



## RESEARCH ARTICLE

## Development of System Toolkit for Financial Control in Corporations: Theoretical, Methodological and Practical Aspects

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**ARTICLE INFO****ABSTRACT**

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A system toolkit for financial control in corporations ensures efficient performance. The study aims to develop and implement a systematic approach to corporate financial control, constantly updating its forms, types and methods and considering current requirements. The study involved the application of general scientific and unique methods, i.e., analysis – including coefficient, synthesis, generalization and detailing, inductive and deductive; selective observation, grouping, formalization, analogy, abstract-logical, monographic, analytical, comparative, economic-statistical, extrapolation, systems thinking; Monte Carlo simulation method, methods for constructing structural and logical diagrams, author's software for general MS EXCEL and special EXCEL-VBA. The results include a financial controlling system built and implemented based on fundamental and unique principles. It included managed subsystems (accounting, information subsystems, subsystems of planning, budgeting, financial analysis, tax controlling, GAP analysis, forecasting, financial control, security, risk controlling), managing subsystems and methodological support. The critical areas of digitalization of financial controlling in corporations for the current period are identified - tax controlling, forecasting of digital operations, services, products, and financial technologies allocated in the accounting and information subsystems and subsystems of financial analysis. The future suggested is the development of independent digital subsystems, integrating the performance of the functional purpose of accounting, information subsystems, subsystems of financial analysis, and tax controlling. The authors determined that one of the primary active forms of risk-controlling conduct in crisis is monitoring manageable indicators' values, which determines the criteria for "critical" deviations. The authors suggest integrating operational, strategic, predictive, situational controlling, risk control, and self-controlling subsystems based on implementing a universal model for its conduct based on Monte Carlo simulation; researchers identified the risk factors for financial controlling systems in corporations. The authors implemented the method of financial control based on Monte Carlo. It integrated subsystems, methods, tools, and

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techniques of operational, strategic, predictive and situational controlling, risk controlling, and self-controlling. The toolkit for distributing financial indicators by risk zones and by colour categories according to the "traffic light" principle - "green", "yellow," and "red" zones, in the form of financial tension ratio. Implementing the system toolkit for financial controlling conduct in corporations allows independently developed forms, types, and methods of financial controlling, considering the specifics of a particular business.

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**INTRODUCTION**

The introduction and development of financial control support the efficiency of corporate financial control. Practice shows that developing a methodology that ensures the creation of a comprehensive model for financial controlling is in demand; it should include integration of its operational and strategic forms, types and alternative forms. Methodological inconsistency of different methods for financial control in corporations negatively affects the correctness of financial decision-making. Accordingly, there is an apparent requirement for developing a theoretical and methodological basis for financial controlling in corporations, implying an introduction of a systematic approach to its conduct that would integrate existing and alternative forms, types and methods of its implementation. There is a need to refine a scientifically based toolkit for the development of financial controlling systems in corporations, highlight the principles of its conduct, and determine the impact of digitalization processes on the development of forms and methods for financial controlling in the new economic reality. In this regard, justification of theoretical and methodological provisions for the creation of a complex system for financial control in corporations, in which efficient operation predetermines the implementation of alternative methodological tools, as well as a comprehensive solution of problems in such a system, requires more in-depth study, and that indicates the relevance of the study.

Achievement of the goal of this study involved fulfilment of the following tasks: exploring the content of financial controlling in corporations at the intersection of many areas, reviewing relevant debatable issues in financial theory and practice, identifying elements of financial controlling system based on its mechanism; substantiate and implement a systematic approach to financial controlling in corporations; test a simulation model of financial controlling in corporations based on a unique software product that integrates tools for operational, strategic, predictive, situational and risk control, and self-controlling. The theoretical and methodological basis of the study consists of theories of financial management, financial control, and controlling; the studies of international and Russian scholars – and financial practitioners, as well as periodicals on financial controlling conduct in corporations and their internal regulatory system. The methodological base of this study included logical, complex, situational, and process scientific approaches.

The working hypothesis of the study is based on the authors' position, according to which new economic reality predetermines the need for a system toolkit for financial controlling in corporations that includes methods and tools for financial controlling that are adequate to modern requirements. This implies creating a financial controlling system in corporations that implements an updated process for financial controlling based on Monte Carlo, which allows timely updates of forms, types, and methods of financial control in conditions of new economic challenges and risks.

The study's theoretical significance expands the theoretical and methodological grounds for further research of the issue under consideration, profound scientific ideas on creating financial controlling systems in corporations, and substantiating the areas for their practical implementation in the new economic environment. The study's practical significance lies in developing a methodological and

practical basis to equip corporations with approaches, methods, models, and tools to create their financial controlling systems and help them better understand the process.

The study's novelty lies in substantiating and implementing a systematic approach to financial control in corporations that reflects interconnections and consistency of system-forming elements based on fundamental and unique principles. Those include a control system (assets of management), a managed system (objects: accounting, information systems, tax controlling, planning, budgeting, financial analysis, GAP analysis, forecasting, financial control, risk controlling and financial security) and methodological tools. This approach aims to develop new forms, types, and methods of implementing financial control in corporations and ensure its effectiveness.

## METHOD

### **The study of financial controlling content in corporations at the intersection of multiple areas: debatable issues in financial theory and practice**

The term “financial controlling” is ambiguously interpreted in Russian and international literature concerning the research field. In the English-Russian dictionary, Chernov (1998) connects the term “controlling” to the English “to control”, which means to manage and regulate.

According to Mayer (1993) and Mann & Mayer (2014), financial controlling is a separate course of economics associated with management's financial and economic function to complete operational and strategic tasks.

Aniskin & Pavlova (2005) suggest that financial control is a complex system that includes planning, analysis, and control over deviations between received indicators' values and the planned ones.

Lakhtionova et al. (2022) believe that financial controlling is a regulatory control system that integrates database, financial planning, analysis and internal financial control.

Adams (1995) and Burtsev (2003) correlate financial control with internal control, which synthesizes financial control measures and critical areas of corporate activity to the greatest extent and timely identifies deviations between actual indicators' values from those planned.

Korotkov (2000) identifies corporate financial control as practical management associated with identifying weak signals, eliminating deviations promptly, and ensuring stable strategic development per the plan and goals.

Foster (2017) boldly calls financial control in corporations an automatic stage of financial management that attracts methods, techniques and financial management tools.

Vakhrushina (2014) notes that financial control is compatible with financial control, which limits its content, defining it through various forms and control methods. At the same time, she points out the identity of the functions and trends for control and controlling, explaining that both of the studied financial instruments are found “at the intersection of accounting, information support, control and coordination of entrepreneurial activity”. I.e., economic control is recognized as a separate component of financial control.

