

Evaluation of the effectiveness of strategic and tactical controlling based on the analysis of the company's financial reports**Maryna Berest**PhD in Economics, Associate Professor
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Abstract. The implementation of controlling is a rational necessity to ensure an effective management system in a company, so it is essential to evaluate its effectiveness in terms of tactical and strategic components. However, there is no general system of indicators reflecting the effectiveness of strategic and tactical controlling, therefore, the purpose of the study was to develop and improve a methodological approach to evaluate the effectiveness of such controlling based on the analysis of the company's financial reports as a tool for the validity of management decisions. Based on the method of comparative analysis, the differences between tactical and strategic controlling were identified and characterized, which made it possible to specify the criteria for evaluating their effectiveness. It was found that the monitoring basis of controlling mechanisms is comprehensive and covers the entire spectrum of operational and management processes in the company. A system of indicators was formed to evaluate the effectiveness of tactical and strategic controlling. A methodological approach to evaluating the effectiveness of controlling components based on the analysis of the company's financial reports is proposed. It was tested on the example of PJSC Trust Zhytlobud-1 by calculating generalizing integral indicators of the effectiveness of controlling components based on data from the company's financial reports. Using the algorithm of the taxonomic analysis method, a matrix of observations was formed and standardized, a reference vector was constructed and integral indicators for evaluating the effectiveness of the company's tactical and strategic controlling were calculated. The application of the proposed method made it possible to reveal the problematic aspects of distribution processes in the company and in the context of managerial decision-making. This allowed to evaluate the effectiveness of the controlling system in the company and to determine the reserves for improving the effectiveness of controlling processes. The practical value of the study lies in the proposed methodological approach, which may be useful in the process of diagnosing the effectiveness of the quality of managerial decision-making in companies both in the current activity and in the long run

Keywords: diagnostics; management; property value; bankruptcy; profitability; fixed assets; current assets

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● INTRODUCTION

In the conditions of economic uncertainty and turbulence, an important aspect for companies' managers is the use of advanced and relevant mechanisms for substantiating and making managerial decisions, the use of financial instruments to implement these decisions. Controlling occupies an important place in the system of mechanisms for substantiating decisions. Controlling is a complex, holistic management system aimed at the sustainable development of the company. It examines the implementation of the company's business strategy based on the adopted general goal, analyses trends and coordinates the further development of operational, investment and financial activities and forms information for making substantiated managerial decisions. The main document (or set of documents) that provides information on the company's financial position and performance during a given period is its financial reports. It is an important tool for evaluating the financial result of the company's performance and thus for evaluating the effectiveness of controlling.

A number of works by Ukrainian and other economists are devoted to the study of controlling problems. General issues of controlling are examined in the works of scholars V.M. Varenyk & O.V. Shpuryaka (2019) and P.V. Pronoza *et al.* (2020), in which the authors determine the aim, objectives, tools of controlling and ways to improve the controlling system in enterprises. The authors A.A. Pylpenko *et al.* (2023) defined the place and role of strategic controlling in the system of monitoring the financial and economic activities of an enterprise association and determine its role in the implementation of strategic management. The work of I. Perevozova *et al.* (2022) focused on the feasibility of diagnostic measures and proposed a system of financial indicators that can be used to evaluate the implementation of strategic controlling mechanisms. Ukrainian researcher N. Belyaeva (2021) considered the problematic aspects of controlling in the company in relation to the information and accounting components. It is noted that the efficiency of the operating controlling system in the company directly affects the process of managerial decision-making and thus ensures the effectiveness of the company. A.V. Kamil (2020) proposed a composition of financial and non-financial indicators of accounting support of controlling and proved that controlling indicators are an important tool in the process of substantiating, making and implementing management decisions. N.V. Sablina (2019) pays attention to financial controlling, which is considered in the company management system as a multidimensional process that consists of business processes and superimposed on the organizational structure of the company. However, the issue of evaluating the effectiveness of controlling in the company was excluded in the paper. Given the wide range of issues covered by the research of Ukrainian and foreign scholars, the issues of the essence, theoretical and methodological tools of controlling based on the analysis of the company's financial reports, the development of methodological approaches to evaluating the effectiveness of controlling in the company in terms of its components, integrated approaches to the development of a controlling model are not yet sufficiently developed, which confirms that the chosen research topic is timely.

The current state of companies' activity, caused by the aggressive influences of the external environment of Ukraine, forms the need for the implementation and emphasizes the rational need to evaluate the effectiveness of controlling in the company. However, this area is characterized by ambiguity in understanding on the part of business practitioners and academics. This statement refers to a greater extent to controlling tools and the means of evaluating its effectiveness. The understanding of the concept of "effectiveness" as the ratio of the value expression of "result" to the value of "invested resources" for the controlling system is impossible in practice, which also determines the relevance of the analytical search for evaluation indicators and methodological approaches to evaluating the effectiveness of controlling on the basis of the company's financial reports. The purpose of the study was to formulate and test a methodological approach aimed at diagnosing and evaluating the effectiveness of strategic and tactical controlling using the company's financial reports on the basis of the proposed model for determining the effectiveness of controlling components, which made it possible to evaluate the effectiveness of the controlling system operating in the company. In order to accomplish this purpose, the following tasks were solved: determination of partial indicators for evaluating strategic and tactical controlling; development of a methodology for evaluating the effectiveness of strategic and tactical controlling based on the company's financial reports.

