

-RESEARCH ARTICLE-

TOOLKIT FOR FINANCIAL INDICATORS: ENHANCING FINANCIAL CONTROL IN CORPORATIONS

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—Abstract—

This study describes creating and evaluating a comprehensive framework for determining and controlling value deviations of corporate financial indicators. The toolkit consists of an impact control matrix for assessing risk factors, the categorization of indicators into risk zones, a method for determining deviations from strategic values using Monte Carlo simulation, and tools for monitoring and modifying financial risk indicators. The toolkit improves operational and strategic financial management's financial control by providing predictive and situational self-controlling tools. This research aimed to create a universal toolkit for monitoring deviations and disseminating indicators by risk areas. Several scientific methods were utilized, including categorization, an impact control matrix, monitoring tools, and the Monte Carlo method. The toolkit introduces a new trend in corporate financial indicator control. This methodological arsenal for determining and controlling value deviations of economic indicators paves the way for a new approach to corporate financial management.

Keywords: Financial Controlling, Actual Values, Strategic Values, Deviations, Monte Carlo, Risk Factors

1. INTRODUCTION

The efficient generation, distribution, and consumption of funds in commercial and corporate organizations (corporations), the achievement of the target indicator values identified in financial strategies, and the minimization of financial risks are essential components of a successful financial policy in each nation (Hayes et al., 2014). However, the presence of multiple indicators for evaluating the financial performance of businesses makes it difficult to select the appropriate assessment control ratio for regulating financial conduct. Russian practice indicates that greater control over the accomplishment of required criteria and values of financial indicators is necessary for most corporations, which negatively impacts the accuracy of financial decisions. However, the majority of corporate financial control methods are operational, except for those utilized during the strategic period. They prevent the identification of deviations between strategic and actual indicator values. The absence of adequate appraisal indicators of control in the systems of financial management, which should correspond to the requirements of completeness, utility, hierarchies, interconnectedness, best performance, and rationality (Ullah et al., 2021) and the correct selection of those predetermined best operational and strategic financial decisions, is the cause of multiple financial problems in corporations. In this regard, it is essential to develop a methodology that guarantees the correct selection of indicators for financial control in corporations and control over the achievement of strategic economic indicator values in their strategic and operational financial management systems. The time has come to develop a controlling financial theory and methodological toolkit to help corporations attain the criteria or strategic level of economic indicators. Its viability, development,

and continuous improvement are essential scientific research duties, making this topic significant.

Obtaining the study's objective required the completion of the following tasks: Examine the debatable theoretical issues associated with the implementation of financial performance controlling in corporations; justify the selection of economic indicators for financial controlling from a methodological standpoint; and assess the current practices of financial controlling in corporations using a system of financial indicators. Create a controlling matrix demonstrating the impact of risk factors on the values of economic indicators in corporations; Develop and test a methodological toolkit based on the Monte Carlo method for determining deviations of strategic and actual values for the financial strains indicator; Suggest a tool for monitoring and determining deviations between actual and optimal economic indicator values by risk area.

The study's theoretical and methodological foundation consists of theories about financial management, financial control, and controlling, the optimal economic structure of capital, works by international and Russian scientists and financial practitioners, and periodicals about financial controlling conduct in corporations and their internal regulatory frameworks. The study's methodological foundation included logical, complex, situational, and process scientific approaches to investigating corporate financial conduct control methods.

The working hypothesis of the study is based on the author's position that new economic reality predetermines the need for such financial controlling methods in corporations that meet the requirements of the new business environment, imply a specific set of financial indicators, and take the needs of the time into consideration. This includes the development of a matrix that suggests the control of risk factors' impact on the values of financial indicators, as well as the update of a toolkit based on the Monte Carlo method for determining deviations of strategic and actual values of financial indicators, which enables the timely detection of external and internal factors that influence the development of financial controlling methods in the context of new economic challenges and risks.

The theoretical significance of the study resides in its expansion of theoretical and methodological ground for future research on the discussed topic, taking into account a deeper scientific understanding of how to create and develop methods for controlling financial indicators in the financial management system of Russian corporations in the face of new economic challenges and risks. The suggested theoretical provisions provide the basis for developing a new model for controlling financial indicators in corporations based on synthesizing its operational and strategic types; the authors considered the accomplishments of contemporary domestic and international economic scholars and the particulars of Russian financial practices. The authors present a methodological toolset based on the Monte Carlo method and a software product for controlling financial

deviations of strategic and actual indicators. Implementing the model and the toolkit, which provide a novel perspective on managing corporate economic indicators, is the study's practical significance.

The originality of this study resides in developing and testing a toolkit for determining financial indicators for financial controlling in corporations, including a matrix for controlling the impact of risk factors on the values of economic indicators in corporations. The matrix should identify the factors of influence via variable values of estimated control indicators based on regular monitoring and determining deviations of strategic and actual values of financial strains indicator, using the Monte Carlo method and the author's software product, in addition to modified financial risk indicators that characterize capitalization, overall solvency, and short-term debt. Implementing the proposed toolkit enables timely identification and prompt elimination of economic indicator value deviations as established parameters, which should evaluate compliance with the criteria or target values of the financial strategy indicators in corporations.

2. LITERATURE REVIEW

2.1 Financial Controlling Conduct in Corporations

Financial control is a complex system comprised of integrated analysis, control, and deviations between actual and planned indicator values (Manuylenko & Shebzukhova, 2021). Financial control was defined by Li et al. (2020) as a regulatory control system that incorporates an information base, analysis, and internal financial control. They believe that in the corporate financial management system, financial control concentrates control functions on significant areas of corporations' financial activity, promptly revealing deviations between actual and planned results and making operational management decisions to return them to the norm and comparing achieved indicators with average ones based on economic activities and determining how such financial indicators relating to the key indicators of corporations' financial and economic performance is a requirement for achieving efficient financial control in corporations. According to Ali et al. (2022), financial control is a form of internal control that promptly identifies deviations between actual and planned indicator values. According to Hayes et al. (2014), financial control focuses on timely eradicating departures.