Pogodaeva & Kovalenko (2014), researching financial control, named it an integral part of the financial control form and pointed out that more attention must be paid to the bottlenecks. The critical criterion is the deviation of the facts from the plan and the identification of short-term inaccuracies.

Given the preceding, it is clear that Mayer (1993), Mann (2014), Korotkov (2000), and Foster (2017) consider financial control to be a financial management function. In corporate financial control, Korotkov (2000) identifies weak signals, promptly eliminates deviations, and ensures stable strategic development according to the plan and goals.

Aniskin & Pavlova (2005), Lakhtionova et al. (2022) consider financial controlling a system that integrates database, planning, analysis, and control over deviations of actual indicators' values from the planned ones.

"Rusal" Control and Risks, Sedliacikova et al. (2015) vrecognizes the systemic nature of financial controlling, defining its functional purpose in the system of operational and strategic financial management in corporations as follows:

- Information and analytical support of management in the conditions of uncertainty of economic environment.
- A comparative assessment of the actual and expected results in terms of down-to-earth plans, i.e. fact versus plan.
- Timely identification and evaluation of "weak signals" and their causes in the internal and external processes.
- Systematization of information about actual problems, preparation of new plans, acceptance of management decisions to avoid problems in the future; forecasting various financial situations in corporations.
- Provision of measures to adjust corporations to significant changes that minimize probable losses and negative consequences.

Koniukh & Yushchyshyna, (2018) characterizing risk control, calls it an integrated information system that provides analytical and methodological support for risk management. In her opinion, creating a methodological and information-analytical system that integrates elements of planning, accounting, control, and analysis for risk management increases the efficiency of strategic and tactical risk management in corporations. Risk-controlling systems should thoroughly permeate corporations via regular monitoring, which provides for evaluation of risk-controlling systems and set goals achievement.

Manuylenko and Shebzukhova (2021, 2022) believe that financial controlling is a structure of corporate financial management that combines planning, setting goals for corporations, analysis and information management – and, accordingly, provision of management recommendations for competent decision-making. This allows corporations to achieve a higher level of risk management by adjusting their goals in the current and future financial periods. Financial control represents an effective mechanism for equipping compiled information systems with financial analysis, financial planning and internal financial control. In this regard, it is fair to stipulate that, in its essence, financial control is a system for collecting and processing information on how a corporation performs according to the planned goals, and it is aimed at identifying and eliminating negative deviations (Zekos & Zekos, 2021).

Considering the need to assess corporations' financial control at the intersection of information support, accounting, planning, analysis, and financial control, as well as processing actual indicators' values deviations from criteria, optimal, target, and strategic ones, it is necessary to prioritize a comprehensive interpretation of its content, which is achieved in the system of financial control of corporations.

### **Identification of financial controlling system elements in corporations based on its mechanism**

Identification of financial controlling system elements in corporations is determined by its mechanism. Balabanov and Balabanov (2002) study financial mechanism via a system of financial levers and instruments, as well as legal, regulatory and information support that come up in the internal and external environment of enterprises. Similarly, Volkov and Sklyarenko (2014) believe that a financial mechanism integrates five interrelated elements (financial levers and instruments, legal, regulatory and information support).

Balabanov and Balabanov (2002) believe that the mechanism of financial control performs the following functions:

- Managerial (management of financial flows during mobilization of financial resources).
- Organizational (generation of financial resources).

In general, the mechanism of financial controlling is an integral part of the financial mechanism, a set of financial levers and methods applied under the knowledge of complete and reliable information of the market status and dedicated to the implementation of the financial strategy of a corporation.

A set of interrelated elements of the mechanism for financial control in corporations is presented in Table 1.

**Table 1: General characteristics of financial control mechanism elements in corporations**

| Elements                      | Characteristics                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Goal                          | Ensure the efficient performance of the corporation, increase its value, and obtain optimal financial results.                                                                                                                                                                                                                                                                                             |
| Tasks                         | Maintain structural liquidity and liquid reserves. Timely mobilize financial flows and distribute them correctly, following the priorities stipulated in the financial strategy. Develop, coordinate, and implement financial plans. Ensure the corporation's liquidity and profitability by fulfilling all payment obligations promptly. Identify crisis phenomena and develop necessary countermeasures. |
| Functions                     | Functions are distributed among the critical subsystems of financial controlling: planning, analysis, accounting, forecasting, control, monitoring and information support.                                                                                                                                                                                                                                |
| Managing subsystem (subjects) | Officials (authorized representatives), employees of specialized divisions.                                                                                                                                                                                                                                                                                                                                |
| Managed subsystem (objects)   | Finances, cash flows and capital structure of corporations                                                                                                                                                                                                                                                                                                                                                 |
| Provisions:                   |                                                                                                                                                                                                                                                                                                                                                                                                            |
| Legal regulatory              | Legislation (civil, financial and taxes), business plans, budgets, etc.                                                                                                                                                                                                                                                                                                                                    |
| Information                   | Necessary database for financial activities                                                                                                                                                                                                                                                                                                                                                                |
| Methodology                   | Development of methods for timely provision of information about financial terms of all structural units of corporations. Methodological tools for assessing financial indicators in corporations.                                                                                                                                                                                                         |
| Management regulations        | Procedures for financial decision-making in the areas of financial control in corporations.                                                                                                                                                                                                                                                                                                                |

Source: created by the authors – Manuylenko & Shebzukhova (2022) – based on the research results

Hence, financial control is a new element of the corporate financial management system and a link in the overall controlling system. An approach to financial management based on financial control is an alternative to evaluating the results of meeting corporations' financial goals.

## RESULTS

### In the methodological block of the research

A systematic approach to financial controlling conduct in corporations is substantiated; it reflects interconnection and dependability of system-forming elements based on fundamental and extraordinary principles that include: managing system (management subjects), a managed system (objects: accounting, information systems, tax controlling, planning, budgeting, financial analysis, GAP analysis, forecasting, financial control, risk controlling and financial security) and

methodological tools. This approach aims to develop new forms, types and methods of financial controlling conduct in corporations and provisions for its efficiency.

