

Department of economic security of the state in the conditions of globalization: methodology and trends

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Abstract. This article is devoted to the problem of managing the economic security of the state, which is relevant in the modern world. Various factors of global importance affect the economy of all states directly or indirectly, therefore, it is necessary to take them into account in order to increase the level of economic security. The strategy of managing the economic security of the state should be sufficiently flexible and long-term, which will smooth out the impact of global changes and follow the preset strategic goals. At the same time, it is proposed to implement digital technologies to constantly monitor the impact of global factors on the country's economy.

1 Introduction

The importance of this study is due to the fact that in a modern market economy, states seek to develop a strategic economic policy, taking into account various changes in the global economy. The national economy, as world experience shows, cannot develop independently of the world economy. Therefore, economic policy must take into account the different trends and processes of development of world markets in order to obtain a competitive advantage. On the other hand, the integration of the national economy implies a certain dependence on global factors, which can be economic and non-economic. The object of the study is the economic security of the state. The subject of the research is the study of the methodology for assessing the economic security of the state.

The purpose of this study is to develop an approach to assessing the economic security of the state in the context of globalization.

Based on the subject, object and aim of the study, several tasks are set in the work:

- Characteristics of the factors of economic security of the state in the context of globalization;
- Assessment of directions of influence of various factors on the economic security of the state;
- Development of approaches for assessing the level of economic security, taking into account various global factors.

2 Literature review

Most of the negative processes in the global economy are now acute, which is connected with many restrictions caused by the coronavirus infection. These difficulties have not yet been overcome, and today they create a number of difficulties for the sustainable and balanced development of the economies of countries in the long term. That is why, today, the issues of social and economic security are relevant and actively studied by scientists such as Arbatov, A.A. [1], O.S. Bezuglyak [2], S. Sumner [15], D. Omand [8], , D. Kondratov [21], P. Subacchi [25], Popov M.V. [3] , George E. Rejda [11], G. Blokdyk [12] and many others.

As noted by A. Arbatov, D. Kondratov, S. Sumner, the economic development of the state should be based on its strategic goals and objectives of socio-economic policy and take into account the threats to economic security associated with global changes. Today, the generally accepted understanding of security is associated with "a certain state in which a person (subject) is protected and does not suffer losses from the negative influence of various factors." [3]

Economic development is the basis of social, material, spiritual, political and cultural security of the state and citizens. As D. Omand notes, the economic security of the state is characterized by manageability and, therefore, the ability to protect its own economic interests from the negative impact of global destabilizing factors in the long term, taking into account integration processes in the markets [8].

Thus, the analysis of the main theories to the definition of "economic security of the state" [1] - [13] allows us to assert that the strategy for managing the economic security of the state must necessarily take into account the directions of development of the world economy and changes in factors of global significance [1].

At the same time, many aspects of assessing the level of economic security of the country currently remain open. In particular, global markets are very dynamic and there is a need to develop a flexible model for assessing the impact of global factors on the economic security of the state. In this context, the authors consider it appropriate to assess the impact of global factors on the economic security of the state on an automated, ongoing basis, taking into account the interests of the national economy.

3 Proposed methodology

Basic methods. The methodological basis of the study is dialectical, deductive, logical, formal-logical, mathematical, graphical methods.

Algorithm. The fundamental basis of the economic security of the state is expressed in economic processes and phenomena, the management of which involves a 3-level structure of local, regional and national scale. [4]-[8] Here are important aspects in the context of managing economic security and in terms of globalization (Figure 1):

- The direction of economic integration and the sustainability of the economy;
- State production infrastructure (production chains, economic efficiency, economic diversification);
- The level of economic security of market entities of the state.

4 Result analysis

Economic security of the state: methodology and trends.

To improve the country's economic security in modern conditions it is not sufficient to manage internal resources and the potential of the economy effectively. It is also necessary to take into account changes in world markets that can directly or indirectly affect economic

security. To assess the impact of factors of global importance, it is also necessary to assess the priorities and directions of the country's economic integration and the level of economic dependence on different states and economic unions. [6]

The direction of globalization and the goals of economic policy are considered in Figure 1.

