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### **Advanced Tools and Methods in Audit of Financial & Economic Security: on the Example of Water Services Enterprises in Ukraine**

**Abstract. Introduction.** This article is devoted to advanced tools and methods in audit of financial & economic security at Ukrainian water services enterprises. The water supply and sewage system is one of the most important branches of Ukrainian economy. Given the critical technical, economic and financial situation of the industry, it demands the search for and application of new effective methods that would ensure not only the efficiency of operation, but also the security of the enterprise. That is why the formation of the system of financial and economic security of enterprises in the industry is an objective necessity of modern management.

**Purpose.** The purpose of the article is to study the methods and tools of auditing the financial and economic security of water supply and sewerage companies to ensure a rapid response to constant changes in the external and internal environment.

**Results.** The essence of auditing the system of financial and economic security of water supply and sewerage companies is manifested through the specifics of their activities. Therefore, along with the standard processes inherent in the audit, it is necessary to develop those directions which take into account the factors that are specific to these enterprises. Methods of estimating the environmental impact factors on the financial and economic security of water supply and sewerage companies can be grouped as follows: forecasting methods, modeling methods, methods for evaluating the consequences, expert methods.

**Conclusion.** Therefore, the result of auditing financial and economic security is the preparation of general conclusions and recommendations for ensuring its financial and economic security both at the current stage and in the future.

**Keywords:** water services enterprises; audit; management; financial & economic security; factor; system.

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### **Провідні інструменти і методи аудиту фінансово-економічної безпеки: на прикладі підприємств водопостачання та водовідведення України**

**Анотація.** Статтю присвячено дослідженню аудиту фінансово-економічної безпеки підприємств водопостачання та водовідведення. Встановлено, що управління фінансово-економічною безпекою є частиною загальної стратегії управління підприємством як системою. У довгостроковій перспективі роль фінансово-економічної безпеки в цілому та її складових елементів зокрема є невід'ємною складовою стратегічного планування діяльності. Обґрунтовано необхідність здійснення аудиту системи фінансово-економічної безпеки саме на підприємствах водопостачання та водовідведення з огляду на їх значущість для життя, розвитку сучасної людини та регіону в цілому. Доведено, що через критичне технічне, економічне та фінансове становище підприємств галузі існує необхідність пошуку та застосування нових ефективних методів, які б забезпечували не тільки ефективність функціонування, але й безпеку підприємства. Досліджено, що забезпечення фінансово-економічної безпеки, оцінка її рівня, прогнозування можливих загроз потребують певного інформаційно-аналітичного забезпечення. Окрім того, підприємство потребує постійного аудиту стану фінансово-економічної безпеки і в процесі стратегічних перетворень. Таким чином, основним інструментом, що дає змогу швидко реагувати на постійні зміни зовнішнього та внутрішнього середовища, є аудит. Розкрито сутність аудиту системи фінансово-економічної безпеки підприємств водопостачання та водовідведення, що проявляється через специфіку їх діяльності та полягає у перевірці достовірності, повноти інформації про фінансовий стан та складові фінансової безпеки, динаміку складових економічної безпеки підприємства, а також чинники зовнішнього і внутрішнього середовища, які його обумовлюють. Запропоновано основні етапи здійснення аудиту системи фінансово-економічної безпеки підприємства. На основі результатів дослідження можна зробити висновок, що основним завданням аудиту фінансово-економічної безпеки є не тільки відстеження факторів впливу на

кінцеві показники її рівня, а й визначення нових прогнорозованих показників на певний момент часу та на перспективу з урахуванням виявлених відхилень.

**Ключові слова:** підприємства водопостачання; аудит; управління; фінансово-економічна безпека; фактор; система.

**Formulation of the problem.** Management of financial and economic security is a part of the overall strategy of enterprise management as a system. The role of financial and economic security and its constituent elements becomes an integral part of the strategic planning of the enterprise in the long run.

The water supply and sewage system is one of the most important branches of Ukrainian economy. The services provided by such enterprises are an integral part of the life and development of a modern person. The cessation of the activities of water supply and waste water companies will inevitably lead to an anthropogenic catastrophe.

Given the critical technical, economic and financial situation of the industry, it demands the search for and application of new effective methods that would ensure not only the efficiency of operation, but also the security of the enterprise. That is why the formation of the system of financial and economic security of enterprises in the industry is an objective necessity of modern management.