Financial controlling systems of corporations integrate two subsystems: managed (object) and managing (subject) (Figure 1). The system's goal is articulated, and local (intra-system) tasks are related to it and rationally interconnected. The goal is posted in the internal regulatory framework and is specified within the limits and standards; assessment of the task implementation is possible via the appropriate indicators. The duration of the system is constant. The object of financial management is implementing operational and strategic management decisions in priority areas of corporate financial activity. Financial control is a complex set of accounting processes, including taxes, informing, planning, budgeting, financial analysis in various modifications, forecasting, financial control, risk management and financing integrated into a single process, ensuring the functioning of the relevant subsystems. Accordingly, the managed financial subsystem coordinates the links between accounting and information subsystems, subsystems for planning, budgeting, financial analysis, tax controlling, GAP analysis, forecasting, financial control, risk controlling and financial security. The accounting subsystem processes monthly management reporting, which creates the basis for planning and management decision-making and functions along with the information subsystem. Financial control information comprises operational, managerial, control and analytics generated in the relevant reports. Given new challenges, the interconnection between accounting, information subsystems and the financial analysis subsystem should reflect digitalization processes, a prerequisite for the upgrade of which is implementing electronic business through computer technologies and goods and services via the Internet (electronic commerce). Implementing digital financial technologies involves integrating them into corporations' strategies, completely replacing traditional document flow with electronic one, which improves the accumulation of necessary data. Digital transformation of corporations contributes to the achievement of the strategic goal, i.e. making a profit and enhancing performance (Manuylenko & Shebzukhova, 2022).

In the accounting and information subsystems – depending on the functional purpose – the following groups of financial digital technologies can be distinguished: 1) input data - IT; 2) data processing - Big Data, business analytics, artificial intelligence, machine learning, blockchain, etc.; 3) output data - artificial intelligence, machine learning, etc. (Manuylenko & Shebzukhova, 2022). IT technologies focus on transforming business processes, which significantly improves operational efficiency (Manuylenko & Shebzukhova, 2022; Fatima et al., 2023). Blockchain technologies improve corporations' financial transactions and transactions with tangible and intangible assets, changing management systems by monitoring and fixing internal and external transactions. Information created in the blockchain is approved by both parties of the transaction and protected from subsequent changes; the technology is used to track the cost of acquiring or selling assets, forming a more transparent and solid foundation for monitoring. Hence, Zachariadis et al. (2019) developed elements of digital controlling, offer management and control in distributed registries, considering the problems revealed in blockchain technologies in financial services.

Optimal combination of traditional data and big data processing technologies (Big Data) (i.e. information asset that meets the following requirements: accumulation of information for regular monitoring, additional verification and characterization of information) affects the quality of managerial and financial decisions. Big Data and artificial intelligence technologies implementation make it possible to forecast sales volume changes in supply and demand, manage pricing based on all dependencies, not just multiplicative ones, consider multiple risk factors, and automatically assess financial risks, which allows making decisions about time and sales geography and timely directing products flow to more profitable markets. Financial risk modelling is performed in real-time with the proposal of target strategies (Eremina & Rodionov 2023).

Computer learning is an integral part of artificial intelligence; it provides for comprehensive analysis of data about potential counterparties, rational application of financial resources, minimizes financial risks by taking into account human behavioural factors, and increases financial stability of corporations in the market and their efficiency (Rodionov et al., 2023). Computer learning algorithms make it possible to check the normative values of financial indicators against actual ones, study the majority of transactions, and promptly react to all possible situations, taking into account the identified trends in the exact values of the indicators. Artificial intelligence interacting with big data and blockchain provides a high level of financial data security, according to Kashevarova and Panova (2020), creating effective management of large databases. Big Data is based on business analytics, which includes descriptive, diagnostic, predictive, and prescriptive data. Applying Big Data, statistical and simulation methods, intellectual analysis, and game theory of descriptive analytics tools, it is possible to assess the situation by diagnostic analytics - explain the reasons for the problem, those of prescriptive analytics - ways to get the best result, and by those of predictive analytics - predict the current and future behaviour of objects. The quality of advanced analytics affects the ability to integrate the broadest possible data set. With the help of cloud technologies, financial managers of corporations can analyze and forecast financial status, assess the probability of bankruptcy, costs and deviations, develop and control budgets for future periods and manage financial risks (Rodionov et al., 2023; Poquiz et al., 2023), i.e. to a certain extent; digitalization processes affect subsystems of financial analysis, GAP analysis, forecasting, financial control, risk controlling of the financial controlling system incorporations. In the future, it is advisable to develop a form of financial control in corporations - remote monitoring, which ensures proactive cooperation between the subjects of financial control based on digital technologies.

In the medium term, Business Intelligence (BI) tools should include ready-made analysis cubes or data storage for accounting, information, and financial analysis subsystems. Davydov et al. (2020) note that in the service model of SaaS cloud services, corporations acquire ready-made software with a cloud service that includes an accounting or HR automation system, subsequent upgrade and maintenance of the software is within the responsibilities of the service provider. At the same time, the functions of cloud services can expand and include information security, financial risk management, etc. Cloud services can integrate knowledge from different platforms into the cloud and provide robots with collective knowledge to participate in information and data processing. Large Russian corporations can allow independent structural units of financial control to generate reports from the software solutions by individual divisions of corporations and by determining costs or data storage. Developing such processes is challenging for joint-stock, limited liability, and regional companies. In this situation, Sedliacikova et al. (2015) consider financial control in small and medium-sized enterprises in Slovakia and offer the framework model.

Digitalization processes also affect the tax-controlling subsystem, which ensures the collection, processing and analysis of information on tax flows in corporations; it is closely linked with the accounting and information subsystems and financial analysis subsystem. Using tax control, corporations legally optimize the composition and amount of taxes, manage tax revenues and expenses, avoid tax violations, and prevent tax fraud.

Requirements for the digitalization of tax control processes at the national level are the following:

- Electronic document workflow - electronic input of data on taxpayers into declaration forms;
- Electronic tax bookkeeping - timely electronic exchange of accounting information with the tax body;
- electronic comparison and approval of data - electronic conversion of data for evaluation and prioritization, ensuring the possibility for the federal tax service and its territorial bodies to check and correlate information about taxpayers and types of taxes in real-time mode;

- Electronic audit - verification of accurate tax data with reports sent to corporations, results of which are presented to the taxpayers
- Full-fledged electronic assessment—this is a direct control and evaluation method the tax authority uses to verify corporations' tax data without considering the existing reports.

New challenges that integrate digitalization processes, as well as pandemic and geopolitical uncertainty, entailed remote forms of tax control. This form of tax controlling focuses on planning, budgeting, and coordinating tax plans and budget implementation. Tax control in a digital format is associated with the development of new information and digital technologies that transform the work of the tax service and bring it to a new level. In the context of pandemic uncertainty, the need for tax controlling is due to the reduction of costs for tax administration due to remote and automated operations, business transition to a network format and into the Internet environment that expanded its geography (Gorshkova et al., 202). Tax authorities monitor business activities online via the goods and services sales chains. There are the following pros for an online form of tax controlling: a transparent environment for conducting operations and business processes; automatic, impersonal nature of taxation; no paper files in processes, bringing the business sector out from the shadow environment, which serves an increase of tax collection. The remote tax control process demands promptly identifying risks, analyzing and evaluating tax situations, and developing appropriate measures to minimize the impact of various factors on the state and business entities, ultimately determining the management of tax risks. Digitalization of tax processing brings up new tax products, services, and operations and a healthy tax environment for investments into digital technologies, which supports an automated tax control subsystem.