● MATERIALS AND METHODS

The studies were conducted on the basis of statistical information using methods of scientific cognition. In order to study the theoretical and methodological tools of controlling and to develop a methodological approach to evaluate the effectiveness of tactical and strategic controlling and their characteristics, the methods of systematic approach, analysis, synthesis, scientific abstraction and generalization were applied. A comparative analysis was used to compare strategic and tactical controlling. To implement the methodological approach, the financial reports of PJSC Trust Zhytlobud-1 (n.d.) for 2017-2022, published on the company's official website, were used. The analysed years are chosen due to the fact that at the time of the study the company had not published the financial reports for 2023. The choice of the company for the study is substantiated by the fact that it is the largest construction company in Kharkiv (Ukraine) and continues its intensive development. To calculate the indicators of tactical and strategic controlling, the method of coefficient analysis was used and the following indicators were calculated. The net profit margin (R_{NPM}) was defined by the formula:

$$R_{NPM} = \frac{NI}{S}, \quad (1)$$

where NI is net income; S is sales. The operating profit margin (R_{opm}) was defined by the formula:

$$R_{opm} = \frac{EBIT}{S}, \quad (2)$$

where $EBIT$ is earnings before interest and taxes. The integral indicator of current assets (I_{ca}) was calculated by the formula:

$$I_{ca} = \sqrt{T_{ca} \times R_{ca}}, \quad (3)$$

where T_{ca} is current assets turnover; R_{ca} is return on current assets (with income before taxes). The integral indicator of fixed assets (I_{fa}) was defined by the formula:

$$I_{fa} = \sqrt{T_{fa} \times R_{fa}}, \quad (4)$$

where T_{fa} is fixed assets turnover; R_{fa} is return on fixed assets. The following formula was used to determine the integral indicator of the production staff effectiveness (I_{ps}):

$$I_{ps} = \sqrt{S_w \times R_w}, \quad (5)$$

where S_w is sales to wages of production staff; R_w is return to wages of production staff (with *EBIT*). The profitability of management (P_M) was calculated by the formula:

$$P_M = \frac{EBIT}{AC+SC}, \quad (6)$$

where *AC* is administrative and management costs; *SC* is sales costs. The share of means of production (S_{mp}) was calculated by the formula:

$$S_{mp} = \frac{MP}{A}, \quad (7)$$

where *MP* is means of production; *A* is assets. The indicator of economic growth sustainability (I_{egs}) is defined by:

$$I_{egs} = \frac{NI-D}{E}, \quad (8)$$

where *D* is dividends; *E* is equity. The accounts receivable turnover (*RT*) was defined by the formula:

$$RT = \frac{S}{AR}, \quad (9)$$

where *AR* is accounts receivable. The integral indicator of hidden bankruptcy (I_{HB}) is defined by:

$$I_{HB} = 0.08 \times R_{cash} + 0.77 \times R_{current} + 0.15 \times I_{Beaver}, \quad (10)$$

where R_{cash} is cash ratio; $R_{current}$ is current ratio; I_{Beaver} is Beaver's coefficient. In order to build integral indicators for the evaluation of tactical and strategic controlling, the method of taxonomic analysis was used. It involves the formation and calculation of taxonomic indicators to make a generalized evaluation of the state of objects characterized by a certain set of characteristics. In general, the taxonomy method allows solving the problem of characterization and/or comparison of multidimensional objects in relation to the normative reference vector formed by the researcher. The taxonomic indicator can vary in the interval [0; 1] and has the following interpretation: the closer the value of the constructed taxonomic indicator is to one, the higher the condition of the studied object (process) is evaluated. The algorithm of the method is presented by M. Berest & M. Bobro (2021). To analyse and evaluate the dynamics of integral indicators of the level of effectiveness of tactical and strategic controlling on the basis of logical methods of analysis, synthesis and generalization, analytical conclusions were drawn; problems and weak points in the company's activities were identified.

● RESULTS

The effectiveness of the controlling system affects all indicators of the company. The result of each individual process and their integral totality depend on the scope of control – thorough attention to deviations of the actual course of production activity from the planned or reference parameters. Therefore, the monitoring basis of control mechanisms is broad and combines the characteristics of expenditure and revenue flows, such as intensity and completeness, synchronicity, regularity and conflict of priorities. The companies' business processes that represent the content of their operating activities are determined by the specifics of the business mechanism, namely the parameters of the use of production resources, i.e., in monetary terms, they correspond to the amount of costs. They cause an impact on the dynamics of business activity coefficients, profitability and structure of the company's financial potential.

Production processes at the distribution stage of operating activities depend on the result achieved after the completion of operational and production processes, and are of a strategic nature, since they are aimed at coordinating the business entity with the market environment, in particular regarding its investment attractiveness, and business reputation. The results of production processes geared to the external environment are strategic, as they determine the composition and structure of the company's financial sources in the future and, accordingly, the degree of its dependence on the environment. The quality of decisions made at the strategic level is an important determinant of the level of solvency, financial stability and the condition of the company's assets in the context of capital accumulation and reproduction.

