non-current and current) assets' use. If the

factor ($\frac{S}{A}$) is introduced in the initial formula of return of assets, it will take the following form:

$$R_a = \frac{P_{it}}{S} \times \frac{S}{A} \times 100\% \quad (2)$$

The first factor of this two-factor model is sales margin. The second factor is total assets turnover.

This dependence shows possible directions for improving the return on assets:

- with low profitability of output, it is necessary to seek for accelerate the turnover of assets and their elements;
- company's low business activity can be compensated by lower costs for production or increase in its sales prices.

Based on the analysis, we found that the models considered information are limited because they do not include factors reflecting the level of financial security, even those regulated in Russian Federation (Methodological guidelines for conducting an analysis of the organizations' financial status: Appendix to the Order of the Federal Service of Russia for Financial Rehabilitation and Bankruptcy of Russian Federation on 23.01.2001 № 16 / Consultant Plus Electronic resource - Access mode: <http://www.consultant.ru>).

In the practice of economic analysis for a more in-depth study of the factors that affect the return on assets, the three-factor model of DuPont is widely used:

$$R_a = \frac{P}{A} = \frac{P}{S} \times \frac{S}{E} \times \frac{E}{A}; \quad (3)$$

where

$\frac{P}{S}$ - sales margin;

$\frac{S}{E}$ - turnover of own capital;

$\frac{E}{A}$ - financial independence ratio or share of equity in the enterprise assets.

The DuPont model was constructed by extending the conventional (classical) model of return on assets.

4 Discussion

Applying the extension method, we proposed to construct a multiplicative model of return on assets using a broader list of financial indicators (factors):

$$R_a = \frac{P}{S} \times \frac{S}{SA} \times \frac{SA}{CL} \times \frac{CL}{AR} \times \frac{AR}{CR} \times \frac{CR}{FR} \times \frac{FR}{E} \times \frac{E}{A} \quad (4)$$

where

P - profit before taxes and interest;

S - revenue from sales of products;

SA - current assets;

CL - short-term obligations of the firm, which include liabilities to creditors for commodity transactions and short-term obligations under loan agreements;

AR - accounts receivable;

CR - liabilities to creditors for commodity transactions;

FR - short-term and long-term obligations under all contracts;

E - amount of equity;

A - current and non-current assets (Zimin N.E. 2016).

The multiplicative model of profitability of capital use includes 8 factors:

$\frac{P}{S}$ - sales margin characterizes the impact of the company's pricing policy and sales volume on the level of return on assets;

$\frac{S}{SA}$ - assets turnover characterizes the efficiency of the use of current assets;

$\frac{SA}{CL}$ - current ratio characterizes the solvency of the enterprise subject to the sale of all the reserves and the repayment obligations by the debtors;

$\frac{CL}{AR}$ - ratio of short-term liabilities of the company to the obligations of debtors to it characterizes the degree of coverage of accounts receivable short-term company's liabilities and is an indicator of its financial stability;

$\frac{AR}{CR}$ - ratio of receivables to payables for commodity transactions shows the dependence of the enterprise on creditors and debtors. According to many scientists' opinion, it serves as an assessment of the company's security against inflation: the smaller the value of this indicator, the higher the degree of protection against inflation. However, this assertion is controversial, since at its core, in the presence of overdue debts, it reflects the level of financial relations of economic entities' imperfection. The presence of large amounts of unliquidated obligations leads to a loss of interest in the economic cooperation of business partners. Earlier, we noted in our works that violation of the contracts' terms is a threat to the financial security of both parties and leads to financial inflationary risks, financial losses in the form of penalties and fines, a decrease in the return on equity [Zimin N.E. 2016];

$\frac{CR}{FR}$ - ratio of the company's obligation to creditors for commodity transactions to the total amount of borrowed capital characterizes the structure of its obligations by types of contracts: the attraction of funds under loan agreements and contracts concluded in the business activity;

$\frac{FR}{E}$ - ratio of debt to equity is an indicator of the company's financial stability;

$\frac{E}{A}$ - ratio of equity to total assets shows the concentration of own assets and the degree of financial independence of the company.

We note that the analytical solution of this multiplicative model will allow to determine the level and direction of the each factor (element) influence on changes in the resulting indicator of profitability of the return on assets. The factor model of the return on assets, we propose to solve one of the methods of elimination, for example, by the method of differences:

$$\Delta R_{\frac{P}{S}} = \left(\frac{P_1}{S_1} - \frac{P_0}{S_0} \right) \times \frac{S_0}{SA_0} \times \frac{SA_0}{CL_0} \times \frac{CL_0}{AR_0} \times \frac{AR_0}{CR_0} \times \frac{CR_0}{FR_0} \times \frac{FR_0}{E_0} \times \frac{E_0}{A_0}; \quad (5)$$

$$\Delta R_{\frac{S}{SA}} = \frac{P_1}{S_1} \times \left(\frac{S_1}{SA_1} - \frac{S_0}{SA_0} \right) \times \frac{SA_0}{CL_0} \times \frac{CL_0}{AR_0} \times \frac{AR_0}{CR_0} \times \frac{CR_0}{FR_0} \times \frac{FR_0}{E_0} \times \frac{E_0}{A_0}; \quad (6)$$

