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Assessing the Effectiveness of Business in the Financial Security System

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ABSTRACT: This paper examines an integrated approach to assessing business effectiveness as a critical element of financial security. The proposed model combines multilevel monitoring, financial diagnostics, ML-based early warning systems and scenario modelling to ensure proactive and risk-oriented management. The implementation algorithm covers KPI audit, data monitoring, analytical core development and managerial integration. The approach strengthens enterprise adaptability, reduces reaction gaps between operations and financial outcomes and improves the resilience of business models under uncertainty. It also emphasizes the need for high-quality data and digital maturity to fully realize advanced analytical capabilities, supporting a long-term framework for financial stability and strategic decision-making.

KEYWORDS: Business efficiency assessment; financial security; risk management; early warning systems; performance monitoring.
JEL classification G32, G34, M21, C53, C45

GENERAL STATEMENT OF THE PROBLEM

In modern conditions of increased economic turbulence, growing financial risks and complicating competitive environment, the assessment of business efficiency acquires strategic importance for ensuring the financial security of an enterprise. Traditional methods of analysis, primarily focused on profitability and return indicators, no longer fully allow the identification of vulnerabilities associated with external and internal threats. The financial security of an enterprise presupposes the organization's ability to maintain the stability of cash flows, ensure resilience to crisis phenomena, and promptly respond to risk factors that can negatively affect its activities. However, many companies assess efficiency in isolation from the elements of financial security, which leads to a distortion of the real picture of business sustainability and a decrease in the quality of management decisions. The problem lies in the lack of a comprehensive approach that allows for the integration of business efficiency assessment and financial security indicators into a unified analytical system. The methodologies that allow identifying the interconnections between business performance, the structure of risks, and the level of its financial protection are insufficiently developed. This makes it difficult to develop long-term development strategies and increases the probability of financial losses. Thus, the need arises for the theoretical substantiation and practical development of methodological approaches to assessing business efficiency in the context of ensuring financial security, which determines the relevance of this research.

ANALYSIS OF RECENT RESEARCH AND PUBLICATIONS

The analysis of contemporary scientific literature presented in the list makes it possible to identify key trends, methodological approaches, and gaps in the study of business efficiency assessment in the context of ensuring financial security. The review of sources was conducted in the logic of evolution from classic fundamental models to modern complex and technological solutions. In research, a clear shift is observed from retrospective diagnosis of financial condition to proactive strategic security management [9, 11]. Works dedicated to the essence and principles of financial security form the necessary theoretical basis. However, the key development vector is the integration of assessment mechanisms directly into the strategic management contour. Demyanchuk's research [10] is conceptually important as it directly formulates the task of assessing the effectiveness of the implementation of the financial security strategy itself, transforming it from a set of indicators into a managed process. This idea is further developed in the work by Piletska & Korytko [4], where assessment becomes the basis for developing specific strategic measures.

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The classic Altman model [1] remains an unshakable foundation and the "gold standard" for assessing the risk of bankruptcy. Its critical analysis and international verification confirm the universality of a number of financial ratios as indicators of threats. However, contemporary studies, such as the work by Tanaka et al. [6], demonstrate a qualitative leap. The use of machine learning algorithms (Random Forest) to create multi-stage Early Warning Systems allows processing large data sets, identifying complex non-linear relationships, and increasing the accuracy of financial distress prediction. This transition from a single model to a comprehensive adaptive monitoring system is the mainstream trend. Current publications reflect the broadening of the very concept of "efficiency" and "security". The study by Zabolotnyy & Wasilewski [8] introduces the related category of financial sustainability into the context, linking it to long-term efficiency. The work by Burmistrov [2] is the most indicative in terms of the transformation of the subject area. The author directly links the assessment of business model efficiency with the system of economic security of a digital enterprise. This indicates that modern financial security is impossible without assessing the risks and effectiveness of digital assets, channels, and business architecture. The technological aspect of security, represented in the most modern source in the list [5], dedicated to blockchain systems, although lying in a somewhat different plane (ensuring transaction security), confirms the general trend toward the technologization of security tools.