At the same time, the analysis of financial statements is an important tool that provides a high-quality evaluation of the company's performance as a whole and, in particular, its controlling mechanisms, especially in the face of negative influences from the external environment. The use of the company's financial statements, as defined by M. Berest (2019), as an array of informative and structured data for the calculation and analysis of relevant indicators, provides an opportunity to evaluate the degree of effectiveness of controlling in the tactical and strategic contours, express reasoned assumptions and develop recommendations for management measures aimed at increasing its effectiveness. It is proposed to evaluate the effectiveness of the company's controlling system in two stages: evaluation of the effectiveness of tactical controlling; evaluation of the effectiveness of strategic controlling (controlling distribution processes and making managerial decisions) (Fig. 1). To quantify the effectiveness of tactical controlling, indicators of net profit margin, operating profit margin with earnings before interest and taxes, an integral indicator of current assets, an integral indicator of fixed assets, an integral indicator of the production staff effectiveness and an indicator of the profitability of management were selected. Net profit margin is a generalizing indicator of the effectiveness of setting up and conducting production processes (production and trading activities) and provides an opportunity to evaluate the impact of the company's product range, its pricing policy, cost structure and the cost of hired resources on its profitability. The given coefficient shows the amount of net profit included in each hryvnia of the company's net income.

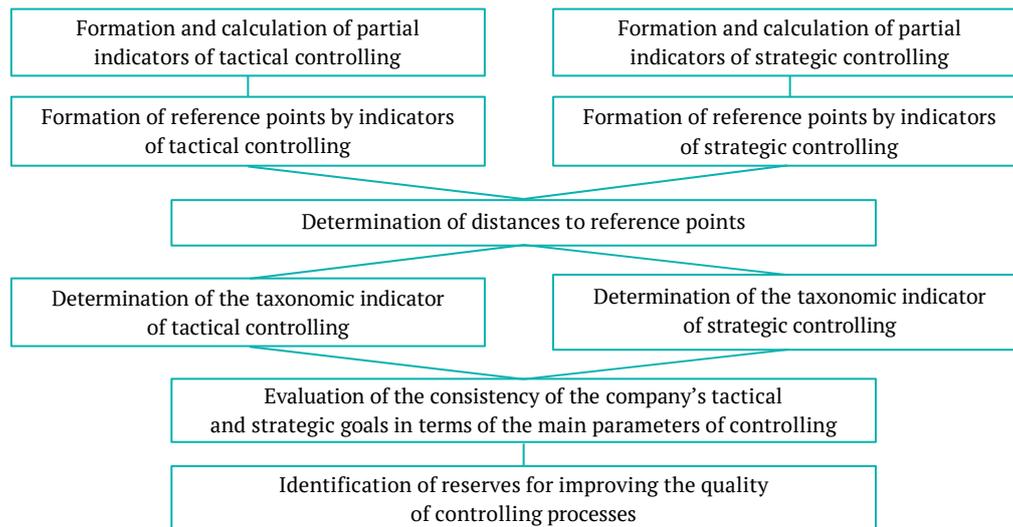


Figure 1. Methodological approach to the analysis of the effectiveness of the company's controlling mechanisms

Source: developed by the authors

The indicator of operating profit margin with earnings before interest and taxes allows to evaluate the company's ability to reproduce and expand its production processes in the form of net return on total investments consumed and indicates the overall effectiveness of controlling internal production processes and operations aimed at manufacturing the company's products. The operating margin indicator is one of the best tools for determining operational effectiveness and shows the management's ability to generate profit from the costs associated with the production and sales. Negative values of this indicator in the case of the company's unprofitable operation indicate deficiencies in the operational management of the industrial company in general and in its controlling subfunction in particular.

The integral indicator of the current assets effectiveness is calculated on the basis of indicators of current assets turnover and return on current assets. In case of the company's loss-making activity, the value of the integral indicator for further calculations is taken to be 0. This means that the company's inefficiency is confirmed when, with significant business activity (intensity of production processes), it is not possible to achieve a positive result. Thus, the economic content of this indicator reveals the value of the efficiency of the company's costs.

The integral indicator of the fixed assets effectiveness characterizes the conditional average economic effect in the form of net income from sales, core earnings and labour capital productivity, which accounts for each hryvnia of expenses invested in fixed assets. The use of this indicator for the analysis of controlling activities makes it possible to evaluate the synergistic intensity of the economic effect due to the expediency of the capital use. This indicator can take negative values in case of the company's unprofitable operation, which indicates miscalculations both at the stage of controlling the operation of production equipment and shortcomings in the company's personnel policy.

The integral indicator of the production staff effectiveness is calculated as the geometric mean of the following indicators: net sales revenue per 1 UAH of wages (including accruals); return to wages of production staff (including

allocations for social requirements) for operating profit before tax. The proposed indicator reflects the conditional average economic effect in the form of sales, core earnings, which accounts for each hryvnia of wages of the main production staff – direct executors of the company's production (workers, engineering and technical personnel, employees involved in maintaining production processes). If the company operates at a loss, this indicator acquires negative values, signalling significant shortcomings in the personnel structure, the system of motivation and incentives (moral and monetary) for high-quality work.

The indicator of profitability of production processes management characterizes the profitability of the management system in the company. The functional load of this indicator includes coordinating both internally and externally oriented production processes, ensuring the coherence of interests between the company and the market environment, supporting investment attractiveness and ensuring the growth of the company's market value. This indicator is calculated as the result of dividing the *EBIT* indicator by the amount of administrative costs and sales costs. It allows to evaluate the level of core earnings compared to 1 UAH costs for maintaining administrative staff and sales service. If the value of the indicator is below zero, then the company's management requires drastic changes, in particular, the introduction of controlling mechanisms at the operational level.