Corporate financial and internal control aims to identify and eliminate negative deviations. Khodarahmi (2009) presented financial control as an integral component of the financial control form, with departures from actual and planned values and prompt detection of inaccuracies as the primary criteria. Kari (2015) defines "financial control" as the surveillance and disclosure of variances between actual and planned financial performance indicator values.

Financial control, according to Ryan and Trahan (2007), is the concept of control that concentrates control functions on identifying deviations from the current and planned

values of indicators and recommending efficient decisions to minimize deviations. All presented interpretations of financial control in corporations identify variances in economic indicators as its most important instrument. The evaluation of controlling financial conduct is based on identifying and analyzing deviations between actual and planned indicator values. Absolute and relative deviations exist. Absolute deviations indicate the number of units the analyzed level deviates from the previous or base level. In contrast, relative deviations indicate the percentage of change in the compared level close to the previous or base level. Consequently, it is necessary to highlight comparative benchmarks when evaluating corporations' financial control.

[Adongo & Jagongo \(2013\)](#) observe that the general method of financial control, budgeting, aims to detect deviations promptly through budgetary control; when variations are significant, the budget is revised, or measures are taken to achieve the set objectives. According to the study's logic, selecting appropriate financial indicators of financial control in corporations and methods, techniques, and instruments for managing them is crucial.

[Robinson \(1979\)](#) compares information support for financial control to a company's financial reporting information. According to [Chaganti et al. \(2002\)](#), the financial supervision of corporations is divided into operational and strategic components. Comparing planned and actual values of indicators; identifying the causes of deviations in existing and planned values of indicators; and analyzing the impact of deviations on the implementation of current plans to identify possible deviations, discrepancies, and errors are among the operational and financial control tasks. Comparing actual and strategic values of indicators, analyzing the economic efficiency of corporations, identifying critical indicators for established strategic goals, forecasting possible violations and deviations, and eliminating them are the responsibilities of strategic financial control ([Ssaharti, 2022](#)).

Identifying the primary areas of financial control in corporations necessitates analyzing the relationship between the indicators for liquidity and solvency, financial stability, and financial results for the relevant business sector. [Lisdiono et al. \(2002\)](#) state that assessing a corporation's liquidity and solvency is a crucial component of its financial condition in an environment of economic instability. The indicator of general solvency defines the ratio of total assets to total liabilities; its criterion level is greater than three units. The ratio of current assets to short-term liabilities is more accurately described by current liquidity, which has a traditional value of $>$ or $= 2$ units. Assessment of a company's liquidity is closely related to evaluating its financial stability ([Ismail & Ahmed, 2023](#)). Similarly, when there is a risk of losing financial independence, a corporation's financial management should evaluate liquidity indicators to make the best financial decisions ([Raines & Leathers, 2011](#)).

Long-term measures regulate financial stability, assuming sufficient liquid assets are

available for immediate sale. A corporation's economic strength is equivalent to its financial resources, distribution, and utilization, which assures its functioning based on profit and capital generation while maintaining solvency and creditworthiness under acceptable risk conditions. In general, a corporation's financial stability is demonstrated by correlating its inventory of assets with various types of funding sources. (Aglietta & Breton, 2001) Marginal intervals for changing sources of funds to compensate investments in fixed assets or inventories identify business operations that better corporations' financial condition and stability.

Capitalization, financial independence, stability, financial strains, long-term borrowing, short-term debt, equity agility, permanent asset index, working capital, mobile and immobilized assets ratio, and property mobility are relative indicators of a company's independence from external funding sources. The values of indicators for capitalization, long-term borrowing, financial independence, stability, tension, and flexibility of one's capital are anchored to a distinct range, indicating that these values are optimal. Specifically, the recommendations of state bodies are considered when determining the criteria interval for the values of financial indicators (Matsoso et al., 2021).

The capitalization indicator reveals the ratio of borrowed funds to own funds invested in turnover for each ruble. Indicative of a company's financial independence is the proportion of its assets financed by its resources. There are two methods for financial management to increase indicators of economic freedom: investment of additional funds by the corporation's owners and attraction of investors.

Manuylenko & Shebzukhova (2021), who studied the correlation of relative indicators of the financial stability of corporations, found that the values of indicators for capitalization, financial independence, financial stability, strains, and own working capital best characterize the financial security of corporations and permit the identification of a set of measures that protect the business from internal and external financial threats.

In the corporate financial management system, controlling financial results should be given special consideration. Ally (2013) states that performance analysis is one of the functions of BEST-5 Controlling. The absolute indicator typifies the financial outcome of the corporation's activities, whereas the relative indicator characterizes the efficiency with which it employs financial control. Controlling a company's financial results requires investigating organizational and methodological support, creation mechanisms, and contemporary planning and evaluation techniques. Indicators of relative financial performance characterize the profitability of assets, equity, and sales. Return on assets indicates the income generated through the utilization of assets. A decline in return on assets suggests a decline in corporate efficacy. Return on equity demonstrates a company's ability to generate sufficient profits from its operations, thereby determining its overall efficiency (Beddu et al., 2022). It is determined how much profit each unit of

funds the proprietors invest yields. Practitioner-economists permit a minimum criterion level of indicator values of 0.12 units. Attract investors are consistent, growing returns on equity. A rise in the indicator values demonstrates that the company is dependable and capable of generating a consistent income because it employs capital efficiently to boost productivity and profit.