The overall methodological synthesis and the identified gaps can be traced by analyzing various approaches. The review by Yusriani et al. [7] highlights the diversity of approaches to Performance Measurement, which are not yet fully systematically adapted for financial security tasks. The works by Kovalenko & Savytska [3] offer specific diagnostic methodologies, but often within the framework of traditional financial analysis. The main trend of recent research lies in the convergence of three directions: 1) classic financial analysis and forecasting models [1, 3]; 2) modern data analysis technologies (AI/ML) and their applications [5, 6]; 3) strategic management and risk-oriented thinking [2, 4, 10]. A paradigm is being formed in which the assessment of business efficiency (in its broad sense, including the digital component) is not a separate function, but a continuous process of integrated monitoring that feeds the system of predictive management of financial risks and threats. However, the publications remain insufficiently explicit regarding the creation of unified integral indicators or dashboards that would synthesize operational KPIs, financial security indicators, and digital environment data into a single managerial panel for decision-making.

FORMULATING THE GOALS OF THE ARTICLE

The goal of the article is to develop a theoretical and methodological approach to assessing business efficiency as a key element of the system for ensuring its financial security. This goal presupposes the synthesis of modern tools for diagnosing financial condition, predictive modeling, and strategic management to create a comprehensive mechanism capable of not only assessing the current state but also preventing threats, thereby forming the basis for the sustainable development of the enterprise in the conditions of digital transformation and increased external environment uncertainty.

RESEARCH METHODS

The research methods applied in the article include:

Analytical review of scientific literature — for the systematization of modern theoretical approaches to assessing business efficiency and financial security.

Comparative analysis – for identifying the advantages and limitations of traditional (e.g., Altman's Z-model) and modern (Artificial Intelligence-based systems) diagnostic methods.

Synthesis – for the integration of disparate concepts (financial diagnosis, strategic management, digital transformation) into a unified theoretical and methodological model.

Logical modeling – for the development of a conceptual scheme demonstrating the interconnection between the assessment of business process efficiency and the mechanisms for ensuring financial security.

Abstraction – for the isolation of key indicators and principles for constructing a financial security system applicable in various industry contexts..

RESEARCH RESULTS

The result of the conducted research was the development and systematization of a comprehensive approach to assessing business efficiency as the basis for its financial security system. The key result is an integration model that links strategic goals, operational activities, financial indicators, and digital infrastructure into a unified risk management contour. Based on the critical analysis of existing approaches [1, 3, 7, 10], a three-level system of indicators was formed (Table 1). This system makes it possible to monitor not only the current financial condition but also its strategic drivers.

Table1 Three-level system of enterprise financial security indicators

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Assessment Level	Group of indicators	Key performance indicators (examples)	Purpose and connection to security
Strategic	Business model effectiveness [2]	Digital revenue share, customer base value, value chain adaptability	Assessment of the long-term resilience and vulnerability of the business model to digital threats and market changes.
Operational-Financial (Tactical)	Financial stability and liquidity [1, 3, 8]	Autonomy ratios, current liquidity ratios, Altman Z-score (adapted)	Diagnosing the current risk of insolvency and dependence on external financing.
	Business activity and profitability	Asset and capital turnover, EBITDA margin, operating margin	Assessing the efficiency of resource utilization and cash flow generation to maintain security.
Process (Operational)	Early warning indicators [6]	Key KPI deviations from plan, overdue accounts receivable dynamics, operational process anomalies (identified by ML)	Early detection of deviations signaling the emergence of threats before they become widespread financially.

The central result is the conceptual model presented in Figure 1. The model illustrates a cyclical process in which performance data at all levels are input to the safety management system.