To quantify the effectiveness of strategic controlling, the following indicators were selected: equity to non-current assets ratio; inventory to working capital ratio; share of means of production; indicator of economic growth; accounts receivable turnover; integral indicator of hidden bankruptcy. The equity to non-current assets ratio (type of financial policy) is determined depending on the funding ratio, which shows what share of the company's activities is financed from equity. There are aggressive, moderate and conservative financial policies, according to which the nature of controlling mechanisms changes. With an aggressive financial policy, the company's capabilities and its controlling system are somewhat overestimated, the

controlling system of companies with a conservative financial policy is rigid; a moderate financial policy corresponds to the moderate rigidity of controlling operations. Typically, the type of the company's financial policy is determined by the ratio of borrowed and own funds in the formation of the company's assets, comparing the actual indicators with their generally accepted values.

The indicator of inventory to working capital ratio (type of financial stability) is determined in accordance with the excess or shortage of sources of inventory financing, which is defined as the difference between the amount of sources of coverage and the inventory amount. The list of partial indicators is continued by the share of means of production, which not only characterizes the structure of non-monetary assets, but also determines the level of the company's production potential, the equipment of the operating process with means of production, which in turn reflects the efficiency of distribution production processes and managerial decisions. This indicator is calculated as the share of means of production in the total property amount. A higher value of this coefficient will indicate higher effectiveness of strategic controlling of production processes.

The indicator of economic growth sustainability determines the future pace of the company's development. The indicator of accounts receivable turnover characterizes

the effectiveness of strategic controlling of the company's need for current capital and the effectiveness of controlling production processes related to the formation of revenue cash flows. The increase in current accounts receivable through the introduction of prepayment for goods and services contributes to the growth of the indicator of strategic controlling of production processes. Conversely, the growth in credit sales, which reduces the value of accounts receivable turnover, indicates a weakening of the severity of strategic controlling of production processes. This trend is also unfavourable for companies in the machine-building industry, which is naturally characterized by a significant duration of the production and financial cycle and high production costs.

The next partial indicator of the effectiveness of strategic controlling is the indicator of hidden bankruptcy. This indicator is the result of the summation of four ratio indicators, adjusted for weights, according to the correlation of the normative values of partial liquidity ratios: cash ratio, current ratio and Beaver's coefficient. Thus, it is necessary to evaluate the effectiveness of tactical and strategic controlling. The dynamics of the above-mentioned partial indicators calculated on the basis of data from the financial reports on the example of PJSC Trust Zhytlobud-1 (n.d.) for the period of 2017-2022 is shown in Table 1.

Table 1. Calculation of partial indicators of tactical and strategic controlling PJSC Trust Zhytlobud-1 for 2017-2022

Indicators	2017	2018	2019	2020	2021	2022
TACTICAL CONTROLLING						
Net profit margin	0.026	0.022	0.014	0.003	0.004	0.000
Operating profit margin with earnings before interest and taxes	0.050	0.040	0.030	0.016	0.014	0.010
Integral indicator of current assets	0.067	0.098	0.064	0.025	0.026	0.002
Integral indicator of fixed assets	1.369	2.207	1.774	0.736	0.924	0.414
Integral indicator of the production staff effectiveness	0.843	1.109	0.875	0.448	0.450	0.984
Profitability of management	0.862	0.781	0.631	0.232	0.262	0.491
STRATEGIC CONTROLLING						
Equity to non-current assets ratio	5.008	4.569	9.642	7.003	6.102	5.695
Inventory to working capital ratio	0.363	0.305	0.736	0.499	0.338	0.348
Share of means of production	0.692	0.626	0.539	0.662	0.639	0.576
Indicator of economic growth sustainability	0.029	0.052	0.015	0.002	0.005	0.000
Accounts receivable turnover	1.776	2.130	1.037	1.015	1.018	0.517
Integral indicator of hidden bankruptcy	1.340	1.542	2.180	1.635	1.229	1.126

Source: calculated by the authors based on PJSC Trust Zhytlobud-1 (n.d.)

The analysis of the above data shows that the values of the indicators under study have a multidirectional dynamics and affect the effectiveness of the tactical and strategic controlling of the company under study differently. The net profit margin of PJSC Trust Zhytlobud-1 constantly decreases over the analysed period and in 2022 shows a net profit of 0 per each hryvnia of the company's net income, which indicates a deterioration in the quality of the company's financial results structure and an increase in the share of expenses in the net income. The operating profit margin with *EBIT* indicates the ability of the management to profit from the costs associated with production and sales and, like the previous indicator, significantly declines throughout the period, which indicates the shortcomings of the operational management of the industrial company in general and its controlling subfunction in particular.

The value of the integral indicator of current assets rose at the beginning of the period under study, in particular reaching a peak value in 2018. After that, however, its value only decreased and reached a minimum (0.002) in 2022, which characterizes the decline in the company's efficiency, when even with significant business activity it is not possible to achieve a positive result, especially under the negative influences of the external environment (military operations on the territory of Ukraine, the 2022 large-scale military invasion).

The integral indicator of fixed assets shows an unstable trend, while in 2022 it reached its minimum, like the previously mentioned indicators. This may indicate both the problems arising at the stages of quality control and operation of production facilities and the low intensity of their utilization. The integral indicator of the production

staff effectiveness is also unstable, but unlike the others, it increases in 2022. At the same time, this phenomenon cannot be evaluated positively, because it is explained primarily by a reduction in wage costs and social contributions associated with a reduction in the scale of activities of PJSC Trust Zhytlobud-1 due to active combat operations in the Kharkiv region and the city of Kharkiv. There is a similar situation regarding the indicator of profitability of production processes management. Its increase at the end of the analysed period is due to a decrease in administrative costs and sales costs, and not to an increase in earnings before interest and taxes. All this points to the need for radical changes in the company's management, in particular strengthening the control over the achievement of performance and efficiency targets at the operational level.

