

Characteristics of the Main Aspects of Adaptive Management of Financial Security of Industrial Enterprises

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ABSTRACT

The purpose of this article is to characterize the main features of the adaptive management of the economic security of industrial enterprises. In the course of the study, three most acceptable adaptation options were formed: passive, active and dynamic. The choice of one of the adaptation options occurs in accordance with the results of assessing the level and characteristics of financial security management of an industrial enterprise in the context of taking into account all the components and nature of exogenous and endogenous changes. In accordance with the principles of a systematic approach, in the course of the study, mechanisms for adaptive management of the financial security of an enterprise were formed. It is determined that in the structure of the mechanism of adaptive management of the financial security of an enterprise, the most significant elements are such elements as security subjects, security objects and an adapter. At the same time, the adapter acts as an indicator of changes in the financial security management system in the context of the managed and control subsystems.

Keywords: *management, adaptive management, security, financial security.*

1. INTRODUCTION

The variability and low ability to predict possible changes in the operating environment of enterprises in our country actualizes the need to introduce the latest principles of adaptability into the management system, which can be characterized as the ability to quickly implement correct actions in response to changes in the operating environment. In addition, adaptation for a large number of Ukrainian enterprises will not be the only way to survive and will be able to create a powerful basis for further development, while contributing to the satisfaction of the interests of all participants in the management system, as well as creating a strong balance between the interests of the enterprise and the subjects of the external environment. If we consider the development strategy of the enterprise, then adaptation will provide a gradual departure from static indicators and clearly defined results towards the phased implementation of goals and sub-goals, with a constant possibility of adjustments in accordance with the existing situation, without fundamental changes in the overall strategy. In

our opinion, it is erroneous to believe that adaptation is only a prompt decision-making in response to certain changes in the external or internal environment. In the broadest sense, adaptation should be considered as a phased scientifically and experimentally substantiated program of action regarding the main structural and functional parts of the enterprise as an integral socio-economic system, as a result of the implementation of which there will be a gradual adaptation of the economic and financial system of the enterprise to the realities of existence. Adaptation cannot be interpreted as a one-time phenomenon, it is rather a gradual process based on the results of monitoring and analysis of the state of the enterprise, various exogenous and endogenous changes, resource provision and other indicators. Thus, this phenomenon is complex and requires a powerful and comprehensive theoretical and methodological substantiation.

2. LITERATURE REVIEW

The issues of research of aspects of the financial security management system of industrial enterprises have been the attention of many scientists. A thorough analysis of scientific work in this area should be carried out.

Kryshtanovych et.al. [1] together with other scientists investigated the main aspects of anti-crisis management of the financial security system for industrial enterprises, at the same time applying modern mathematical methods. Taking into account their results, we directed our own research in a different direction, namely the system of adaptation and adaptive management.

Many scientists paid attention to the problems of ensuring financial security for industrial enterprises and aspects of the formation of a management system for it. For example, Arefieva [2] and Delas et.al. [3] just defined the main practical aspects of financial security and its importance for managing the economic security of enterprises.

An important component in managing the financial security of an industrial enterprise is the formation of an appropriate assessment model. So, Ganushchak [4], Hryhoruk [5] and Lynenko [6], which just make a significant contribution to the development of this issue.

Considering the scientific contribution of scientists. It should be noted that today, the question of characterizing the key aspects of adaptive management is still open, especially relevant and new is to ensure the financial security [7] of industrial enterprises.

3. METHODS

We applied the methodology in the course of the study, which included the following methods: induction and deduction, comparison and systematization (used to determine the essential characteristics and features of the adaptive management of the financial security of an enterprise); modelling [8-11] methods (for the development of an appropriate mechanism for adaptive management of the financial security of an enterprise); morphological analysis - to clarify the conceptual and categorical apparatus with the problem; graphic - with a visual presentation of theoretical and methodological material; abstract-logical - for theoretical generalizations and conclusions of the study.

4. RESULTS

Adaptation of financial security management of an enterprise should be consistent with changes in other components of economic security and adaptation of all enterprise activities. Another point is that financial security is a key component in the system of economic security, in accordance with any changes in the enterprise and, in particular, in its management system, should be

carried out taking into account their impact on the financial security of the enterprise. We have established constraints that relate to financial soundness, stability, balance and reliability. That is, it is inappropriate to carry out changes that will lead to a loss of balance and significantly complicate the return to a steady state and stable operation of the enterprise. Due to the preparation of forecasts, it is advisable to choose the adaptation option that will ensure the achievement of the tasks set for minimal losses and an acceptable level of risk.

We define adaptation as the basis for the transition from an inert system of financial security management to a reactive one. The basis for the adaptation should be the results of systematization and hierarchical ordering of key factors on the process of financial security management in the conditions of each enterprise. The expediency of choosing a certain adaptation option should be justified by the results of assessing financial security management and forecasts regarding their changes during the implementation of a certain adaptation program.