The profitability of sales, as measured by the ratio of net profit to revenue, provides control over business growth and foresees prompt action when efficiency declines. It is believed that the decline in the profitability of sales on net income indicates a decline in market demand for products and could result in the loss of a portion of the profit.

The recommended indicator value in the corporate financial management system is at least 0.02 units.

In controlling financial conduct for prompt identification and evaluation of negative aspects, systematization of problematic issues data in corporations' performance, and excluding them in the future, it is advisable to construct a hierarchy of financial stability indicators of corporations while considering their interdependence. Thus, indicators of long-term borrowing and economic stability have an inverse relationship; indicators of capitalization, economic tension, and short-term debt are based on total (short-term + long-term) liabilities; indicators of capitalization, financial independence, stability, and long-term borrowing are based on equity; indicators of financial independence, strength, tension are the balance sheet. Indicators of equity capital agility and availability of own working capital include ownership of working capital. Equity capital is a component of equity capital agility and fixed asset index indicators, while the ratio of mobile and immobilized assets and property mobility represent current assets.

The direct hierarchical connection of indicators describing the ratio of corporation financing sources in various modifications represents multiplicative two- and three-factor models of the influence of internal factors on financial constraints indicators in corporations, as well as a multiplicative two-factor model of the influence of internal factors on the capitalization indicator. Hierarchical relationships between indicators describing the sufficiency/insufficiency of financial sources for assets and the ratio between the corporation's assets convey two- and three-factor multiplicative models of internal factors' effect on the equity capital agility index.

In corporations, the internal factorial assessment of factors' positive/negative impact on the return on assets as net profit has become the instrument for financial control. Methodically, factor models are consistent with one another. The objective of assessing is to identify development factors that, on the one hand, disclose the financial capabilities of corporations and, on the other hand, negative influence factors, the results of which serve as a tool for financial control in corporations. Controlling financial conduct may be influenced by specialists, organizational and legal structures, and corporate size.

In practice, the effectiveness of implementing financial indicator values as a toolkit for financial controlling conduct in a corporation can only be evaluated during its operation.

3. METHODOLOGY: CASE STUDY

3.1 Current Practice of Financial Controlling Conduct in Corporations

JSC "Dairy Plant "Stavropolsky," a company producing dairy products in the south of Russia (Official site of JSC "Dairy Plant "Stavropolsky"), is selected as the object of study. Indicators of liquidity and solvency are essential for controlling financial conduct in corporations, and they are evaluated in dynamics - [Table 1](#).

Table 1. Comparative Assessment of Liquidity and Solvency of JSC "Dairy Plant "Stavropolsky" ([Manuylenko & Shebzukhova, 2021](#)).

Year to Year	Current liquidity		Solvency	
	Corporations of the corresponding type of economic activity, "manufacturing industries" of the region	Researched corporation	corporations of the corresponding type of economic activity, "manufacturing industries" of the region	Researched corporation
2012	1,520	0,812	1,568	1,635
2013	1,469	0,831	1,548	1,458
2014	1,163	0,833	1,290	1,494
2015	1,045	0,803	1,273	1,606
2016	1,173	0,839	1,447	1,582
2017	1,425	0,853	1,419	1,657
2018	1,330	0,526	1,565	1,460
2019	1,248	0,554	1,485	1,433
2020	1,190	0,667	1,482	1,463
Absolute deviation(+,-)	-0,330	-0,145	-0,086	-0,172

The values of the current liquidity indicator at JSC "Dairy Plant "Stavropolsky" do not correspond to the normative of 2 units, fluctuating between 0.526 and 0.853 units, which is substantially lower than the values for the corresponding type of economic activity. The importance of the indicator of general solvency fluctuates between 1.433 and 1.657 units, failing to meet the criterion of 3 units and, for the period 2013–2020, being lower than the value in manufacturing corporations. Identifying net assets, as shown in [Table 2](#), is a component of evaluating the financial stability of corporations.

Table 2. Determination of Absolute and Relative Deviations of net Assets from the Authorized Capital in SC “Dairy Plant “Stavropolsky” in Thousand Rubles

Year to Year	Net assets	Authorized capital	Deviations of net assets from the official means (+, -)
2012	406762	1044	+ 405718
2013	388460	1044	+ 387416
2014	392834	1044	+ 391790
2015	449786	1009	+ 448777
2016	470452	1009	+ 469443
2017	513161	1009	+ 512152
2018	557950	1009	+ 556941
2019	581505	1009	+ 580496
2020	619666	1009	+ 618657
Deviations (+,-): absolute in thousand rubles	+ 212904	- 35	+ 212939
Relative in %	+ 52,3	- 3,4	+ 52,4

Positive excess of net assets over authorized capital in the researched corporation increased by 212,939 thousand rubles or 52.4% during the retrospective period. Absolute indicators of a company's financial stability reflect the number of reserves and their availability from suitable sources; [Table 3](#) identifies four categories of financial stability.

Table 3. Results of Financial Stability Assessment of SC “Dairy Plant “Stavropolsky” in Absolute Terms in Dynamics

YY	Excess (+) /Shortage (-) of the sources for stock building			The types of financial stability
	Own, ±EC	Own and long-term borrowings, ±EM	Total	
2012	-349623	-349623	+ 121293	Fragile financial condition
2013	-393827	-393827	+ 308103	
2014	-448159	-448159	+ 102803	
2015	-458788	-458788	+ 62697	
2016	-458329	-458329	+ 102778	
2017	-398386	-398386	+ 152132	
2018	-833318	-833318	-220815	Critical financial condition
2019	-963248	-963248	-314542	
2020	-853783	-853 783	-3490	

SC "Dairy Plant "Stavropolsky" had a fragile financial condition in 2012–2017, which deteriorated to a crisis (critical) financial situation in 2018–2020.