As far as the partial indicators of the strategic controlling evaluation are concerned, it should be noted that for PJSC Trust Zhytlobud-1 the equity to non-current assets ratio is above 1 throughout the entire period, i.e., the company's production assets are fully covered by its own capital and its current assets are partially covered by it, which indicates a moderate level of risk in the capital structure. The dynamics of inventory to working capital ratio shows that the company's inventory is at least 30% financed by equity, and this value peaked in 2019 (73.6%). It also confirms a sufficient level of the company's financial stability and positively characterizes the level of acceptable rigidity and adaptability of the internal control system.

The share of means of production varies from 69% to 58%, which characterizes the equipment of the operating process with means of production and reflects the efficiency of sales processes and managerial decisions in the company. Its decrease is due to a change in the structure of the company's assets, namely a decrease in the volume of work in progress and an increase in accounts receivables, which in turn may be explained by a decrease in the scale of activities of PJSC Trust Zhytlobud-1 due to the martial law in Ukraine. The indicator of economic growth sustainability determines the future pace of the company's development and is an important indicator of the effectiveness of strategic controlling. For the company under study, the values of this indicator show significant fluctuations in the pace of the company's development and indicate a decrease in the effectiveness of strategic controlling since 2020, and in 2022 this indicator equals 0, which indicates an absolute necessity to revise approaches to the implementation of strategic controlling

it the company in the context of military aggression. The effectiveness of controlling production processes related to the formation of revenue cash flows allows to evaluate the indicator of accounts receivable turnover, which varies from 2.1 to 0.5. The constant fluctuation in the accounts receivable turnover is unfavourable for construction industry companies, characterized by a significant duration of the production and financial cycle and high production costs. The integral indicator of hidden bankruptcy of PJSC Trust Zhytlobud-1 had its peak value in 2019, but then decreased significantly, and as of 2022 was much lower than its boundary value ($1.126 < 1.616$), which indicates a low correspondence between external controlling activity and actual management effectiveness.

Using the proposed methodology for evaluating the quality of controlling mechanisms, the indicators of tactical and strategic controlling were calculated and analysed on the example of PJSC Trust Zhytlobud-1. The authors believe that in order to build generalizing indicators of the effectiveness of controlling in the company it is expedient and necessary to use methods that would allow to fold the formed multidimensional set of indicators characterizing the object under study in time and space into a single number of characteristics, and thus to build a comprehensive evaluation of the level of controlling effectiveness. In this regard, the authors propose the use of the taxonomic analysis method, which will allow to calculate taxonomic indicators for evaluating the effectiveness of tactical and strategic controlling separately. The following interpretation of the formed indicators is proposed: the closer the value of the constructed taxonomic indicator is to one, the higher the level of controlling effectiveness is estimated.

The implementation of the algorithm for constructing a taxonomic indicator takes 5 stages: formation of a matrix of observations; construction of a standardized matrix; formation of a reference vector; determination of the distances between the indicators of the matrix and the formed reference vector; calculation of a taxonomic indicator (Berest & Bobro, 2021). It is necessary to build taxonomic indicators of the level of controlling effectiveness for the PJSC Trust Zhytlobud-1 under study. The results of calculations of tactical and strategic controlling indicators presented in Table 1 were used as a matrix of observations. Further, according to the algorithm of the taxonomic analysis method by T. Klebanova *et al.* (2018), a standardization procedure is carried out, the result of which is a standardized matrix of indicators (Table 2).

Table 2. Standardized matrix of tactical and strategic controlling indicators of PJSC Trust Zhytlobud-1

Indicators	2017	2018	2019	2020	2021	2022
TACTICAL CONTROLLING						
Net profit margin	1.320	0.997	0.214	-0.795	-0.672	-1.064
Operating profit margin with earnings before interest and taxes	1.482	0.806	0.193	-0.683	-0.774	-1.024
Integral indicator of current assets	0.566	1.446	0.477	-0.623	-0.594	-1.272
Integral indicator of fixed assets	0.195	1.439	0.795	-0.743	-0.464	-1.221
Integral indicator of the production staff effectiveness	0.211	1.173	0.327	-1.218	-1.213	0.720
Profitability of management	1.215	0.905	0.334	-1.186	-1.071	-0.198
STRATEGIC CONTROLLING						
Equity to non-current assets ratio	-0.726	-0.966	1.807	0.364	-0.128	-0.351
Inventory to working capital ratio	-0.417	-0.772	1.863	0.412	-0.573	-0.513

Table 2, Continued

Indicators	2017	2018	2019	2020	2021	2022
STRATEGIC CONTROLLING						
Share of means of production	1.236	0.063	-1.487	0.705	0.302	-0.818
Indicator of economic growth sustainability	0.608	1.723	-0.133	-0.737	-0.601	-0.860
Accounts receivable turnover	0.892	1.493	-0.359	-0.395	-0.391	-1.240
Integral indicator of hidden bankruptcy	-0.444	0.087	1.769	0.332	-0.735	-1.008

Source: calculated by the authors

The next step is to build a reference vector, i.e., to determine the reference values for all indicators. To do so, it is necessary to divide them into stimulants and destimulants, taking into account the impact of their changes on the effectiveness of controlling. In this case, all the se-

lected indicators can be classified as stimulants, as their increase will indicate an increase in the level of effectiveness of both tactical and strategic controlling mechanisms in the company. The results of constructing the reference vector are presented in Table 3.