Kotarba (2018) identifies the following prerogatives for digital technologies in financial control: forecasting—to prevent fraud in the preliminary control process; increasing transparency; and minimizing the risk of errors in prosecution for violations in the financial sector, using blockchain technology, which ensures the immutability of transaction data.

Table 2 presents the main areas of digitalization of financial control in corporations.

**Table 2: Basic areas of digitalization of financial control in corporations**

| Subsystems         | Digital operations, services and products                                                                                                 | Financial technologies                                                                                                                            |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Bookkeeping        | Online bookkeeping                                                                                                                        | Blockchains, cloud technologies                                                                                                                   |
|                    | Online reporting                                                                                                                          | SaaS                                                                                                                                              |
| Informational      | Information security                                                                                                                      | Blockchain, artificial intelligence, computer learning, descriptive, diagnostic, prescriptive, and predictive analytics                           |
| Financial analysis | Assessment for probable bankruptcy, costs, analysis of Finance and data on potential counterparties, business analytics in digital format | Descriptive, diagnostic, prescriptive and predictive analytics, artificial intelligence, computer learning, cloud technologies, SaaS              |
| Tax controlling    | Management tax accounting, online tax reporting                                                                                           | Blockchain, artificial intelligence, computer learning                                                                                            |
| GAP-analysis       | Assessment of deviations in digital format                                                                                                | Blockchain, Big Data, descriptive, diagnostic, prescriptive, predictive analytics, artificial intelligence, computer learning, cloud technologies |



|                      |                                                                         |                                                                                                                                                      |
|----------------------|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Forecasting          | Strategic forecasting solutions                                         | Artificial intelligence, computer learning, Big Data, predictive analytics, cloud technologies                                                       |
| Financial control    | Development and control of budgets for future periods in digital format | Blockchain, Big Data, descriptive, diagnostic, prescriptive and predictive analytics, artificial intelligence, computer learning, cloud technologies |
| Risk-controlling     | assessment and management of financial risks in digital format          | Blockchain, Big Data, descriptive, diagnostic, prescriptive and predictive analytics, artificial intelligence, computer learning, cloud technologies |
| Financial provisions | Funding and asset management in digital format                          | Blockchain, Big Data, descriptive, diagnostic, prescriptive and predictive analytics, artificial intelligence, computer learning, cloud technologies |

Source: created by the authors – Manuylenko & Shebzukhova (2022) – based on the research results: (Valerievich 2021; “Deloit” Research centre, CIS, 2018; Manuylenko & Shebzukhova, 2021)

Therefore, the digital economy environment demands that corporations apply digital technologies in Finance to support their response to changes and adjust the process of making operational and strategic decisions.

Underlining the importance of digitalization in corporations' financial control systems, it is possible to assume that in the long term, digital subsystems can gain certain independence, integrating functions of accounting, information subsystems, financial analysis subsystems, and tax control.

As noted by Manuylenko and Shebzukhova (2022), introducing corporate digital economy drivers is accompanied by significant risks associated with developing information technology subsystems based on virtualization and cyber security risks. Errors and failures in information subsystems cause operational risk.

Functions of the corporate risk controlling subsystem represent the following: 1) accumulation of information on identified risks and risk situations; 2) timely identification of risk factors, their classification, and allocation of significant risks; 3) tracking and reporting on risk events; 4) drawing up a risk map; 5) assessment of significant risks; 6) drawing up and implementing a risk management plan, 7) monitoring risk minimization measures. Thus, the efficiency of risk strategies in corporations is assessed. Risk-controlling subsystems in corporations contribute to the development of an appropriate risk culture.

Timely detection of risks serves the development of a map for significant risks in corporations and determines risk tolerance. A business plan is a source for identifying additional risks that are not crucial for the strategic goals of corporations. It also determines the signal values of risk tolerance ("yellow" zone). Correction of the signal values with numbers calculated based on the metric volatility determines the growing risk limit (red zone). Various types of financial controlling of corporations are conducted using the toolkit, implying the distribution of financial indicators by risk zones ("green", "red", "and yellow"). Risk tolerance violations mean exceeding acceptable risks, which should be regularly discussed at the corporate management level.

One of the primary forms of risk controlling is monitoring indicators' controlled values, including accumulation, processing, control and analysis of identified deviations, and interpretation of the causes – the results determine its effectiveness. Changing the goal and the tasks of financial controlling and indicators for current plans and budgets entails adjusting monitoring areas. In the financial risk management system, which determines functional risk controlling in the risk management cycle, the monitoring and controlling of the level of risks are reviewed together. The optimal operational and strategic monitoring combination allows for identifying deviations early and working on adjustments promptly. In risk controlling, deviations can be profitable, causing profit growth, and unprofitable, causing losses. Risk controlling primarily treats potential threats; financial risk is determined by unplanned losses of corporations that potentially affect their financial obligations. Risk control means serving risk minimization but reducing harmful effects that cannot prevent their occurrence.

Comprehensive multi-level risk control, duty distribution, and conflict of interest avoidance are provided based on "3rd and 4th level protection" (Table 3).

**Table 3: Comprehensive multi-level risk control based on the concepts of "3rd and 4th level protection"**

| <b>Level of protection</b> | <b>Characteristics</b>                                | <b>Structural units of control</b>   | <b>Functions of structural units</b>                                                                                                                                                                                                                                                                                                                                   |
|----------------------------|-------------------------------------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1-st                       | Compliance with the restrictions set by the 2nd level | Business units                       | Identification, initial assessment, and control of compliance with identified restrictions, as well as monitoring and assessment of control procedure compliance with the required order.                                                                                                                                                                              |
| 2-nd                       | Independent control over certain restrictions         | Structural units for risk management | Introduction of restrictions, independent assessment of risk levels, assessment of their integrated value, forecasting, testing and validation of models, monitoring the consequences of decisions to take specific risks by the established level of risk, and effectiveness of risk minimization within business areas and the corporation during a specific period. |
| 3-rd                       | Internal audit                                        | Internal audit service               | Assessment of risk management system for compliance with internal and external standards, bringing existing drawbacks to management's attention, monitoring their elimination, and monitoring independent assessment of the effectiveness of internal processes, methods, and risk management procedures over a certain period.                                        |
| 4-th                       | External audit                                        | External audit service               | Independent verification of financial information and accepted risks provided by corporations that are financial market participants to their owners and other interested parties, i.e. stakeholders.                                                                                                                                                                  |

Source: created by the authors – Manuylenko & Shebzukhova (2022) – based on the research results (BCBS, 2010, Principle 6, para. 69; COSO, 2011, Principle 6, para. 65)

For large corporations, as per the classification of the "Spark" information base (PJSC "Second Generating Company of the Wholesale Electricity Market"), the concept of "4-level protection" may represent an area of interest. In comparison, small corporations may be interested in "3-level protection". In the concept of "3-level protection", monitoring is an integral part of each level of protection according to the fourth principle, described in Principle 6 par. 69" BCBS, 2010, Principle 6, para. 69), and the principle described in par. 65 "Internal control – Integrated framework" (COSO, 2011, Principle 6, para. 65).