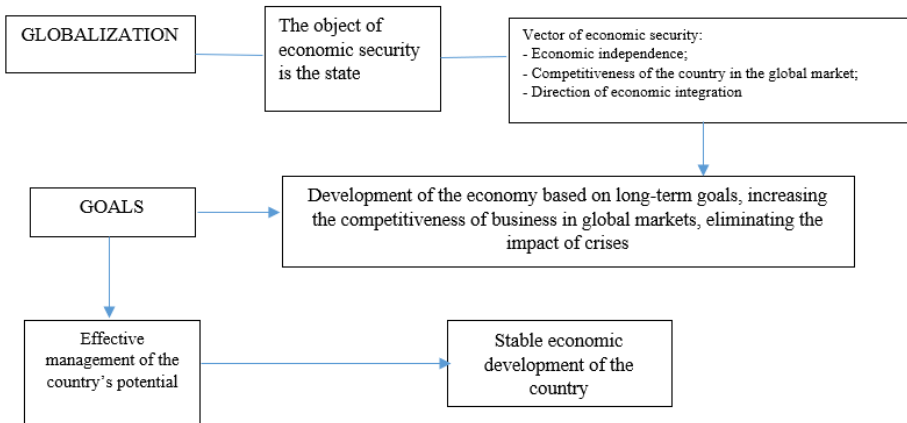


Fig. 1. Main components of economic security.

Thus, domestic and international relations are focused on the use of internal resources and the potential of the state, the improvement of market opportunities, the development of the social and economic environment, and environmental protection.

Global factors can have a strong impact on the economy, therefore, it is necessary to analyze constantly and control global factors on an automated, ongoing basis, taking into account the interests of the national economy. Factors affecting the economic security of the country, as a rule, are dynamic and correlated. Thus, in order to obtain comprehensive information about the level of economic security of the country, it is necessary to analyze “big data” on global factors of the world economy.[3]

Global factors affecting the economic security of a country can have a market and non-market nature. These factors should be considered in the following main directions [22] - [26]:

- The direction of the economic integration of the country;
- Phase of economic development of the world economy;
- Development in the main international markets for raw materials, gold and currency;
- Economic situation in interdependent states;
- Geopolitical situation;
- Unpredictable factors.

The direction of a country's economic integration implies its development in integration with other countries or in the context of economic unions. In this case, it is necessary to assess how integrated the country's economy is based on the strategic goals of economic policy. This component is assessed by peer review.

The phase (period) of economic development in the world economy must be determined by the long waves of cyclical development of the Kondratiev economy [19].

Development in the main international markets for raw materials, gold and currency. This factor is systemic and is calculated based on the weighted average changes in the international markets for Brent oil, pure gold, and the US currency.

Economic situation in interdependent states. In this case, it is necessary to assess the degree of dependence of the economy on the economies of other states, and if such a dependence exists, it is feasible to monitor the rate of development of the country's GDP.

Geopolitical situation. This factor implies changes in geopolitical priorities, global interests and their correspondence to the facial interests of the country. The degree of influence of the geopolitical situation on economic security is assessed by expert methods.

Unexpected factors. These factors are unpredictable, they imply unexpected changes on a global scale that can directly or indirectly affect the development of the economy. The possible impact of unexpected factors is assessed by an expert method and depends on the policies of individual states.

Approach to assessing the level of economic security in the context of globalization.

The aforementioned factors of global significance, in contrast to domestic (internal) factors of economic security, may not be interdependent, changes in one factor may be of local importance, and therefore it is advisable to consider them as a whole, but to take into consideration the fact that a change in certain factors may lead to some chain changes in others. [14]

In order to assess the economic security of a country, one can apply big data analysis and forecasting methods in MySQL and Python. The developed Python-based program makes it possible to assess the impact of global factors on the level of economic security using a 100-point system. [17]-[21]

Figure 2 shows a graphical display of the influence of global factors on economic security.

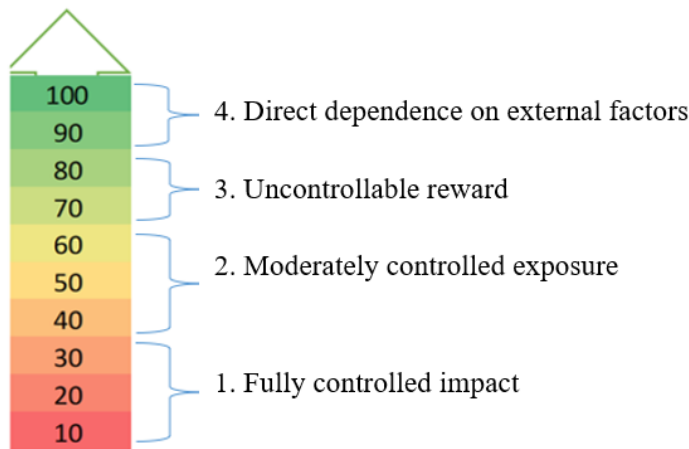


Fig. 2. Levels of influence of global factors on economic security.