Table 3. Formation of a reference vector

TACTICAL CONTROLLING						
Indicator	Net profit margin	Operating profit margin with EBIT	Integral indicator of current assets	Integral indicator of fixed assets	Integral indicator of the production staff effectiveness	Management profitability indicator
Reference point	1.320	1.482	1.446	1.439	1.173	1.215
STRATEGIC CONTROLLING						
Indicator	Equity to non-current assets ratio	Inventory to working capital ratio	Share of means of production	Indicator of economic growth sustainability	Accounts receivable turnover	Integral indicator of hidden bankruptcy
Reference point	1.807	1.863	1.236	1.723	1.493	1.769

Source: calculated by the authors

According to the construction algorithm presented above, the Euclidean distances should be calculated by comparing the existing values of the indicators with the

reference vector. Based on the calculations, taxonomic indicators of the effectiveness of tactical and strategic controlling in the company are built (Fig. 2, Fig. 3).

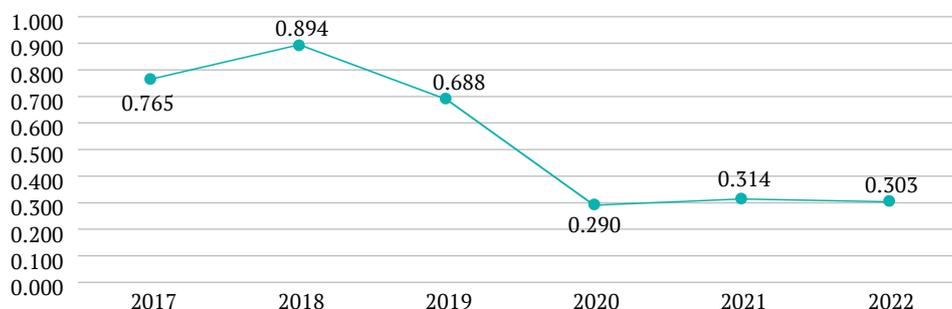


Figure 2. Dynamics of the taxonomic indicator for evaluating the effectiveness of tactical controlling of PJSC Trust Zhytlobud-1

Source: developed by the authors

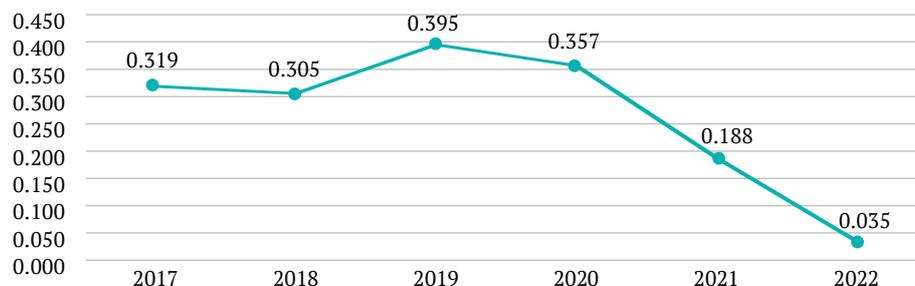


Figure 3. Dynamics of the taxonomic indicator for evaluating the effectiveness of strategic controlling of PJSC Trust Zhytlobud-1

Source: developed by the authors

The taxonomic indicator for evaluating the effectiveness of tactical controlling of PJSC Trust Zhytlobud-1 in 2017-2019 had a rather high value, close to one (maximum – 2018, 0.894). This indicates a high effectiveness of the company's controlling mechanisms at the level of tactical management during this period. Since 2020, however, there has been a significant decline in the indicator (the average value in 2020-2022 is 0.3). The level of effectiveness of tactical controlling at the company level has deteriorated significantly, which may be due to significant negative influences from the external environment (2020 – coronavirus pandemic, 2022 – the Russian Federation's invasion of Ukraine, in particular in the Kharkiv region, where the company under study is located). It should be noted that despite the fact that the overall level of tactical controlling effectiveness has decreased, the value of the taxonomic indicator is maintained at an average level of 0.3, i.e. the company demonstrates the ability to maintain internal controlling mechanisms at an acceptable level.

The taxonomic indicator for the evaluation of the effectiveness of strategic controlling shows significantly lower values throughout the entire period under review. The highest values of the indicator are observed in 2019-2020 (0.395), but within the interval [0; 1] this indicates a rather low level of development of the indicator. This means that the effectiveness of the company's strategic controlling mechanisms is quite low. In 2021-2022, there is a significant decline in the indicator, and in 2022 its value is close to 0 (0.035). Such dynamics can be interpreted as a result of the influence of the negative characteristics of the external operating environment described above, however, such a rapid decline in the indicator indicates the ineffectiveness of strategic controlling in the company under study.

If, under the conditions of external crisis influences, the tactical mechanisms of the company's controlling have demonstrated the ability to function adequately, the effectiveness of strategic controlling has fallen to zero. From this, it can be concluded that there is a need to replace the existing mechanisms of strategic controlling and develop effective mechanisms of strategic controlling that will allow the company not only to adapt to functioning in an unfavourable external environment, but also to set the direction for future sustainable functioning.