OECD corporate governance principles are focused on the importance of internal control, increasing the number of independent directors and auditors whose activities should be closely interconnected (G20/OECD, 2023). Paris OECD (2004) hence, in public joint-stock companies, a significant role in the risk-controlling process is assigned to the Board of Directors, which approves its procedures. In contrast, in corporations of other legal management forms, that is assigned to the executive bodies.

As financial practice shows, most Russian corporations merge risk control and internal financial control functions, which require appropriate policies to regulate internal financial control in corporations.

Anti-corruption compliance control can be implemented in corporations' risk-control subsystems. Berger-Walliser & Shrivastava (2014) define compliance as an integral element of internal control in corporations to monitor the implementation of the provisions established by law by employees. Its primary function is to ensure compliance with legislation, standards, norms, rules, job descriptions, legitimacy, and values inherent in corporations, thus protecting the business reputation of corporations.

Compliance programs are closely linked to the anti-corruption process. Accordingly, anti-corruption compliance aims to identify compliance with legislative and regulatory requirements, the requirements of alternative practices, and the introduction of the necessary measures and controls to ensure combating fraud and corruption. The lack of ineffective compliance control causes compliance risks (reputational, legal and operational) and financial or other losses. Each corporation's persons in the financial controlling system are identified to monitor and evaluate relevant risks. Artificial intelligence, computer learning, and blockchain are employed to counter fraud.

In the unfavorable phases of the economic cycle, risk control should apply a range of anti-crisis tools, including early warning, monitoring the implementation of measures under an anti-crisis plan, liquidity planning, advisory, and methodological support for financial and economic measures aimed at preventing and overcoming financial crises in corporations.

Such form of risk controlling as monitoring in conditions of financial instability is implemented in the following areas: ensuring and maintaining viability of the early warning and response process; timely identification of the causes and symptoms of the financial crisis; monitoring of financial condition and default risks; planning, monitoring implementation of anti-crisis measures, as well as restructuring projects for corporations; forecast assessment of both some rehabilitation measures and anti-crisis concept in general; assessment of the reasons for possible deviations of rehabilitation plan indicators, including in the temporal aspect.

The current situation and changes in the external environment, including the impact of risks, justify the creation of a planning subsystem within which specific percentages of the margin are deducted from the profit for certain expenses along with cash reserves. Budgeting subsystems serve to create various kinds of budgets. The financial analysis subsystem is where financial indicators are analyzed, and actor analysis is carried out. The links between the subsystems for budgeting, planning, and financial analysis are revealed when determining the amount and composition of costs, as well as

regular planning and financial analysis. Close interconnection of planning and risk controlling subsystems reduces the risks related to financial decisions and increases their effectiveness.

Analysis of the future reflects predictive (signal) control. Its essential task is to identify deviations and develop preventive and corrective measures. As such, a subsystem for forecasting financial control emerges; its exclusiveness is in the alternative proposal of financial indicators and characteristics that establish the multiple variants of financial development of the control object, taking into account existing trends. The forecasting subsystem should include the appropriate tools.

Practice reveals that deviations are given special attention in each controlling software (ARIS Process Performance Manager; "BEST-5. Controlling", system "1C: Production Enterprise Management 8"). The importance of dealing with them in the financial control system confirms the need to identify independent subsystems for financial control and GAP analysis.

In the financial control subsystem, the actual values of indicators are compared with those of the planned/criteria. In corporations, to control critical financial indicators (general solvency, capitalization, financial tension, the level of long-term fundraising), scorecards can be compiled to observe the scale of deviations of the achieved results against the expected ones. I.e., a plan-fact analysis is carried out using the scorecards. Internal auditors and controllers monitor compliance with the regulatory framework at the macro, meso, and micro levels, correct development and application of methodological tools, and provide consultancy to the involved structural units. Internal control and audit are linked so that internal control forms a block of verification, and internal audits constantly and independently study internal control. Internal control, according to Chinese specialists Li et al. (2020), moderately affects the connection between financial crisis and profit management, limiting management, both on the accrual basis and on the regulation of actual profit, especially in financially disadvantaged companies. Low or unsatisfactory quality of internal control in specific business segments causes operational risk.

GAP analysis examines the gaps, identifying ways to achieve the goal and solve problems. In this subsystem, deviations of the actual results of controlled indicators from the established standards are calculated in absolute and relative terms. Carrying out such a gradation in corporations requires the definition of the criterion of "critical" deviations, differentiated by control periods with identification of their causes and using particular sections of the control reports. Significant reasons for deviations in controlled indicators from the established standards are identified at the overall corporation level and by particular financial responsibility centres (FRCs). Financial indicators with critical deviations from targets, current plans and budgets are calculated and controlled. Responses of corporate financial managers to eliminate deviations may be as follows:

- 1) Lack of action - value of negative deviations is significantly lower than the "critical" criterion;
- 2) elimination of deviations - the process of searching for or selling reserves in various areas of financial activity to achieve indicators (target, planned or criteria); at the same time, review of possibilities for the expedient introduction of the improved order of savings within the principle of "cutting off the excess" applying a list of financial reserves, etc.;
- 3) Changing the list of planned or standard indicators except for the limited possibility of streamlining certain areas of financial activity; adjustments of indicators are allowed—target strategic, current financial plans or particular budgets; as a result, specific production, investment, and financial operations and operations of specific business centres for costs and investments are shut down.

FRCs emerge according to their functional component to optimize management processes at each level; hierarchy variability and composition of their performance indicators determine the feasibility of introducing target parameters for FRC management characterized by target informative

management indicators. It is essential to bring up significant deviations that urge management decisions and change indicators. That alarms on changes via deviations in parameter values identifying the cause-and-effect of qualitative and quantitative parameters. Finally, the work is carried out to eliminate deviations, which returns the system to an equilibrium state. Implementing the systemic principle of complexity implies a continuous escalation of deviations at all levels of management.