Since today the problem of financial and economic security of enterprises is of paramount importance, there is a need to develop a system for audit its provision. Existing models and methods of managing financial resources, such as financial analysis, control, planning, forecasting are not able to respond promptly and adequately to changes in the internal and external environment of an enterprise in the current economic environment. The imperfection of the systems of collection, processing, systematization the financial information does not allow to fully use the above-mentioned methods and techniques, as well as to formulate objective conclusions.

Providing financial and economic security, assessing its level, forecasting possible threats requires some information and analytical support. In addition, the company needs constant audit of the financial and economic security state in the process of strategic transformations.

Thus, audit is the main tool that allows responding to constant changes in the external and internal environment quickly.

**Analysis of recent research and publications.** The research of the monitoring problem in the system of providing financial and economic security of the enterprise is the topic of the scientific works of domestic and foreign scientists. Among them are R. Kaplan, A. Mozenkov [1], V. Galitsin [2], O. Susidenko [3] and many others. The theoretical aspects of the concept of "audit" in the general sense are disclosed in the papers of the following authors: E. Korotkov, B. Litvak, V. Firmansa, E. Zakaria [4] and M. Nindito, O. Oleksyuk, I. Pliikus and others.

**Formulation of research goals.** The purpose of the article is to study the methods and tools of auditing the financial and economic security of water supply and sewerage companies to ensure a rapid response to constant changes in the external and internal environment.

**Outline of the main research material.** The audit of financial and economic security can be divided into two blocks: audit of financial activity and financial condition of the enterprise and audit of economic safety.

The audit of financial activity of the enterprise involves constant audit of cash flows, use of own and borrowed funds, etc. In turn, auditing the financial condition of the enterprise is a quantitative expression of its financial position.

Audit economic security involves assessing the quantitative and qualitative indicators of the enterprise as a whole to assess possible or existing threats.

Consequently, audit is limited only to the study of the internal state or factors of the internal nature of the enterprise.

However, given the complexity of production relations in water supply and sewage enterprises, the specificity of their mission, the variety of their functions and high social significance, their effectiveness is determined not only by internal but also by many external factors. Each of these factors affects the provision of financial and economic security.

Therefore, in order to ensure the financial and economic security of the enterprise, research should be carried out not only within the internal environment, but also the study of the conditions and factors of the environment of the economic entity.

Taking into account all of the above-mentioned factors, it is suggested, under the audit of financial and economic security of water supply and wastewater enterprises, to understand the specially organized continuous system, which uses the process of collection, accumulation, systematization, analysis of information; determines the factors of influence of external and internal environment; influences the activity of enterprises and forms the level of its financial and economic security.

The essence of auditing the system of financial and economic security of water supply and sewage companies is manifested through the specifics of their activities. Therefore, along with the standard processes inherent in the audit, it is necessary to develop those directions which take into account the factors that are specific to these enterprises.

Taking into account the above, we believe that the essence of auditing the system of financial and economic security of the company is to provide reliable, complete information on the financial position and components of

financial security, the dynamics of the components of the company's economic security, as well as the factors of the external and internal environment that determine it.

Therefore, we consider it expedient to propose the following structure of complex audit of the financial and economic security of the enterprise: audit of the environment (external and internal) and financial and economic audit.

The audit of the environment consists in the implementation of a permanent system of auditing the state of factors of the external and internal environment, the implementation of their assessment, forecasting, formation of information base for further research. The object of audit is the external and internal factors that attain a certain level of financial and economic security of enterprises.

At the stage of formation the audit information base, it is necessary to determine the state of the research object, which determines the directions and interconnection of the information flows that describe it. This will allow the development of a system that can provide the audit of entities with the necessary operational initial information about the state of auditing the object at a specific time period [5].

At the same time, when exploring every component of the internal and external environment, special attention should be paid to the specifics of the water supply and sewage enterprises. Therefore, in the standard components of financial and economic security, some of them should be considered in the context of the industry.

Thus, while investigating the components of consumers, it is necessary to pay attention to the fact that the main consumers of water supply and wastewater companies are the population, budget institutions of various levels, and others. At the same time, the population, as the main consumer, will be the most important factor of influence on this component. According to the contingent of suppliers it is necessary to allocate such directions as the relationship with suppliers of energy carriers forming the main amount of accounts payable by these enterprises [6].

Due to the high social significance of water supply and wastewater companies, they are given close attention both from the authorities and from consumers. Therefore, an assessment of possible threats should also be made for this component.

When audit the internal environment, special attention should be paid to the production process and the provision of services, and along with this to the technical component. In fact, the feature of water supply and wastewater companies is the continuity of the provision of services, which is ensured by the maintenance of fixed assets in good condition.