[Table 4](#) evaluates the relative indicators of the corporation's financial stability.

Table 4. Evaluation of the Relative Indicators for Financial Stability for SC “Dairy Plant “Stavropolsky” in Dynamics (units)

Indicators	Criteria interval	YY										Absolute deviations (+,-)
		2012	2013	2014	2015	2016	2017	2018	2019	2020		
Capitalization for corporations (among manufacturing corporations of the region)	≤ 0,7, optimal 0,515 – 0,7	1,760	1,826	3,448	3,668	2,237	2,389	1,769	2,061	2,077	+ 0,317	
Researched corporation		1,576	2,183	2,023	1,651	1,719	1,522	2,172	2,311	2,159	+0,583	
Financial self-standing for corporations (among manufacturing corporations of the region)	> 0,5, optimal 0,66 – 0,7	0,362	0,354	0,225	0,214	0,309	0,295	0,361	0,327	0,325	- 0,037	
Researched corporation		0,388	0,314	0,331	0,377	0,368	0,397	0,315	0,302	0,317	- 0,071	
Long-term borrowing	1,11 – 1,25	0,013	0,014	0,015	0,012	0,015	0,011	0,030	0,046	0,062	+ 0,049	
Financial self-standing for corporations (among manufacturing corporations of the region)	0,8 – 0,9, manageable > 0,75	0,643	0,648	0,553	0,467	0,534	0,645	0,604	0,580	0,527	- 0,116	
Researched corporation		0,393	0,319	0,336	0,382	0,373	0,401	0,325	0,317	0,338	-0,055	
Financial strains For corporations (among manufacturing corporations of the region)	< 0,5, optimal 0,34	0,637	0,645	0,775	0,787	0,690	0,704	0,639	0,673	0,675	+0,038	
Researched corporation		0,612	0,686	0,669	0,623	0,632	0,603	0,685	0,698	0,683	+ 0,071	
Short term borrowings		0,992	0,994	0,992	0,993	0,991	0,993	0,986	0,979	0,969	-0,023	
The flexibility of equity	0,2 – 0,5	-0,307	-0,381	-0,350	-0,334	-0,289	-0,234	-1,045	-1,057	-0,762	-0,455	
Permanent asset index	< 1	1,307	1,381	1,350	1,334	1,289	1,234	2,045	2,057	1,762	+ 0,455	
The security of own working capital (units) for corporations (among manufacturing corporations of the region)	> 0,1	-0,175	-0,249	-0,490	-0,412	-0,264	-0,393	-0,214	-0,283	-0,200	-0,025	
Researched corporation		-0,242	-0,211	-0,209	-0,254	-0,202	-0,181	-0,928	-0,843	-0,546	-0,304	
Mobile/immobilized assets (units)	> 1	0,970	1,305	1,240	0,987	1,109	1,044	0,551	0,609	0,792	-0,178	
The flexibility of property	= 0,5	0,492	0,566	0,553	0,497	0,526	0,511	0,355	0,379	0,442	-0,050	

In SC "Dairy Plant "Stavropolsky" in the retrospective period, the values of capitalization, financial independence, financial stability and strains, and availability of own working capital do not meet the criteria levels, as is the case for regional manufacturing corporations. Thus, capitalization values are considerably greater than 0.7 units, ranging between 1.522 and 2.311 units, reaching their peak in 2019. The financial independence indicator ranges from 0.302 to 0.397 units, less than 0.5 units, and the financial stability ratio ranges from 0.317 to 0.401 units, never reaching 0.75 units. According to [Falko \(2014\)](#), if we compare the values of the capitalization indicator in the national and foreign financial management systems, then borrowed capital can be 1.5 times greater than equity capital in corporations of economically developed nations. Unfortunately, the ratio of borrowed capital to capital for regional corporations operating in an uncertain environment exceeds 1.5.

The financial tension exceeded 0.5 units and remained between 0.603 and 0.698 units. The values of the long-term borrowing ratio range from 0.011 to 0.062 units, with the highest quantity occurring in 2020. They are considerably outside the recommended range of 1.11–1.25 units. Since 2017, the short-term borrowing ratio has remained within the range of 0.969% to 0.994% units. The absence of working capital during the review period resulted in negative equity flexibility and working capital values. The values of the permanent asset index exceed the prescribed level, which is 1 unit, particularly in 2018–2019, where they total between 2.045 and 2.057 units. In 2013-2014 and 2016-2017, the mobile to immobilized-assets ratio met the criterion level, totaling 1,305 units, 1,240 units, 1,109 units, and 1,044, respectively. Mobile property values range between 0.355 and 0.566 units, with a recommended minimum of 0.5 units.

In the retrospective period, the researched company fails to meet the criteria for financial stability indicators (capitalization, financial strains, and long-term fund attraction) and overall solvency. In this case, tightening control over the generation, distribution, and utilization of funds is necessary. It was evident that the internal control service activities at SC "Dairy Plant "Stavropolsky" are unrelated to achieving the corporation's performance indicators. The assessment of deviations in attaining financial results by absolute and relative indicators in [Table 5](#) is another area of analysis within the system of financial control in corporations. The profit from sales at SC "Dairy Plant" Stavropolsky increased in absolute terms by 17,527 thousand rubles and in percentage terms by 18.8%. It is not estimated that the increase in sales profit is inferior to the increases in regular expenditures (54.8%) and revenue (53.3%). There is an increase in both revenues and expenditures for routine activities. In absolute terms, corporations' profit before interest and taxation decreased by 14,649 thousand rubles or 14.3%. The absolute decline in net profit over the past decade is 2,283,000 rubles or 5.2%.