$$\Delta R_{\frac{SA}{CL}} = \frac{P_1}{S_1} \times \frac{S_1}{SA_1} \times \left(\frac{SA_1}{CL_1} - \frac{SA_0}{CL_0} \right) \times \frac{CL_0}{AR_0} \times \frac{AR_0}{CR_0} \times \frac{CR_0}{FR_0} \times \frac{FR_0}{E_0} \times \frac{E_0}{A_0}; \quad (7)$$

$$\Delta R_{\frac{CL}{AR}} = \frac{P_1}{S_1} \times \frac{S_1}{SA_1} \times \frac{SA_1}{CL_1} \times \left(\frac{CL_1}{AR_1} - \frac{CL_0}{AR_0} \right) \times \frac{AR_0}{CR_0} \times \frac{CR_0}{FR_0} \times \frac{FR_0}{E_0} \times \frac{E_0}{A_0}; \quad (8)$$

$$\Delta R_{\frac{AR}{CR}} = \frac{P_1}{S_1} \times \frac{S_1}{SA_1} \times \frac{SA_1}{CL_1} \times \frac{CL_1}{AR_1} \times \left(\frac{AR_1}{CR_1} - \frac{AR_0}{CR_0} \right) \times \frac{CR_0}{FR_0} \times \frac{FR_0}{E_0} \times \frac{E_0}{A_0}; \quad (9)$$

$$\Delta R_{\frac{CR}{FR}} = \frac{P_1}{S_1} \times \frac{S_1}{SA_1} \times \frac{SA_1}{CL_1} \times \frac{CL_1}{AR_1} \times \frac{AR_1}{CR_1} \times \left(\frac{CR_1}{FR_1} - \frac{CR_0}{FR_0} \right) \times \frac{FR_0}{E_0} \times \frac{E_0}{A_0}; \quad (10)$$

$$\Delta R_{\frac{FR}{E}} = \frac{P_1}{S_1} \times \frac{S_1}{SA_1} \times \frac{SA_1}{CL_1} \times \frac{CL_1}{AR_1} \times \frac{AR_1}{CR_1} \times \frac{CR_1}{FR_1} \times \left(\frac{FR_1}{E_1} - \frac{FR_0}{E_0} \right) \times \frac{E_0}{A_0}; \quad (11)$$

$$\Delta R_{\frac{E}{A}} = \frac{P_1}{S_1} \times \frac{S_1}{SA_1} \times \frac{SA_1}{CL_1} \times \frac{CL_1}{AR_1} \times \frac{AR_1}{CR_1} \times \frac{CR_1}{FR_1} \times \frac{FR_1}{E_1} \times \left(\frac{E_1}{A_1} - \frac{E_0}{A_0} \right); \quad (12)$$

where ΔR_i - influence of the i-th factor on the overall change in the return on assets;

1 – reporting year,

0 – base year.

The analytical implementation of the proposed model was approved by the example of a functioning food industry enterprise located in the Moscow region (Russian Federation). The main indicators that characterize its financial position and results of operations are presented in Table 1. The company does not have long-term obligations under loan agreements, as it is not solvent and can not provide collateral.

Table 1 Evaluation of factors affecting on the return on assets

Indicators, algorithms for their determination	The analyzed period (years)					Variation, %
	1-st	2-nd	3-rd	4-th	5-th	
1	2	3	4	5	6	7=((6-2)/2)×100
Initial information for the diagnosis of the influence of factors, thousand rubles						
1. Profit before taxes and interest, (P)	123735	120222	147166	131776	7065	-194,29
2. Revenue from sales of products, (S)	1430362	1485046	1626585	1746140	1829059	+27,87
3. Net profit (loss)	22946	19909	20036	53137	-38843	-269,28
4. Current assets, (SA)	235782	269164	281632	313873	341841	+44,98
5. Short-term obligations of the firm, which include liabilities under loan agreements, (CL)	85085	93351	120604	102101	208989	+145,62
6. Accounts receivable, (AR)	131023	134813	125556	97059	202393	+54,47
7. Accounts payable, (CR)	69445	80943	107337	89896	190559	+1,74
8. Borrowed capital, (FR)	85091	93351	120604	102101	208989	+145,61
9. Equity, (E)	399870	419785	439821	492957	454115	+13,57
Estimated values of factors						
10. Sales margin, ((i.1:i.2)×100), ($\frac{P}{S}$)	8,65	8,10	9,04	7,55	0,38	-95,61
11. The ratio turnover of current assets, (i.2:i.4), ($\frac{S}{SA}$)	6,07	5,52	5,78	5,56	5,35	-11,86
12. Current ratio, (i.4:i.5), ($\frac{SA}{CL}$)	2,77	2,88	2,33	3,07	1,64	-40,79
13. Ratio of short-term liabilities to accounts receivable, (i.5:i.6), ($\frac{CL}{AR}$)	0,65	0,69	0,96	1,05	03	+58,46
14. Ratio of receivables to payables for commodity transactions, (i.6:i.7), ($\frac{AR}{CR}$)	1,89	1,67	1,17	1,08	1,06	-43,92
15. Ratio of the company's obligation to creditors for commodity transactions to the total amount of borrowed capital, (i.7:i.8), ($\frac{CR}{FR}$)	0,82	0,87	0,89	0,88	0,91	+10,98
16. Ratio of debt to equity, (i.7:i.8), ($\frac{FR}{E}$)	0,21	0,22	0,27	0,20	0,46	+119,05
17. Ratio of equity to total assets, (i.9:(i.7+i.8)), ($\frac{E}{A}$)	0,62	0,82	0,78	1,21	1,46	+76,05
18. Return on assets, (i.3:(i.8+i.9))×100, RA	4,73	3,88	3,58	8,93	-5,86	-10,59