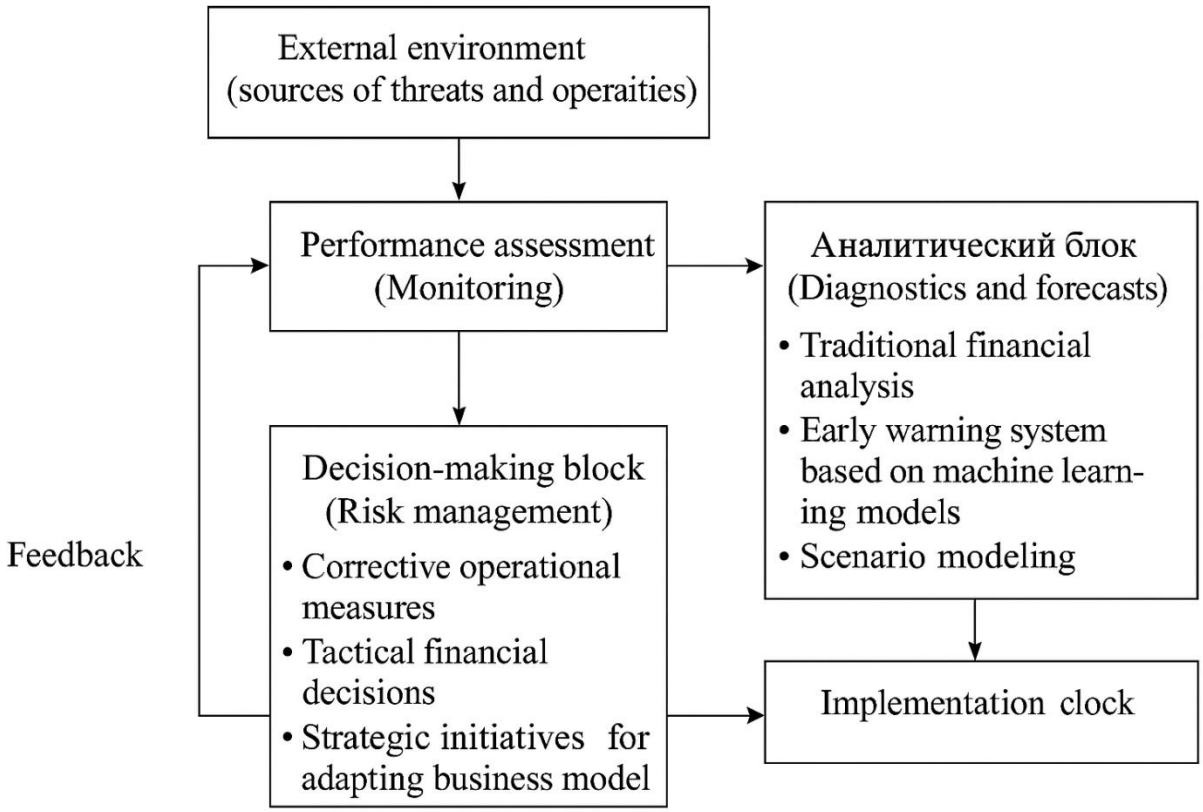

Fig. 1. Conceptual model of an integrated system for assessing the effectiveness and financial security of an enterprise

The conceptual model of the integrated system for assessing efficiency and ensuring enterprise financial security (Fig. 1) represents a cyclical managerial contour in which data on business performance at various levels are used for risk diagnosis, forecasting, and making informed management decisions. The model illustrates the logical interconnection between external influences, internal monitoring processes, analytical tools, and the risk management system, ensuring the continuity of control and the adaptability of strategic management. The initial element of the model is a block characterizing the external and internal environment, which acts as a source of both threats and opportunities for the enterprise. These factors form the input data, determining the need for constant observation of the state of business processes and financial indicators.

At the next stage, the efficiency assessment block (monitoring) functions, including three levels – strategic, tactical, and operational. The monitoring structure allows for the systematic tracking of key indicators, identifying deviations from planned values, and registering signals of potential risks at early stages. This block serves as the informational foundation for subsequent

analytical processing. The collected information is transferred to the analytical block, which combines several methodological approaches: traditional financial analysis, an early warning system based on machine learning algorithms, as well as scenario modeling tools. The comprehensive use of these methods ensures a comprehensive diagnosis of the enterprise's financial condition, the formation of forecasts, and the identification of critical areas requiring managerial intervention. The results of the analytical processing go to the decision-making block, which acts as the core of the financial risk management system. At this stage, corrective operational measures, tactical financial decisions, and strategic initiatives are formed, aimed at adapting the enterprise's business model to changing external conditions and ensuring an increase in its level of financial security. The final element of the model is the feedback mechanism. The implementation of the adopted decisions influences the enterprise's performance indicators, changing the structure of risks and the level of efficiency. The updated data returns to the monitoring block, which closes the cycle and ensures the continuity of financial security management based on up-to-date information. Thus, the presented conceptual model demonstrates a systemic and integrated approach to assessing business efficiency, allowing the transformation of analysis results into managerial actions and ensuring the sustainability of the enterprise in conditions of high dynamism and external environment uncertainty.