Following the study's logic, the return on assets and equity is estimated based on the net profit of the researched corporation in [Table 6](#).

Table 6: Comparative assessment of assets and equity profitability in SC “Dairy Plant “Stavropolsky” in dynamics (in units)

Year to Year	Profitability			
	Assets		Equity	
	Corporations (among manufacturing corporations of the region)	Researched corporation	Corporations (among manufacturing corporations of the region)	Researched corporation
2012	0,046	0,042	0,128	0,109
2013	0,064	0,005	0,180	0,016
2014	0,001	0,005	0,003	0,016
2015	0,078	0,031	0,364	0,082
2016	0,113	0,018	0,364	0,048
2017	0,063	0,035	0,214	0,089
2018	0,091	0,027	0,251	0,086
2019	0,072	0,014	0,219	0,047
2020	0,064	0,022	0,196	0,068
Absolute deviations (+, -)	+ 0,018	-0,02	+ 0,068	-0,041

In SC "Dairy Plant "Stavropolsky, the return on assets ranges from 0.005 to 0.042 units, and the return on equity ranges from 0.016 to 0.109 units, with the highest value recorded in 2012; however, in the majority of cases, the return on assets and equity capital of manufacturing corporations in the region are lower. It is logical to estimate the quantity of sales profit, EBIT, and net profit in each ruble of revenue shown in [Table 7](#).

Based on the fact that the return on sales values must be at least 0.04 units, SC "Dairy Plant "Stavropolsky" only meets the criterion in 2012 and 2015, and its values generally range between 0.011 and 0.042 units. The profitability of sales in terms of profit before interest and taxes varies between 0.022 and 0.05 units, attaining a minimum in 2019 and a maximum in 2015, with a minimum in 2019 and a maximum in 2015. In most cases, the corporation repays loan interest through operational activities, except for 2013-2014 and 2016, when the interest coverage ratio falls below the criterion level (at least 1.5 units). Only in 2012 did the values of return on sales in terms of net profit reach the criterion level, which is worse than the situation in other regional manufacturing companies. Therefore, Russian practice demonstrates that the functional purpose of corporate financial control methods is to evaluate economic indicators and compare their planned and actual values. This determines the operational nature of financial control, i.e., the organization and implementation of financial management within the company.

Table 5. Evaluation of Deviations for Financial Result Indicators Values in SC “Dairy Plant “Stavropolsky”

Indicators	YY									The average value in thousand rubles	Deviations (+, –)	
	2012	2013	2014	2015	2016	2017	2018	2019	2020		Absolute, in thousand rubles	Relative, %
1. Revenue	2235007	2398195	2638800	2917693	3114842	3139726	3115222	3365155	3428086	2928081	+ 1193079	+ 53,3
2. Regular activities costs	2142129	2371117	2543084	2801061	3031570	3050497	2993263	3261905	3317681	2834701	+ 1175552	+ 54,8
3. Sales earnings	92878	27078	95716	116632	83272	89229	121959	103250	110405	93380	+ 17527	+ 18,8
4. Balance of different revenues and expenses, excluding interest payable	+ 9367	+39704	–13247	+28887	+25372	+22880	–28222	–28483	–22809	+3717	– 32176	– 343,5
5. Earnings before interest and taxes (EBIT)	102245	66782	82469	145519	108644	112109	93737	74767	87596	97096	–14649	–14,3
6. Balance of interest income and expenses	–43111	–56232	–62759	–84879	–72675	–49320	–30877	–35078	–30771	–51745	+ 12340	–28,6
7. Income tax and other payments from profit before tax	(14652)	(4470)	(13317)	(23928)	(13284)	(17052)	(15043)	(12096)	(14626)	(14274)	(– 26)	–0,2
8. Net profit	44482	6080	6393	36712	22685	45737	47817	27593	42199	31078	–2283	–5,2

Table 7. Complex Assessment of Return on Sales in SC “Dairy Plant “Stavropolsky” (units).

Indicators	YY									Absolute deviations (+,-)	
	2012	2013	2014	2015	2016	2017	2018	2019	2020		
Profitability:											
a) sales	0,042	0,011	0,036	0,040	0,027	0,028	0,039	0,031	0,032	- 0,01	
EBIT sales	0,046	0,028	0,031	0,05	0,035	0,036	0,03	0,022	0,026	- 0,020	
(ii) net profit sales	0,020	0,003	0,002	0,013	0,007	0,015	0,015	0,008	0,012	-0,008	
Interest payable coverage	2,372	1,188	1,314	1,714	1,495	2,273	3,036	2,131	2,847	+ 0,475	

4. RESULTS

4.1 In the Theoretical, Methodological, and Practical Blocks of the Research

- justified the need to apply hierarchically interconnected financial indicators as a tool for financial control in corporations; – determined that one of the primary active forms of implementing risk control, including that during the crisis, is monitoring controlled values of indicators, from which it is possible to determine the criteria for "critical" deviations.