Adaptive management forms the necessary basis for ensuring financial security at the level necessary for functioning and development with the ability to achieve financial interests. At the same time, given the lack of scientific research in this area, there is a need to consider the modern interpretation of the concept of "adaptation", to determine the conditions for the adaptation of an enterprise, to form the essence of the term "adaptive management of financial security of an enterprise" with the subsequent development of methodological foundations for the implementation of adaptive financial security management in conditions Ukrainian enterprises.

In economics, the interpretation of the term "adaptation" is characterized by a certain heterogeneity. In a significant number of definitions, adaptation is presented as a process aimed at making changes to the system in order to adapt it to the conditions of functioning. Since the operating conditions are variable, adaptation must be constant.

Adaptation, like any process, characterized by certain parameters that make it possible to carry out its classification. Quite often, static (using the acquired experience of changes in certain situations) and dynamic (adapting to changes in the external environment), individual (used within an individual enterprise) and group (used by a group of enterprises), periodic (under certain conditions to restore stability in functioning) , temporary (using tools and methods of adaptation only within a short period of time, which is characterized by an increase in the negative impact on the enterprise) and constant (continuous with complex forecasting of changes in business conduct).

Possible measures to adapt the enterprise can be conditionally classified as follows: organizational and managerial, which provide for changes in the structure of the enterprise through the implementation of restructuring, reengineering, diversification of production, and the like; economic, which consist in optimizing costs, introducing controlling and budgeting, revising pricing policies and increasing the efficiency of resource use, using motivational mechanisms for employees, improving qualifications and retraining personnel; technical and technological - aimed at improving the technological process of manufacturing products, updating the technological base, putting into operation new equipment, using energy-saving technologies.

We have applied an integrated approach, that is, when the relationship is consistently built between all the previously considered concepts and the author's interpretations formed for them, which provides the necessary basis for understanding the essence of adaptive management of the financial security of an enterprise. If we define financial security management with a focus on achieving and maintaining the proper level of financial security, then adaptive management is aimed at a scientifically grounded change in the management system. Improving the effectiveness of the actions of security subjects becomes possible through the optimization of the organizational structure, review of the management style, assessment of the effectiveness of the application of certain methods, and the like.

The goal of adaptive management of the financial security of an enterprise should be defined as improving the financial security management system to coordinate its key parameters with changes in the external environment of the enterprise and strengthening the interaction between internal components.

According to the main task, it can be formulated as follows - making changes to the functioning of the financial security management system of an enterprise to maintain the ability of security subjects to develop and implement solutions aimed at achieving and maintaining financial stability, stability, balance and reliability despite changes in the external environment and the development of internal processes.

Adaptive management of the financial security of an enterprise provides for the implementation of measures aimed at:

- risk reduction by improving information support for managerial decision-making and reducing uncertainty;
- the use of economic and mathematical methods and models to diagnose the level of influence of factors on the process of managing the financial security of an enterprise;

- ensuring flexibility in the implementation of protective measures through the choice of a certain type of adaptation.

The implementation of adaptive management of the financial security of an enterprise should be carried out sequentially, that is, under certain conditions and by performing certain stages. We have outlined the content of the main stages in the previous subsections of the scientific research, therefore, we will focus on only certain points. So we offer three adaptation options:

- "passive" - changes in the external environment and internal processes indicate "permissible deviations", and the level of financial security management for all components is defined as "high", that is, those that do not significantly affect the level of financial security and do not entail growth risks and do not indicate the possibility of threats in the long term. Passive adaptation consists in making changes to the process of developing and implementing management decisions, improving their effectiveness and the effectiveness of protective measures in the field of financial security in general;

- "active" - the level of financial security, the effectiveness of actions of security subjects and the effectiveness of the use of resource and organizational support is defined as "normal" in case of significant changes in the external environment and internal processes. Active adaptation involves making changes to the goals and objectives of management, strengthening interaction between structural units and establishing cooperation with external security actors;

- "dynamic" - the level of financial security management of the enterprise in all components is defined as "low", changes in the external environment are difficult to predict, internal processes are under limited control. Dynamic adaptation consists in restructuring the organizational structure of managing the financial security of an enterprise, changing functional tasks and sectors of responsibility.

To clarify the formation of the theoretical foundations for the application of adaptive management of financial security of enterprises, we have developed an appropriate mechanism that specifies the place of adaptive management in the management of financial security of an enterprise.

The developed mechanism is based on the interpretation of the concept of "adaptation", which, in the management of the financial security system, provides for the introduction of changes - primarily in relation to the security subject, as a control subsystem. The root causes of such changes are internal changes (X1), in particular in the tactics of ensuring economic security, or viewing the benchmarks in ensuring financial security as a key component of the economic security of an enterprise. Internal changes also affect the controlled subsystem, that is, the security object (X1), an example

of which is the implementation of an internal threat to the financial security of an enterprise. We also took into account the influence of the external environment (X2) on the specified subsystems, which was discussed in the previous subsections of the scientific research. Adaptive control, which is implemented through the adapter, provides for the assessment of the control and controlled subsystems (X3) (Figure 1).