In most cases, corporations with insufficient funding sources should fully implement the financing strategy, which involves allocating financial support to the subsystem. Its functioning ensures financial stability, liquidity, solvency, and profitability for corporations in each phase of the economic cycle.

The subjects of management have to concentrate control over the objects of management, making operational and strategic financial decisions. Their essential task is to create a rational structural unit and subordination in the corporation's architecture, ensuring timely and high-quality data exchange between its structural divisions and consolidating and establishing a financial structure with the allocation of FRC. The solution of this task determines the independence of such a structural unit that conducts control, ensures its documentation support (operational regulations, job descriptions) and builds interaction with other structural units.

Financial control service unites internal auditors and audit commissions, the creation of which is influenced by the organizational and legal forms of management. Functions of entities conducting financial control should be merged and not crosslinked with risk control and tax control functions, excluding conflicts of interest and rationalizing their work.

The development of financial controlling requires a methodological toolkit that includes approaches, methods, and techniques for managing specific units that obtain reliable information for making operational and strategic financial decisions, forming a subsystem of methodological support for financial controlling. The synthesis of methods for operational and strategic financial controlling, or its other forms and types, ensures the efficiency of all structural divisions in corporations, eliminating specific problems and shortcomings. Considering the systemic principle of efficiency, the methodological tools of financial control immediately provide processed data on the financial state and prospects of all structural units in corporations.

The primary functional purpose of methodological support subsystem for financial control in corporations:

- Prioritization of controlled financial indicators that determine quantitative norms for each of them
- Regular monitoring of financial performance indicators along with calculation of deviations of actual results from the expected ones and comments on their causes;
- Allocation of significant actual reporting indicators for each type of financial controlling;
- input of integrated indicators that demonstrate accurate results on how the expected quantitative standards of control are ensured, taking into account the list of financial indicators, where that forms commensurability of the quantitative expression of specific standards and controlled analytical indicators;
- Determination of composition and indicators for control reports of executors to identify carriers of control information
- Determine deadlines for each type of financial controlling and the list of controlled indicators.

Each of the subsystems for financial control (risk control, tax control, financial control, etc.) must approve the proposed methodological toolkit, excluding its duplication.

The foundation of a corporate financial controlling system includes methodological principles, i.e. the initial rules for its efficiency and livability. The principles are systematized into primary and special groups and provided in Table 4. Basic principles characterize the properties of the system, and special ones characterize the process of conducting financial control in corporations. Each introduction of principles should be aimed at developing new forms, types, and methods of implementing financial control in the relevant system, making it more proactive.

**Table 4: Groups of principles for building financial controlling systems in corporations**

| <b>BASIC</b>                                                                                                                                                     | <b>SPECIAL</b>                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1                                                                                                                                                                | 2                                                                                                                                                                                            |
| Comprehensiveness - integration of to-date upgraded managed and managing subsystems, as well as forms and methods for financial controlling conduct              | Records on the achievement of the goals and objectives of corporations at each level of management, including obtaining information and evaluating and verifying vital financial indicators. |
| Integrity - complete subsystems of object and subject management.                                                                                                | Legal security and validity of the applied forms, types and methods of financial controlling conduct.                                                                                        |
| Decomposition - division of the system into parts down to the unbreakable level                                                                                  | Formalization of functional areas, processes and functions of financial controlling.                                                                                                         |
| Dialecticism - dialectical interconnection of management subjects.                                                                                               | Periodicity of timely detection of indicators' value deviations, forecast and identification of the corresponding causes.                                                                    |
| Scientific nature - the concept of the financial controlling system; its key provisions are based on a deep knowledge of the objective economic laws' mechanism. | Permanence – steady conduct of financial control.                                                                                                                                            |
| Dynamism is feedback within a system in a constantly changing internal and external corporative environment.                                                     | Purposefulness - carrying out financial control, considering the goal and subordinate tasks.                                                                                                 |
| Development - recognition of continuous change and transformation of all natural phenomena, their transformation in terms of forms and levels                    | Balanced activities of the management bodies that conduct financial control ensure the unity of the objects and subjects of financial management at different levels.                        |
| Adaptability - prompt adjustment of financial priority areas without the additional attraction of specialists.                                                   | Consistency of corporate financial strategy types (funding, risk, investment, corporate business plans, programs, etc.)                                                                      |
| Determinism - identification of causal links of all factual situations.                                                                                          | Optimization of costs for assets and labour, provision of financial resources for financial controlling.                                                                                     |
| Coordination - balancing around financial strategy in corporate financial management system.                                                                     | Reactivity - response to past events and facts, taking into account precedent trends.                                                                                                        |
| Independence is the autonomy of control over established restrictions, financial information, assessment results, and the subjects of financial control.         | Efficiency - instant response to changes in the deviations of the indicator's values in the system.                                                                                          |

|                                                                                                                                                             |                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reliability - integrating all data from the corporate database and information on the applied technologies for financial controlling conduct.               | Automation of management and financial reporting processes, integration of data from remote systems.                                                                                                                              |
| Relevance: timely research of priority areas of corporations' financial activities using tools adequate to the purpose and objectives of financial control. | Digitization of financial controlling processes.                                                                                                                                                                                  |
| Efficiency - a benchmark for a positive result, depending on the effectiveness of each of the subsystems.                                                   | Risk orientation - taking into account risks in implementing the forms and methods of financial control.                                                                                                                          |
|                                                                                                                                                             | Applying the best world practices in financial control places it on a new level of development worldwide.                                                                                                                         |
|                                                                                                                                                             | Conceptuality in different phases of the economic cycle—anti-crisis measures are considered in the unfavourable phases of the economic cycle.                                                                                     |
|                                                                                                                                                             | Continuous improvement and creation of new competencies by the bodies conducting financial controlling and observance of financial culture.                                                                                       |
|                                                                                                                                                             | Transparency - availability of information and its regular exchange contributes to reducing gaps.                                                                                                                                 |
|                                                                                                                                                             | Information security - full admission of financial controlling bodies to the information base, provided it is regularly updated; operation of financial controlling subjects within the boundaries of a mutual information space. |
|                                                                                                                                                             | Clarity - justified process and results of financial controlling.                                                                                                                                                                 |

Source: created by the authors – Manuylenko & Shebzukhova (2022)

Therefore, a system of corporate financial control is built; it aims to determine practical provisions for its implementation. A systematic approach to corporate financial control defines the goal, objectives, components, methodological tools, and principles for its implementation.