Based on the proposed conceptual model, a stage-by-stage algorithm for implementing the integrated system for assessing efficiency and ensuring enterprise financial security has been developed. The algorithm is focused on the sequential transformation of existing processes of control, analytics, and managerial response, taking into account the principles of proactive risk management. The first stage involves conducting an audit and adaptation of the existing system of key performance indicators (KPIs) and control mechanisms. At this stage, the current set of indicators is compared with the three-level system proposed in the research, which allows identifying existing gaps, duplication of indicators, and areas requiring methodological adjustment. The result of the stage is an adapted KPI architecture consistent with the goals of financial security. The second stage includes the implementation of a monitoring system based on the formalization of data collection processes for strategic, tactical, and process indicators. Special attention is paid to indicators that are not traditionally included in standard financial reports but have high diagnostic value in the context of early threat detection – for example, indicators of operational anomalies or deviations in the dynamics of key business processes. At the third stage, the analytical core is configured, which is a set of methods and tools for in-depth diagnosis and forecasting. Within this stage, IT solutions are developed or integrated that allow combining the calculation of classic financial ratios [3] with machine learning algorithms for anomaly detection and predictive modeling [6]. Additionally, the possibility of using secure distributed ledgers (e.g., blockchain technologies) is considered to ensure the auditability of key transactions and increase data transparency [5]. The final stage is the integration of the developed system into corporate governance processes. At this stage, regulations are formed that define the distribution of responsibility for indicator analysis, threshold values are established, upon reaching which early warning mechanisms are activated, and procedures for responding to identified threats are described. Thus, analytical conclusions receive managerial reinforcement, ensuring coherence between monitoring, analysis, and practical actions. The implementation of the proposed approach leads to significant effects for the enterprise's financial security system. The main result is the transition from reactive response to threats to proactive and predictive management practices, which contributes to reducing the gap between operational decisions and their financial consequences. By increasing the accuracy and timeliness of the analysis, the enterprise's adaptability in conditions of high uncertainty is enhanced.

CONCLUSIONS

The conducted research allowed for the formation of a holistic theoretical and methodological approach to assessing business efficiency in the context of ensuring its financial security. Based on the analysis of existing scientific approaches, modern digital tools, and practical needs of enterprises, an integrated model was developed, combining monitoring, diagnosis, forecasting, and risk management into a single closed managerial contour. The model demonstrates the interconnection between strategic, financial, and operational indicators, ensuring a comprehensive assessment of the enterprise's current state and the predictive identification of potential threats. The research results confirm that traditional methods of efficiency assessment, focused primarily on retrospective analysis, do not provide the proper level of financial security in conditions of a dynamic and uncertain external environment. The implementation of a multi-level monitoring system, complemented by tools of machine learning, scenario forecasting, and digital data audit, allows for a significant increase in the quality of diagnosis and the timeliness of managerial decisions. The proposed implementation algorithm demonstrates that the transition from fragmented control to a holistic integrated financial security system is possible provided the sequential adaptation of KPIs, the digitalization of data collection and analysis processes, and the formalization of response regulations. The practical significance of the approach lies in enhancing the enterprise's ability for proactive risk management, reducing the gap between operational processes and their financial consequences, and strengthening the sustainability of the business model. However, limitations have been identified,

related to the necessity of high-quality data, a developed digital infrastructure, and competencies in the field of analytics. These factors require the stage-by-stage implementation of the model, especially for small and medium-sized enterprises, with an emphasis on the most critical indicators and diagnostic tools. Overall, the proposed approach has high universality and can be adapted to different industries and types of enterprises. Its application contributes to increasing the transparency, predictability, and sustainability of the company's financial condition, making the model a significant tool for modern risk-oriented management and ensuring long-term financial security.

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