– implemented is a standard method of financial controlling in corporations, which provides for the determination of absolute and relative deviations of the values of indicators for assessing a financial situation, structuring financial results, net assets of authorized capital, as well as the surplus/shortage of sources in the generation of reserves, assessment of liquidity and solvency, financial stability, profitability assets, equity, sales in relative terms; – approved is the need to assess the amount of profit from sales, EBIT, and net profit for each ruble of revenue in order to prevent a decrease in business efficiency and ensure control over its development; – revealed the failure of the researched corporation to meet the criteria values of both indicators of financial stability (capitalization, financial strains, level of long-term fundraising) and overall solvency during the retrospective period, which indicates the need to strengthen control over the generation, distribution, and use of funds. This indicates that there is no correlation between the activities of internal control service incorporation and the indicators of a corporation's financial and economic activities; – proposed a method for determining

deviations of the actual values of financial indicators from the strategic using a financial controlling model based on the Monte Carlo method.

4.2 Methodological Block of the Research

1) A procedure for operating with variances between actual and planned financial indicator values is proposed based on combining the economic controlling model and the GAP analysis.

GAP analysis uses blockchain, big data, descriptive, diagnostic, prescriptive, predictive analytics, artificial intelligence, computer learning, and cloud technologies to evaluate deviations in a digital format. Monitoring the values of controlled indicators is one of the primary active forms of risk management behavior. It entails monitoring and analyzing identified deviations, evaluating the reasons for initial indicator deviations in the reorganization plan (including time), and explaining the reasons. The effectiveness of controlling is determined by its results. The optimal combination of operational and strategic monitoring permits early identification of deviations and prompt implementation of corrections. In the process of risk management, unlike other forms of financial control, variations can be both profitable and unprofitable, causing profit growth and losses, respectively.

In all controlling software (ARIS Process Performance Manager; "BEST-5. Controlling"; system "1C: Manufacturing Enterprise Management 8"), deviations require special attention to confirm their significance.

The GAP analysis procedure calculates absolute and relative deviations of actual results of controlled indicators from established standards.

Calculating and monitoring financial indicators with significant deviations from initial values, current plans, and budgets. Observed are the following responses of corporate financial administrators to eliminate deviations:

- a) There are no reactions; the value of negative deviations is substantially below the "critical" criterion.
- b) elimination of deviations - searching for and using reserves in various areas of financial activities to achieve the target, planned, or criterion indicators; concurrently, considering the application of improved cutback procedures based on the "cutting off the excess" principle and the list of financial reserves.

The "critical" deviation criterion is differentiated by control periods that permit the identification of their causes.

When imperative management decisions must be made, it is essential to identify significant deviations that influence indicator modifications. This will be an early warning of changes through value deviations, identifying the cause-and-effect

relationships between qualitative and quantitative parameters. In the end, deviations are eliminated, and there is a continuous escalation of deviations at all levels of management. 2) proposed and implemented is a tool for the distribution of significant financial indicators; it depends on the magnitude of deviations between actual and planned values; distribution is suggested for three risk zones by color categories based on the "traffic light" principle: "green," "yellow," and "red."

Therefore, deviations are used for the distribution of the principal indicators that characterize corporate financing strategy by color categories – using the "traffic light" principle, into three risk zones: "green," "yellow," and "red" (table 8). The "Green" zone contains indicators whose values mandate corporations' systematic achievement of their strategic objectives. The "yellow" zone indicates indicator value deviations; it is still possible to eradicate variations, prevent potential losses, and avoid their consequences. The "Red" zone shows critical deviations in the values of the indicators from the criterion marks. The long-term financing indicator in SC "Dairy Plant" Stavropolsky is in the "red" zone.

Table 8. Distribution of SC “Dairy Plant “Stavropolsky” Financial Indicators into Risk Zones for the YY 2012–2020

Risk zones	A list of financial indicators
Green	The excess of net assets over authorized capital
Yellow	Single cases of meeting the criterion values in the ratio of mobile and immobilized assets, mobile property, and sales profitability in terms of net profit. Change in the ratio of income tax and other payments from profit before tax to profit before tax on a large scale.
Red	Failure to meet the values of general solvency, current liquidity, capitalization, financial independence, stability, constraints (their growth), long-term borrowing, and equity multiplier. The negative maneuverability of own capital, working capital availability, and reserves. Exceeding values of the permanent asset index (1 unit) demonstrate the obvious risk of liquidity loss.

A control matrix based on the pertinent coefficients is one of the most important instruments for timely surveillance and detection of deviations with corporate financial indicators. Adequate estimated financial control indicators must satisfy the requirements of completeness, usefulness, hierarchy, interconnectedness, efficacy, and rationality, excluding additional costs and repetition of operations. The matrix controls the impact of significant deviations in financial indicator values. The primary objective of creating such a matrix is to correlate changes in the importance of estimated economic indicators with the risk factors that influence them to reduce their negative impact on a company's financial management system.

The recommended instrument for distributing the impact of significant risk factors on changes in the values of estimated financial indicators allows for the addition of new risk factors – down the vertical axis – and/or the introduction of new economic indicators – horizontal expansion of the matrix ("optimal" location). The matrix's practical applicability is shown in [Table 9](#).

Interval limits for the optimal values of financial indicators provide control over the influence of risk factors on financial indicators; it is structured as monitoring and applying tools at appropriate intervals, including determining their values by phases of the economic cycle. Monitoring the estimated values of financial indicators involves routine checks, critical observation, and analysis of the status of the indicator that identifies risk factors to detect a deviation from the required or expected level.

Such monitoring can be conducted continuously and periodically. Current monitoring is a carduring course of normal managerial and financial activities involving controlling risk factors and studying variations in the key indicators of economic activity in dynamics. The monitoring results can be used as a foundation for revising the composition of estimated financial indicators, their evaluation, and instruments for identifying risk factors (their negative/positive consequences, assessing the chain of change in risk factors) and managing financial risks. Consequently, previous managerial and financial decisions can be modified if required. Such a matrix will permit: – preventing and/or minimizing the negative impact of risk factors at each level on the achievement of corporations' strategic goals.