### **In the practical and applicative block of the research**

Implementing the system principles of complexity, scientific character, development, independence, reliability, effectiveness, periodicity, purposefulness, consistency of types of financial strategy of corporations, efficiency, risk orientation and transparency simultaneously in the subsystems of forecasting, planning, financial analysis, GAP-analysis, financial control, risk controlling and financial security leading indicators are determined for operational, strategic, predictive financial controlling, risk controlling and self-controlling in corporations based on notable author's software Excel-VBA (Manuylenko & Shebzukhova 2022).

The research subject is PJSC, "Second Generating Company of the Wholesale Electricity Market," which produces and distributes electricity, gas, and water (Official site of PJSC "Second Generation Company of the Wholesale Electricity Market") (Table 5).

Strategic values of financial tension indicators are calculated using the author's software Excel-VBA, "Software for determining main indicators for operational, strategic, predictive financial controlling,

risk controlling and self-controlling in corporations" (Manuylenko & Shebzukhova, 2022). The simulation process produces a range of scenarios for altering obligations and forecasted values of financial tension. According to the simulation results in the researched corporations, the "green" zone of financial tension values range is 0,491–0,492 units.

**Table 5: Determination of leading indicators for conducting operational, strategic, predictive financial controlling, risk controlling and self-controlling in PJSC "Second Generation Company of the Wholesale Electricity Market" based using the particular author's software Excel-VBA**

| YY                        | Indicators                     |           |                             |             |                            |           |                 |             |
|---------------------------|--------------------------------|-----------|-----------------------------|-------------|----------------------------|-----------|-----------------|-------------|
|                           | Absolute                       |           |                             |             | Relative                   |           |                 |             |
|                           | Liabilities in thousand rubles |           | Deviations                  |             | Financial strains in units |           | Deviations      |             |
|                           | fact                           | strategic | Absolute in thousand rubles | relative, % | fact                       | strategic | Absolute, units | relative, % |
| 2012                      | 57028589                       | 67246421  | +10217832                   | +18,0       | 0,417                      | 0,492     | + 0,075         | +18,0       |
| 2013                      | 47545300                       | 76102822  | +28557522                   | + 60,3      | 0,307                      | 0,492     | + 0,185         | + 60,3      |
| 2014                      | 64566185                       | 85132405  | + 20566220                  | +32,0       | 0,372                      | 0,491     | + 0,119         | + 32,0      |
| 2015                      | 84111951                       | 96068909  | + 11956958                  | +14,2       | 0,431                      | 0,492     | + 0,061         | + 14,2      |
| 2016                      | 87387906                       | 99198538  | +11810632                   | +13,6       | 0,433                      | 0,492     | + 0,059         | + 13,6      |
| 2017                      | 79838611                       | 98393917  | + 18555306                  | +23,3       | 0,399                      | 0,492     | +0,093          | +23,3       |
| 2018                      | 72839699                       | 100106808 | + 27267109                  | +37,5       | 0,357                      | 0,491     | + 0,134         | + 37,5      |
| 2019                      | 75757404                       | 106852038 | +31094634                   | +41,1       | 0,348                      | 0,491     | + 0,143         | + 41,1      |
| 2020                      | 81371529                       | 112921422 | +31549893                   | +38,6       | 0,355                      | 0,492     | +0,137          | +38,6       |
| 2021 <sub>stra teg.</sub> |                                | 118175227 |                             |             |                            | 0,492     |                 |             |
| 2022 <sub>stra teg.</sub> |                                | 122653843 |                             |             |                            | 0,491     |                 |             |
| 2023 <sub>stra teg.</sub> |                                | 126943674 |                             |             |                            | 0,491     |                 |             |

Source: created by the authors – Manuylenko & Shebzukhova (2022)

Based on the allocation frontier of financial tension indicator in PJSC, "Second Generating Company of the Wholesale Electricity Market" shows that the commitments shortage was 13.6–60.3% in the retrospective period.

The functional purposes of the specific subsystems of corporate financial controlling are as follows:

- **Risk controlling, GAP analysis** – distribution of financial indicators by risk areas. It is believed that with a relative deviation from the optimal limit of the indicator values for financial tension, liabilities of 10% lay in the "yellow" risk zone, whereas those that are more than 10% lay in the "red" zone – i.e., all the researched corporations – according to the values of the indicated indicators – are positioned in the "red" zone;
- **Risk controlling, planning, forecasting and strategic controlling** – provided that the model is based on the Monte Carlo stochastic modelling method, the phases of the economic cycle determine the values of indicators depending on the interval nature of their optimal boundaries; it carries out scenario modelling and stress testing changing values of the relevant indicators in the process of making operational and strategic decisions, selecting the better alternative;
- **Risk controlling, forecasting and strategic controlling** - assessment of the potential strategic level of financial risk that determines its deviations from the current values and secure values of liabilities (current and strategic), develops risk controlling tools and provides the system with a risk-oriented focus;



- **Forecasting, planning, information, risk controlling and GAP analysis** - determination and achievement of targets in the forecasting subsystem interconnected with planning, information, risk controlling and GAP analysis subsystems.

## DISCUSSIONS

Østergren & Stensaker (2011) the head of the Financial planning and analysis Department at ABBYY Company, challenges corporations with the timely development of the "Financial Controlling" project, which can be a framework for the further creation of a concept and own financial controlling adjusted to the corporations' needs that ultimately promotes managerial effect. In general, the concept of the corporate financial controlling system should be based on the following:

- Creation of an independent national model, taking into account the specifics of development areas.
- Synthesis of integrated and scientific-practical approaches to its implementation, ensuring the comprehensiveness of the model.
- Essential nature of financial controlling based on a systematic approach that defines its position in the system.
- Regulatory nature, including interacting, interconnected managed and control subsystems.
- Functioning in conditions of uncertainty, which determines the random nature of deviations in the values of financial indicators that describe it.
- Taking into account features, areas, and trends revealing it at the meso- and microlevels.

The authors believe that the key theoretical and practical provisions are guidelines in the process of creation and operation of financial controlling systems in corporations:

- Close links with financial management reveal that certain structural elements of the financial controlling system are developed under its functional purpose.
- It's implementation in the system of operational and strategic financial management involves the interaction of its operational and strategic types, fulfilment of operational and strategic tasks, setting impact of current decisions on the implementation of strategic goals.
- Track keeping, development of its standard and alternative types.
- Complex nature of financial management decisions made in it.
- Feedback within the system, which allows for determining and controlling its operational results.
- Its gradual digitization is achieved by transforming corporate business processes into electronic formats.

The concept of a financial controlling system and its key provisions are based on a deep knowledge of the objective economic laws' mechanisms: consistency and compulsory diversity. Based on the law of consistency, all processes are considered internally connected components within an integral system; the complexity principle is in action. The variety of perturbations that affect the complex system of financial controlling causes various situations, though adequate for them. According to the law of necessary diversity, achieving efficiency in a system requires constant updates of corporations' forms, types, and methods of financial controlling conduct.