● DISCUSSION

The proposed approach to diagnosing the effectiveness of corporate controlling mechanisms makes it possible to evaluate the degree of effectiveness of tactical and strategic controlling, identify problems and weak points. When applied, it can form the basis for managerial decisions aimed at ensuring the sustainable functioning of a business entity. The results obtained complement the modern developments of researchers in the field of formation and evaluation of the effectiveness of the controlling system in companies' activities.

In the work by N.V. Katkova & O.S. Tsyhanova (2019), the main attention is paid to the study, generalization and development of the classification aspects of the factors influencing the formation and implementation of the controlling system at the companies of the industrial complex. The authors argue that in the modern economic space there are many factors of endogenous and exogenous

nature influencing the activities of economic entities. Their generalization allowed the researchers to develop a classification of factors of influence that form the structure of the controlling system. The authors suggest grouping the external factors into seven areas: technological, economic, market, political, legislative, environmental and social, and the internal factors into five, namely: production, strategy, personnel, organization and finance. It can be agreed that taking into account the influence of the selected factors enables the company to increase the effectiveness of forming the controlling system under the conditions of the specific influences of the operating environment. At the same time, the authors have not mathematically confirmed the influence of the identified factors, so it would be advisable to form a system of indicators reflecting this influence.

The study by R. Zhovnovach *et al.* (2023) is devoted to solving the problem of increasing the effectiveness of the system of adaptive management of an agricultural enterprise based on controlling, while in the present article a large construction company was considered. The need to introduce a management system aimed at ensuring a gradual management of the company's processes, taking into account the specifics of functioning with a high degree of promptness, flexibility and efficiency, is substantiated. A retrospective analysis of the emergence and development of the controlling system in industrialized countries was carried out. The results of the analysis made it possible to identify the main concepts of controlling according to their orientation. The peculiarities of the organization of the controlling system in agricultural enterprises of Ukraine in the conditions of seasonal market fluctuations are determined. The authors focused on the construction of a management model, within the framework of which controlling measures are proposed aimed at ensuring the basic conditions for the functioning of an agricultural enterprise and preventing the phenomenon of funds shortage, taking into account seasonality.

Noteworthy is the study conducted by O.A. Husak (2023) on the components of the mechanism for strategic management of enterprise development. It is proved that the mechanism of strategic development management should take into account external changes in the market segment, especially in the conditions of uncertainty, increasing rapid environmental variability and the need for immediate response. The author has improved the approach to understanding the mechanism of strategic management of the development of a transportation company by improving the existing tools for making managerial decisions based on internal potential. However, in the opinion of the authors of this article, insufficient attention is paid to controlling as a subsystem of enterprise management in the strategic perspective, which is the difference between the present paper and the analysed ones.

The system of introducing strategic controlling in the activities of small and medium-sized enterprises (SMEs) in the EU was examined by M. Pavlák & P. Písař (2020). The study was conducted in 2017-2020 on the basis of data from 403 SMEs. The researchers revealed the relationship between the defined variables of controlling, return on assets, turnover, financial analysis and strategic management. A model of strategic management controlling was proposed, which was tested and verified through

experimental implementation in small and medium-sized enterprises. Supporting the results of this study, L. Brikena (2023) also points out the low level of long-term objectives, financial planning and controlling of SME development management. The constructed model has a practical value and is certainly suitable for business practice, but since it focuses on strategic management, it does not take into account the specifics of the company's activities in the operational context.

Strategic aspects of controlling in confectionery enterprises in the context of crisis management were considered by scientists N.V. Lahodiienko *et al.* (2020). The paper develops a model for analysing and forecasting the probability of a crisis situation and bankruptcy at companies in the industry as a tool for strategic controlling. According to the authors, its undoubted advantage lies in the use of financial indicators of the company in dynamics, combined with the consideration of external factors. From the authors' point of view, the developed indicator for evaluating the financial condition is universal, which is due to the possibility of its application for companies of various forms of ownership. However, since the study focuses on strategic aspects, it does not pay enough attention to operational controlling and the evaluation of its effectiveness, which distinguishes it from the present article.

Hungarian scholar V. Lakatos (2020) regards controlling as an information support system that allows to provide managers with the information they need to make production, sales and economic decisions by planning and analysing internal business processes. The author argues that entrepreneurs, especially in micro and small enterprises, tend to evaluate the success of their business based on cash flows. Authors agree that the researcher distinguishes operational and strategic components that complement each other through a combination of understanding the strategic goal and the ways to accomplish it through well-organized and economically supported operational steps. V. Lakatos (2020) analysed 80 small and medium-sized companies characterized by various types of controlling processes, which is due to differences in the size of the company and the qualifications of the manager. One of the biggest factors that contributed to the differences in the papers is the different size of the sample for the analysis. It was found that the use of controlling tools in determining decision-making processes in companies is not yet common.

Analytical aspects of the enterprise controlling system on the example of the restaurant industry were examined by T.V. Kalaitan *et al.* (2021). The authors consider the adaptation of the ABC analysis as a controlling tool, taking into account the industry specifics of companies. The practical value of the proposed approach lies in the possibility of using it as an information and analytical basis for developing and implementing managerial actions aimed at improving effectiveness and ensuring the company's sustainable development, but the study has a rather narrow focus. It does not provide answers to the questions regarding methods for evaluating the effectiveness of controlling, whereas the present study proposes a methodological approach to this.