- timely identify and promptly eliminate deviations of the values of financial indicators from the established parameters; – evaluate the conformity of the obtained results with the established criteria and objective values of economic indicators.

In other words, such a tool will permit the timely identification of problematic financial areas in corporations based on monitoring and developing well-reasoned recommendations to mitigate the negative impact of risk factors at each level.

3) Risk zones ("green," "yellow," "red") are identified based on the deviations of the actual values of the indicators; when the importance of the financial strains indicator is in the range of 0.491–0.492 units, the company is in the "green" zone, relative deviation from the optimal limit of the indicator values up to 10% - "yellow" zone, and more than 10% - "red" zone; the researched company is in the "red" zone.

The random nature of deviations in the values of financial indicators that characterize the state of financial control of corporations explains their functioning under conditions of uncertainty. ([V. V. Manuylenko, M. A. Shebzukhova, 2021](#)). The "green" zone of the range of economic tension values is between 0.491 and 0.492 units, based on the modeling results of the corporations under study.

Table 9. Matrix for Controlling the Impact of Risk Factors on the Values of Estimated Financial Indicators in SC “Dairy Plant “Stavropolsky”

Risk Factors	Assessment Financial Indicators		The form of financial control is monitoring; the tool is the interval boundaries of the optimality of the values of the estimated indicators
Micro level:	As per the factor multiplicative model:		
List of financial package sources	With a decrease in financial independence, the equity share in permanent capital reduced economic tension by 156.3% and 59.2%, respectively, with an overall increase in the resulting indicator, excess of the values of the capital multiplier of the optimal interval (1.4–1.5 units).		
Amount of financing of the corporation's assets, and their structure	A decrease in the equity capital agility indicator by 0.455 units with its negative values; is justified with negative own working capital along with the negative impact of the permanent asset index		
The financial performance of corporations	Decrease in return on assets in terms of net profit by 0.02 units due to a decrease in the profitability of sales in terms of net profit and financial independence, which in the structure of changes in factors amounted to 85% and 15%, respectively.		
	As per risk zone:		
	“Yellow”	“red”	
	Single cases of meeting the criterion values in the ratio of mobile and immobilized assets, mobile property, and sales profitability in terms of net profit. Change in the ratio of income tax and other payments from profit before tax to profit before tax on a large scale.	Failure to meet the values of general solvency, current liquidity, capitalization, financial independence, stability, constraints (their growth), long-term borrowing, and equity multiplier. The negative maneuverability of own capital, working capital availability, and reserves. Exceeding values of the permanent asset index (1 unit) demonstrate the obvious risk of liquidity loss.	
Meso- level	the constant discrepancy between the values of indicators of current liquidity, general solvency, capitalization, financial independence, stability, tension with criteria levels; negative values of the index of provision with own working capital; isolated cases of discrepancy between the values of return on assets, equity, sales to criteria levels; and unstable economic situation in the region.		
Macrolevel	The predominant negative influence factor is the country's unstable economic and political situation.		

Table 10. Assessment of Absolute and Relative Deviations of Strategic Values of Financial Indicators from Actual Ones in SC "Dairy Plant "Stavropolsky"

YY	Indicators							
	Absolute				relative			
	Financial obligations (in thousand rubles)		Deviations		Financial strains (units)		Deviations	
	Actual	Strategic	Absolute (in thousand rubles)	Relative %	Actual	Strategic	Absolute (in thousand rubles)	Relative %
1	2	3	4	5	6	7	8	9
2012	641061	514481	- 126580	- 19,8	0,612	0,491	- 0,121	- 19,8
2013	848086	607144	- 240942	- 28,4	0,686	0,491	- 0,195	- 28,4
2014	794613	583036	- 211577	- 26,6	0,669	0,491	- 0,178	- 26,6
2015	742629	586668	- 155961	- 21,0	0,623	0,492	- 0,131	- 21,0
2016	808884	629433	- 179451	- 22,2	0,632	0,492	- 0,14	- 22,2
2017	780964	635415	- 145549	- 18,6	0,603	0,491	- 0,112	- 18,6
2018	1211886	868989	- 342897	- 28,3	0,685	0,491	- 0,194	- 28,3
2019	1343774	945312	- 398462	- 29,7	0,698	0,491	- 0,207	- 29,7
2020	1337601	962975	- 374626	- 28,0	0,683	0,492	- 0,191	- 28,0
2021 _{strateg.}		1015991				0,491		
2022 _{strateg.}		1067636				0,492		
2023 _{strateg.}		1112705				0,492		

BASED ON THESE OPTIMAL LIMITS, the SC "Dairy Plant "Stavropolsky" should reduce its liabilities by 18.6–29.7%. With a relative deviation from the optimal limit of the values in the financial strains indicator and liabilities of up to 10%, it is reasonable to infer that they are in the "yellow" risk zone; with a relative deviation of more than 10%, they are in the "red" zone. Thus, SC "Dairy Plant "Stavropolsky" is included in the "red" zone based on the specified indicator values. The synergy of current (assets, equity) and strategic (liabilities) values of indicators describing the financial stability, liquidity, and solvency of corporations will make it possible to obtain modified risk indicators, the use of which will ensure a rational combination of operational and strategic financial decisions in the process of financial controlling and corporate risk controlling.

In the calculation of capitalization indicators for SC "Dairy Plant "Stavropolsky," short-term debt and the values of liabilities from the "green" risk zone were included. This resulted in a decrease in the values of the modified capitalization. The values of short-

term debt with modifications rose. In contrast to the indicator of financial constraints, the values of the indicator for general solvency are in the "green" risk zone (2.033–2.037 units) and have increased.