Each corporation can build its system of financial control based on its organizational and legal form of management, type of business, and financial strategy features.

## CONCLUSIONS

1. In the process of forming theoretical and methodological aspects of financial controlling systems in corporations.

2. The components of its concept are identified that provide for the creation of an independent national model that includes development specifics, synthesis of integrated scientific and practical approaches to its conduct, essential nature of financial controlling based on a systematic approach, regulatory nature of interacting and interconnected managed and managing subsystems; random nature of deviations in financial indicators' values that characterize it under conditions of uncertainty; taking into account the features, areas and trends of its behaviour at the meso- and micro levels.
3. The critical theoretical and practical provisions are established - guidelines for its creation and operation that imply close links with financial management; financial controlling conduct in the system of operational and strategic financial management; accounting and development of its standard and alternative forms and types; complex nature of financial management decisions; feedback within the system that allows determining its operational controlling results; its gradual digitization via transformation of business processes in corporations into an electronic format.
4. It is determined that its concept and critical provisions are grounded in deep knowledge of objective system economic laws and their mechanisms and necessary diversity.
5. Subsystems are identified - managed (object) that coordinates the links of accounting and information subsystems, subsystems for planning, budgeting, financial analysis, tax controlling, GAP analysis, forecasting, financial control, risk controlling and financial security, and managing (subject) including methodological block in the system of financial controlling in corporations
6. The main areas of financial controlling digitalization in corporations in the accounting and information subsystems, subsystems of financial analysis, tax controlling and forecasting are presented along with the designation of digital operations, services, products and financial technologies in each of them.
7. It is stipulated that in the long term, the digital subsystem acquires autonomy and absorbs functions of accounting and information subsystems as well as of subsystems for financial analysis and tax controlling.
8. Functional purpose of the risk-controlling subsystem in corporations was determined: 1) accumulation of information on identified risks and completed risk situations; 2) timely identification of risk factors, their classification and allocation of significant risks; 3) tracking and reporting on accomplished risk events; 4) drawing up a risk map; 5) assessment of significant risks; 6) drawing up and implementing a risk management plan, 7) monitoring risk minimization measures.
9. It was revealed that one of the primary active forms of risk-controlling conduct, in crisis as well, is the monitoring of controlled indicators' values that include accumulation, processing, control and analysis of identified deviations and interpretation of the reasons, the results of which determine its efficiency.
10. Areas for application of complex multi-level risk control based on the concepts of "3rd and fourth levels of protection" were suggested, the selection of which depends on the size of the corporation (large, small).
11. The function of anti-corruption compliance control in the risk controlling subsystem is highlighted; it is focused on identifying compliance with legislative and regulatory standards, requirements of alternative practices, introducing necessary measures, and control methods to ensure the process of combating fraud and corruption is an incomplete implementation of which causes compliance risks (reputational, legal and operational), that entail financial or other losses.
12. Areas for implementing a particular form of risk controlling are identified – i.e. monitoring conditions of financial instability that includes ensuring and maintaining the viability of early warning and response processes; timely identification of the causes and symptoms of

- financial crisis for appropriate neutralization; monitoring of the financial condition and default risks; planning and monitoring anti-crisis measures as well as corporate restructuring projects; predictive assessment of specific rehabilitation measures efficiency and overall anti-crisis concept; assessment of reasons for possible deviations of indicators in the rehabilitation plan, including those in the temporal aspect.
13. It was determined that the criterion of "critical" deviations differentiated by control periods, identifying their causes and applying to the control reports of executors is calculated in the GAP analysis subsystem.
  14. The following forms of financial managers' response in corporations to eliminate deviations in the GAP-analysis subsystem are indicated: no action, elimination of deviations, modification of planned or standard indicators when it is impossible or difficult to normalize certain aspects of financial activities.
  15. It was noted that financial controlling service unites internal auditors and audit commission creation wh, which depends on the organizational and legal forms of management.
  16. A subsystem of methodological support was created that integrates approaches, methods, techniques and tools for operational and strategic financial controlling along with its other types.
  17. It is proved that methodological principles form the ground for building a system of financial control in corporations, i.e. basic rules for achieving efficiency systematized in two groups (primary and unique), where every introduction of principles is aimed at developing new forms, types and methods of financial controlling implementation in the corresponding system, making it livable.
  18. Principles of financial controlling systems in corporations are identified as primary and special, those are; essential (complexity, integrity, decomposition, dialectic, scientific, dynamism, development, adaptability, determinism, coordination, independence, reliability, relevance and effectiveness) and unique (records for achievement of the goals and objectives of corporations at each level of management, legal security and validity of forms, types and methods of financial controlling conduct, formalization of its functional areas, processes and functions, periodicity, continuity, purposefulness, balanced management of the bodies that conduct financial controlling, consistency of corporate financial strategy types, optimization of the costs for assets and labor, financial resources for its conduct, reactivity, efficiency, digitization of its processes, automation of management and financial reporting processes, integration of data from remote systems, risk orientation, adaptation of the best world practices in financial controlling, conceptuality in different phases of the economic cycle, continuous improvement and building new competencies with the related authorities, observance of financial culture, transparency, information security and clarity).
  19. Leading indicators for conducting operational, strategic and predictive financial controlling, risk controlling and self-controlling based on notable author's Excel-VBA software were determined.
  20. Risk-controlling toolkit is developed for the assessment of potential strategic financial risk level using "green", "yellow" and "red" risk zones; "green", "yellow" and "red" zones were suggested for risk zones of indicators' values for financial tension, provided values of the latter are in the range of 0,491–0,492 units, which would be "green" zone, whereas relative deviation of its values from the optimal limit up to 10% brings those to "yellow" zone, and more than 10% - to the "red" zone; "green" risk zone of hierarchically interconnected inverse indicators of financial tension and overall solvency is indicated, reflecting the range of their values between 0,491–0,492 units, and 2,033–2,037 units respectively. An efficient and systematic approach to the determination of financial controlling essence in corporations requires the identification of specific scenarios, providing for.

21. Create a toolset for assessing and forecasting financial indicators that characterize strategic and operational financial risks in corporations, including the banking sector (Voronova et al., 2016).
22. Expansion of functional purpose for risk controlling subsystems, forecasting, and planning that assess potential strategic innovation risks in banks in the innovation system (Kulagina et al., 2019).

Based on the developed methodological and practical system toolset for financial controlling, corporations can independently identify the main areas of its implementation, taking into account the specifics of their business and selecting their development trends in the future.

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