As the authors of the study agree that the financial dimension of controlling provides practical and useful knowledge for business planning, analysis and corporate

decision-making authors of this study consider it expedient to expand the indicator system for determining the effectiveness of the controlling system in the company based on companies' financial reports. This is confirmed by the fact that the analysis of financial reports is widely used by scholars as a tool for diagnosing various aspects of the company's activity. In the paper by G. Petkovic (2019), the authors apply the analysis of financial indicators to identify differences in corporate decision-making in terms of both budgeting and capital structure, dividend policy and risk management concept depending on the ownership structure of the company. In the study by M. Yousefinejad *et al.* (2022), the authors examined the relationship between the effectiveness of risk management and financial performance based on the financial reports of 138 companies listed on Bursa Malaysia in the product and services sector for the period of 2018-2020. The problem of evaluating and perceiving the risks of companies' financial reports in the context of their control and audit was also examined by K. Liao *et al.* (2018) using a sample of financial reports of Chinese companies for the 2003-2016 period.

Thus, as a result of the analysis of modern developments in the direction of the present article, the need to improve the existing system for evaluating the effectiveness of controlling mechanisms in the company within the framework of strategic and tactical (operational) components has been revealed. It can be concluded that it is necessary to replace the existing mechanisms of strategic controlling and develop effective ones, which would allow the company not only to adapt to functioning in an unfavourable external environment, but also to shape the directions of future sustainable functioning.

● CONCLUSIONS

It has been found that the monitoring base of controlling mechanisms is comprehensive and covers the entire range of operational and management processes in the company. The article highlights and reveals the differences between tactical and strategic controlling, which has made it possible to formulate criteria for evaluating their effectiveness. The study has developed a methodological approach to evaluate the effectiveness of controlling components based on the analysis of the company's financial reports. It has been found that it is advisable to evaluate the effectiveness of the company's controlling system of the enterprise in two stages: evaluation of the effectiveness of controlling distribution processes (tactical controlling) and evaluation of managerial decision-making (effectiveness of strategic controlling). A system of indicators for evaluating the effectiveness of tactical and strategic controlling is formed and formulas for their calculation are given. The proposed methodological approach was tested on the example of PJSC Trust Zhytlobud-1. Using the data of the financial reports of the company under study, the calculation of partial and generalizing indicators of the effectiveness of the components of controlling in the tactical and strategic contours for the period of 2017-2022 was carried out, and analytical conclusions have been drawn.

It has been found that the effectiveness of the company's strategic controlling mechanisms is quite low, such dynamics can be interpreted as a result of the influence of negative features of the external operating environment.

At the same time, the company's tactical controlling mechanisms have demonstrated the ability to achieve an acceptable degree of effectiveness. The proposed method has made it possible to identify problematic aspects of the company's distribution processes, evaluate the effectiveness of the existing controlling system and identify reserves for improving the effectiveness of controlling processes. The results obtained allow to form a system of indicators based on the financial reports and to analyse the effectiveness of the company's controlling in the strategic and operational contours, which is an important determinant for the diagnosis of financial efficiency and ultimately contributes to the sustainable development of the company as a whole.

The application of this approach provides an opportunity to evaluate the company's hidden production and management potential and develop ways to update it, respond promptly and adjust the activities of the company's management to the achievement of strategic goals. Further research should be aimed at improving the overall controlling system in companies.

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● CONFLICT OF INTEREST

None.

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Оцінка результативності стратегічного та тактичного контролінгу на підґрунті аналізу фінансових звітів підприємства

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Анотація. Впровадження контролінгу є раціональною потребою для забезпечення ефективної системи менеджменту на підприємстві, тож необхідно оцінити його результативність у розрізі тактичної й стратегічної складових. Проте не існує загальної системи показників, що відображають результативність стратегічного та тактичного контролінгу, тому метою дослідження був розвиток та удосконалення методичного підходу до оцінки результативності такого контролінгу на підґрунті аналізу фінансових звітів підприємства як інструменту обґрунтованості управлінських рішень. На основі методу порівняльного аналізу виділено та охарактеризовано відмінності між тактичним та стратегічним контролінгом, що дозволило обґрунтувати критерії оцінювання їх ефективності. Встановлено, що моніторингова база контролінгових механізмів має комплексний характер та охоплює весь спектр операційних та управлінських процесів на підприємстві. Сформовано систему показників для оцінки результативності тактичного й стратегічного контролінгу. Запропоновано методичний підхід до оцінки результативності складових контролінгу на основі аналізу фінансової звітності підприємства. Його апробовано на прикладі АТ «Трест Житлобуд-1» шляхом обчислення узагальнюючих інтегральних показників ефективності складових контролінгу на підґрунті даних фінансових звітів підприємства. З використанням алгоритму методу таксономічного аналізу сформовано та стандартизовано матрицю спостережень, побудовано вектор-еталон та розраховано інтегральні показники оцінки ефективності тактичного й стратегічного контролінгу підприємства. Реалізація запропонованого методу дозволила виділити проблемні аспекти розподільчих процесів на підприємстві та в контексті прийняття управлінських рішень. Це дозволило оцінити ефективність існуючої системи контролінгу на підприємстві та визначити резерви підвищення ефективності контролінгових процесів. Практична цінність дослідження полягає в запропонованому методичному підході, що може бути корисним у процесі діагностики ефективності якості прийняття управлінських рішень підприємствами як у поточній діяльності, так і на перспективу

Ключові слова: діагностика; управління; вартість майна; банкрутство; рентабельність; основні засоби; оборотні активи