Table 2 The factors' impact on return on assets, %

Factors	Perion (year)				Total (for all periods)
	2-nd	3-rd	4-th	5-th	
Sales margin, ($\frac{P}{S}$)	-1,60	+1,14	-3,19	-2,95	-6,4

Assets turnover, ($\frac{S}{SA}$)	-2,14	+1,26	-1,85	-0,13	-2,86
Current ratio, ($\frac{SA}{CL}$)	+0,85	-3,99	+2,20	-0,15	-1,09
Ratio of short-term liabilities to accounts receivable, ($\frac{CL}{AR}$)	-1,37	+10,00	+13,75	+0,85	+23,23
Ratio of receivables to payables for commodity transactions, ($\frac{AR}{CR}$)	-2,76	-11,98	-15,48	-0,40	-30,62
Ratio of the company's obligation to creditors for commodity transactions to the total amount of borrowed capital, ($\frac{CR}{FR}$)	+25,55	+1,65	+1,44	+0,09	+28,73
Ratio of debt to equity, ($\frac{FR}{E}$)	+1,06	+11,88	-7,36	+0,12	+5,7
Ratio of equity to total assets, ($\frac{E}{A}$)	+28,4	-4,86	+10,03	+0,62	+34,19

It should be noted that the dynamics of all indicators for the analyzed period is negative and indicates about deterioration in the company's financial position and inefficiencies in its activities. There is a maximum change in two factors: the ratio of borrowed capital to own (119%) and sales margin (95%).

However, the indicators have a different effect on the return on assets. Its importance is increased by the ratios of short-term liabilities to receivables and the ratio of payables to borrowed capital, the ratio of debt to equity ratio, and the ratio of equity to assets. Indicators of sales margin, turnover of current assets, current ratio, ratio of accounts receivable to payables reduce the value of the level of return on assets. At the same time, the maximum influence of the ratio of accounts receivable to payables (30%) and the ratio of equity to assets (34%) is noted.

In this research, we did not pursue the goal to create a program of activities aimed at improving the company's operations efficiency. Analysis of the results of the multiplicative model of return on assets application allowed us to establish that its information boundaries are wider than the basic model and allow us to establish additional problematic aspects of the company's activities.

5 Conclusion

1. The effectiveness of the financial security system is determined by the list of objects' completeness, the security of which it must provide. We applied an integrated resource-potential, target and regulatory approach to disclosing the content of financial security. As a result, we identified the financial interests of participants in economic activity as objects. All the variety of financial interests at the company level we systematized into four main groups:

- generating positive cash flow by main activity;
- attracting financial resources to ensure investment projects;
- maintaining a stable financial condition of the company;
- ensuring an adequate level of solvency.

Therefore, the composition of financial security objects include: the interests of participants in financial activities, cash flow, the price of financial resources, profitability, financial condition of the company, solvency.

2. The plurality and complexity of financial security' objects predetermine many indicators that characterize their level of security. Therefore, we proposed this list to be divided into three groups in accordance with the objectives of ensuring financial security:

- to ensure financial equilibrium, sustainability and solvency in the long-term period;
- to meet the need for financial resources to implement the strategic and operational tasks of its management;
- to resist threats to the financial resources and financial condition of the company.

3. The main internal threat to the company's financial security is the reduction (loss) of income, on which the levels of many indicators of the financial condition and performance of the company depend. Therefore, as a basic indicator of financial security, we proposed to apply the return on assets indicator, reflecting the amount of profit received per unit of property used in the activity.

4. The level of the return on assets is influenced by many factors that are essential for the development of preventive instruments for ensuring financial security. For this purpose, we built a multiplicative eight-factor model of return on assets. With help of factor analysis using the difference method is established effects of model's individual elements on the use of assets effectiveness.

5. We tested the multiplicative model of the return on assets on the data of the company operating in the Moscow region (Russian Federation) and proved that its application expands the

information boundaries. Factor analysis of the influence of model's individual elements on a complex indicator of return on assets made it possible to identify problem areas of company's financial activity that were not established in the analysis of particular indicators.

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