Enterprise environment audit is performed periodically, which corresponds with the dynamics of changes in factors of the external and internal environment. In addition, the duration and frequency of the audit process should be determined in accordance

with the timing of the collection, systematization and processing of information. The deadlines for making managerial decisions should also be taken into account. The main objective of the audit system is to ensure the timely making of management decisions aimed at ensuring the stability of the activity, preventing or eliminating the threat, correcting its consequences and ensuring financial and economic security. If in the process of developing an effective environmental audit system the company ensures compliance with the above conditions, it is possible to promptly monitor changes in the factors under investigation, to timely identify and respond to changes in the environment of water supply and wastewater companies, to assess the intentions and behavior of the main counterparties, and to take measures to ensure an appropriate level of financial and economic security in the long run.

**Results.** Thus, within the framework of the system of auditing financial and economic security, the following issues can be solved:

- observation, collection and accumulation of information on changes in environmental factors in dynamics;
- identification of trends in changes in environmental factors;
- assessment of the influence of factors of the external and internal environment on the level of financial and economic security at the enterprise;
- analysis of trends and trends of factors influence in dynamics;
- forecasting of changes in the financial and economic security, taking into account the influence of environmental factors;
- formation of the information support system for making managerial decisions for ensuring the financial and economic security in the long run [3].

Audit of the impact of external and internal environment on the level of financial and economic security of water supply and sewage companies provides a certain sequence of stages (Fig. 1).

Thus, at the first stage of environmental audit, the establishment of goals and definitions of audit tasks for the internal and external environment is foreseen.

In addition, it is necessary to determine the factors of influence on the result of ensuring the financial and economic security of water supply and sewage enterprises and to identify the most important elements of financial and economic security that may be affected by this.

The second stage involves evaluating the dynamics of the selected factors.

These factors should be grouped as follows:

- factors, influencing the activity of enterprises with high dynamism, which may change over time;
- factors of average dynamics of influence - influence with time does not change significantly;
- factors of weak influence - the effect over time remains almost unchanged.

In this case, the force of influence and the dynamics of the factors of influence may be subject to change. Consequently, factors can move from one group to another.

Next, all factors that affect the financial and economic security of water supply and sewage companies should be subdivided into factor-stimulants and de-stimulants, depending on the nature of the impact on its level [7].