- Fully controlled impact. If the indicator is below 40, the influence of global factors on the economic security of the country is at a completely controllable level, therefore, the state can take advantage of the current situation and gain competitive advantages in international markets.

- Moderately controlled impact. If the indicator is from 30 to 60, the influence of global factors on the economic security of the country is at a completely predictable level. In this situation, it is necessary to adjust foreign economic policy based on changes in global economy.

- Uncontrolled impact. If the indicator is from 70 to 90, the influence of global factors is too strong and their influence on the economic security of the country is at an uncontrollable, chaotic level. In this situation, it is necessary to change the vector of development of international economic policy and develop a strategy to mitigate dependence on international factors.

- Direct dependence of the national economy on global factors. If the indicator is 90 or higher, the economic security of the country is lost, the country's economy is completely dependent

on global factors. In this situation, strategic changes are needed in the national economy, and in some cases a change in the state system.

A comprehensive and structural assessment of global threats is used to compare the degree of danger of various external threats to the economy. A comprehensive assessment of economic threats to the external environment is necessary to ensure the adoption of adequate macroeconomic decisions, the implementation of a system of measures that form the reputation of an economically prosperous state. An effective system for assessing and managing economic threats that come from the external environment is possible only by directing internal factors that can be represented as state resources. It should be noted that for each state these resources are unique and their effective use can contribute to the effective management of global threats to the economic security of the state. Existing methods for assessing and diagnosing economic risks are based on a detailed analysis of the external and internal environment of the system. We should note the absence of a single mechanism for managing threats to economic security in scientific thought, which is caused by threats of a systemic global nature that are aimed at the economy as a whole and its segments. This situation leads to an aggravation of the situation in priority sectors of the economy: infrastructure sectors, education, healthcare, ecology, etc. Global processes and their impact must be assessed in different ways. Methods of risk management in the economy require the use of a comprehensive assessment of all types of possible threats (economic, engineering, social factors, etc.) and not only existing, but possible. Nevertheless, the assessment of threats to economic security should be carried out using statistical methods of analysis and forecasting. This approach makes it possible to structurally assess the level of economic security and predict its development.

In the course of applying statistical methods, forecasting with a probabilistic approach, the analysis of risks for an economic system begins with the study of its composition, relationships between elements and features of functioning. The totality of the economic system can be divided into two categories - stable and unstable to global factors. The conditions under which events occur are reduced to a logical scheme - a logical tree. A logical tree is a graph in which the "arcs" are the types of possible systemic risks, and the vertices are logical operations that connect the initial factors. In probability theory, two random events are said to be independent if the occurrence of one of them does not change the probability of the occurrence of the other. With this approach to the development of a comprehensive model for assessing economic security, each risky event can occur on its own, without affecting any other event, that is, without changing the probability of its occurrence. Provided that the economic system is attacked from n successive risk events, then with probability $p_i(t)$ of their occurrences, there is probability of vulnerability [11].

$$p(t) = p_1 \times p_2(t) \dots \times p_n(t) = \prod_{i=1}^n p_i(t), \quad (1)$$

If risk events occur in parallel, then the probability of avoiding risk is equal to:

$$q_i(t) = 1 - p_i(t), \quad (2)$$

and the probability of the system reliability is:

$$q_i(t) = q_1(t) \times q_2(t) \times \dots \times q_n(t) = (t), \quad (3)$$

$$p(t) = \prod_{i=1}^n [1 - p_i(t)], \quad (4)$$

The strategy for responding to global threats is selected based on the results of a comprehensive risk assessment, additional analysis of the economic and technological potential of the state, predicted environmental performance, and the current legal framework for doing business (inflation, taxes, growth in the number of competitors). In this complex, you can also apply marketing, management and other researches. The organization of the system for ensuring the economic security of the state on the basis of a comprehensive assessment allows timely monitoring and signaling of negative events in the economy. This

approach helps to understand the threats in a timely manner and solve them based on the goals of the economic development of the state.

5 Conclusion

The developed algorithm makes it possible to automatically assess the impact of all factors of global importance on the level of economic security and identify those factors that have a strong impact, and then adjust economic policy to improve the country's economic security and competitiveness. If the program indicator of the influence of global factors rises above 50%, it is necessary to determine a specific component of the impact and direct additional efforts to balance its impact in the national economy.

Strategic management of the economic security of the state can be effective if the influence of various factors of global importance is taken into account. In this context, it is necessary to consider the complex impact of global factors on the national economy. The developed methodology for assessing the impact of global factors on the national economy allows to get information on the influence of various factors of global significance and adjust economic policy based on the foreign (external) economic development goals of the country's economy.

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