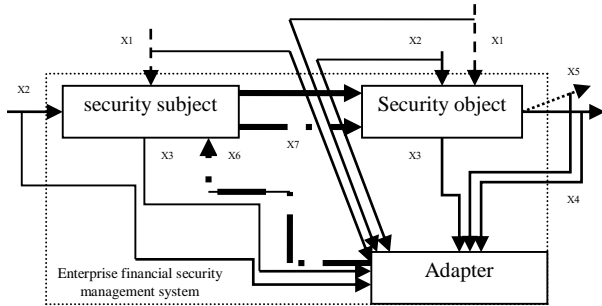


Figure 1 The mechanism of adaptive management of the financial security of the enterprise

Within the framework of the financial security management system of an enterprise, the security subject purposefully influences the security object by developing and implementing appropriate management decisions to achieve and maintain the established security level. The management of the financial security of the enterprise provides for the development of a plan for ensuring the financial security of the enterprise (X4) and forecasting possible variants of deviations (X5). Adaptive control, according to the one considered in Figure 4.14 of the process, provides, based on information about changes in the external and internal environment and the results of assessing the management of the financial security of the enterprise, the implementation of the choice of adaptation options ("passive", "active" or "dynamic"). That is, a feature of adaptive control is not only a change in influence within the interaction of security subjects and objects, but adaptation of the control subsystem. The adapter forms the necessary informational basis, including by providing feedback. A situation arises when not only the control subsystem affects the controlled, but changes in the controlled are possible, they become the initial signal for adaptation of the control, due to which the influence within the system changes (X7), that is, the control becomes flexible, able to respond to the slightest changes in the internal and external environment, rationally use the available organizational and resource support. Due to the existence of several adaptation options ("passive", "active" or "dynamic"), a basis is formed for a differentiated approach to improving the management of the financial security of an enterprise. It should be noted that adaptive management acquires an individual character, that is, there is a clear link to the basic conditions and the implementation process, which are difficult to reproduce in the conditions of any other enterprise.

The complexity of the process of adaptive management of the financial security of an enterprise is explained by the need to diagnose the state of the external and internal environment, control and controlled subsystems with an adequate and quick response to changes. Such a response becomes possible due to the consideration of certain aspects: social adaptation, scientific and technical adaptation and administrative adaptation. In our opinion, social adaptation should provide for the relationship between the executors of the managing and controlled subsystems, an understanding of the need to satisfy the financial interests of the subjects of the external and internal environment, the key role of the human factor in the process of ensuring the economic security of an enterprise. We associate scientific and technical adaptation with the possibility of applying methods for determining the influence of factors on the process of managing the financial security of an enterprise, as well as planning the required level of financial security and predicting possible changes for the implementation of a timely response by security subjects. Administrative adaptation consists in increasing the autonomy of the work of specialized units.

5. DISCUSSIONS

Our research involved identifying the key aspects of the adaptive financial security management of industrial enterprises. A significant number of scientific works are devoted to similar problems. In particular, Mandzinovska et.al. [12] provided for the analysis of key aspects of the formation of a mechanism for managing the financial security of industrial enterprises. Also, similar research results were presented by Shtangret [13]. But our study has a number of differences, one of the main ones lies precisely in the fact that we took precisely the adaptive management of the financial security of industrial enterprises and characterized its key aspects.

Wu [14] and Zhou [15] presented the main mechanisms, taking into account the aspects of adapting the safety management system of an industrial enterprise under various conditions of functioning and development. As a result of the research carried out in accordance with the systematic approach, we have developed a mechanism for adaptive management of the financial security of an enterprise, the components of which are security subjects, security objects and an adapter that determines the nature of changes in the financial security management system, in particular, both relatively controllable and managing subsystems.

6. CONCLUSIONS

Thus, in the course of the study, it was determined that today's difficult conditions for the functioning of industrial enterprises on the territory of Ukraine are the most significant factor for actualizing the issue of the formation of adaptive mechanisms for the main economic

processes and the entire management system as a whole, gradually becoming the dominant factor in their further functioning and development. The very phenomenon of adaptation can be viewed as a tool for ensuring economic security and survival of enterprises in the market. At the same time, the adaptive mechanisms for managing the financial security of an enterprise today are interpreted as an innovative new direction of ensuring the functioning of an enterprise, and in this regard, they require significant theoretical support and experimental testing. A characteristic feature of adaptive management is the focus on transformation processes in the exogenous and endogenous environment of the enterprise, monitoring the dynamics of processes within the enterprise, as well as constant assessment of the level of financial security management of the enterprise. As a result, all these processes will form a powerful information basis for the implementation of adaptive procedures for the control part of the financial security management system at the enterprise. The purpose of adaptation management is to gradually adjust the basic actions and functions of safety subjects by choosing the most adequate way of adaptation. It was determined that for industrial enterprises today, adaptation management is the most acceptable choice for transforming an outdated financial security management system.

AUTHORS' CONTRIBUTIONS

Stepan MELNYK: study conception and design; data collection; analysis and interpretation of results; draft manuscript preparation.

Oleksandr SYLKIN: study conception and design; data collection; analysis and interpretation of results; draft manuscript preparation.

Nadiia MELNYK: study conception and design; data collection; analysis and interpretation of results; draft manuscript preparation.

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