Table 11. Assessment of the Relative Deviation of Capitalization Indicators, Short-Term Debt, and General Solvency Modified from the Actual Values in SC “Dairy Plant “Stavropolsky”

YY	Indicators' values								
	Capitalization (units)		Relative deviations, %	Short-term liabilities		Relative deviations, %	General solvency		Relative deviations, %
	actual	modified		actual	modified		actual	modified	
2012	1,576	1,265	- 19,7	0,992	1,235	+ 24,5	1,635	2,037	+24,6
2013	2,183	1,563	- 28,4	0,994	1,388	+39,6	1,458	2,037	+39,7
2014	2,023	1,484	- 26,6	0,992	1,353	+36,4	1,494	2,037	+36,3
2015	1,651	1,304	- 21,0	0,993	1,257	+26,6	1,606	2,033	+26,6
2016	1,719	1,338	- 22,2	0,991	1,274	+28,6	1,582	2,033	+28,5
2017	1,522	1,238	- 18,7	0,993	1,220	+22,9	1,657	2,037	+ 22,9
2018	2,172	1,557	- 28,3	0,986	1,375	+39,5	1,460	2,037	+39,5
2019	2,311	1,626	- 29,6	0,979	1,392	+42,2	1,433	2,037	+ 42,1
2020	2,159	1,554	- 28,0	0,969	1,346	+38,9	1,463	2,033	+ 39,0

5. DISCUSSIONS

In both Russian and international literature, working with deviations in the financial management system of corporations is viewed ambiguously. [Asaturova & Koshman \(2020\)](#) deem the following methods to be the most essential for financial control: analysis of the financial and economic situation of a company based on operational information, assessment of the balance sheet, deviations of the actual from the plan, financial stability, liquidity, and profitability. Financial control is used to ensure the corporation's liquidity and profitability. Director for the Control and Risks Unit at [Rusal Anankina & Danilochkina \(2002\)](#) believe that in the process of financial control in corporations, a comparison between actual and expected results is essential.

In contrast, [Stromback et al. \(2020\)](#) argue that financial behavior and well-being are predicted by subjective self-control and not objective indicators of executive functions, thus admitting economic indicators as a self-control instrument.

The authors believe that the obtained values of strategic, modified financial risk indicators can be incorporated into the strategic guidelines of corporations, subsequently serving as planning elements for other key economic indicators, making it possible to determine the deviations of their actual values from the criteria, planned or strategic ones, even under conditions of increased uncertainty and risk. Consequently, tools for

operational, strategic, and predictive financial control, risk control, and self-control are devised for the corporate financial management system.

6. CONCLUSIONS AND RECOMMENDATIONS

In developing the framework for processing financial indicators within a corporation's operational and strategic financial control system, the following was accomplished:

1. It is determined that corporations' financial and internal financial control goals are to identify and eliminate negative deviations. Still, financial control, unlike financial control, is future-oriented.
2. It is demonstrated that the definition of "critical" deviations is necessary; the distribution of financial indicators by color according to the "traffic light" principle into risk zones ("green," "yellow," and "red") was implemented; the zones "green," "yellow," and "red" are highlighted for the values of the financial strains indicator;

Depending on the level of deviations with the financial indicator values from the criterion levels, a set of recommendations is proposed for their distribution into three risk zones: "green" (indicators indicating the systematic achievement of the strategic goal by corporations), "red" (obvious critical deviation of the indicator values from the criterion levels), and "yellow" (alarming deviations with the indicator value levels); SC "Dairy Plant "Stavropolsky."

5. The matrix was designed to keep the impact of risk factors on the values of estimated financial indicators under control; it incorporates indicators included in the "red" and "yellow" risk zones, and it focuses on the processing of deviations in financial indicator values, the regular revision of control indicators taking into account their distribution by color categories of risk, and the updating of indicators as needed.

At SC "Dairy Plant "Stavropolsky, the framework for processing financial indicators in the operational and strategic financial controlling system is implemented in practice. Efficient application of the toolkit for processing economic indicators in the system of operational and strategic financial controlling in corporations requires the identification of opportunities, including:

7. Implications And Limitations Of The Study

Operational Financial Control: The study emphasizes the importance of operational financial control methods, such as analyzing financial and economic data, assessing balance sheets, and evaluating deviations. Implementing these methods can enhance a company's financial stability, liquidity, and profitability. **Comparative Evaluation:** The study emphasizes the need for a comparative evaluation of actual and anticipated results in financial control. This methodology facilitates a more comprehensive understanding of economic performance and decision-making. **Subjective Self-Control:** The study's

opposing viewpoint suggests that subjective self-control influences economic behavior and well-being. This implies that approaches to assessing and managing financial performance should consider individuals' subjective perspectives and motivations. Strategic Financial Indicators: The study recommends incorporating strategic financial risk indicators into corporate guidelines. This addition provides a framework for planning other important economic indicators, identifying deviations, and aligning financial performance with strategic objectives. Tools for Financial Management: This study focuses on the evolution of operational, strategic, and predictive financial control, risk management, and self-controlling tools. These instruments can improve the efficacy of financial management practices, particularly in uncertain and hazardous environments.

8. LIMITATIONS

Generalizability: The findings and implications of the study may be context-specific and may not apply to all businesses or industries. The applicability of the proposed approaches could be affected by factors such as organizational size, industry dynamics, and regional variations. The study acknowledges the importance of subjective self-control in financial management but does not explore subjective assessments' potential biases or limitations. Future research could investigate these facets to provide a more comprehensive comprehension of subjective self-control's implications.

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