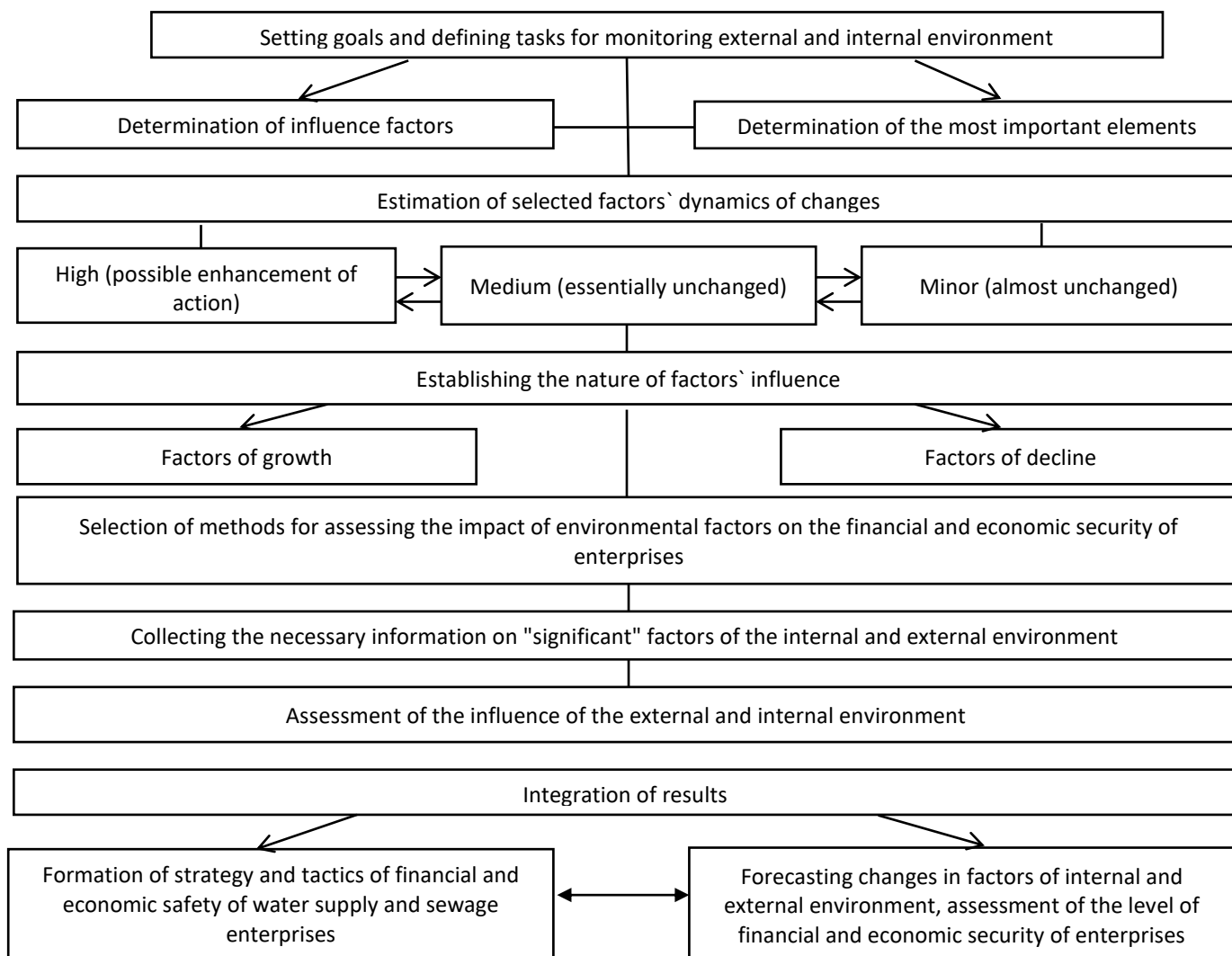


Figure 1 – Stages of auditing the environment of financial and economic security at water supply and sewage enterprises

Source: processed by researcher, 2020

Such a division allows predicting trends of changes in the activity of the enterprise in a timely manner, and making appropriate adjustments to the strategy of an enterprise's development as a whole and to the system of financial and economic security in particular.

The next step is choosing the methods for assessing the impact of environmental factors on the financial and economic security of enterprises.

Many methods of evaluation have been developed and proposed in the economic literature [8, 9]. Methods of estimating the environmental impact factors on the financial and economic security of water supply and sewage companies can be grouped as follows: forecasting methods, modeling methods, methods for evaluating the consequences, expert methods.

Each of the above methods is not universal. The expediency of using any of them is determined by the dynamism of changes in the external environment, the specificity of the factors whose impact is evaluated.

The next step is collecting the necessary information about "significant" factors of the internal and external environment. Studying the state and prospects of the development of individual environmental factors is based on obtaining qualitative and quantitative information, its processing with the help of proposed methods and the formation of relevant analytical findings. The information base of the research is financial and statistical reporting, macroeconomic studies, analytical reviews, results of sample surveys and observations, etc [10].

The number and list of "significant" factors, that is, the most important elements of the environment to be

investigated, are determined taking into account the size of the enterprise, the nature and specifics of its activity (specialization), goals and conditions of the diagnosis.

At the final stage, an assessment of the impact of the external and internal environment on the level of financial and economic security and the synthesis of the results has been carried out. At the same time, the favorable state or expected favorable changes in the environment increase the level of financial security of the enterprise. Poor condition or a predicted deterioration of the situation leads to the emergence and deepening of the crisis.

Another component of the proposed system for audit the financial and economic security of water supply and sewage companies is the direct audit of the financial situation's dynamics and other structural components of financial and economic security. In this context, financial and economic security can be considered as a combination of quantitative and qualitative indicators of financial, economic and technical state of an enterprise, which is determined by provision of financial stability, liquidity and solvency of an enterprise; efficient use of available financial resources; organization of internal control for main types of business activities at the enterprise; analysis of probable internal and external threats and prevention of losses; quality of the management [11].

Consequently, the use of audit of financial and economic security system involves conducting continuous research of an enterprise at any time.

The final stage of audit is the preparation of general conclusions and recommendations for ensuring its financial and economic security both at the current stage and in the future.

**Conclusions.** Thus, the significance of the proposed system for audit financial and economic security is as follows:

- it actively informs about changes in the state of financial and economic security of water supply and sewage enterprises;

- it provides the opportunity to actually build a forecast and approximate predicted indicators to real ones;

- it determines the impact of the external and internal environment on the financial and economic security of an enterprise and its components;

- it provides interested users with timely, objective and up-to-date information about the financial and economic situation, as well as the factors that determine them and the opportunities for change.

In this case, the main task of audit financial and economic security is to track the factors of influence on the final indicators of its level, the definition of new projected indicators at a certain point in time and in perspective, taking into account the detected deviations.

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