

UDC 338.242.2:658.15:005.52

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RESOURCE SUPPORT FOR THE APPLICATION OF THE INDICATOR METHOD FOR IDENTIFYING THREATS TO THE ECONOMIC SECURITY OF ENTERPRISES IN THE POST-CRISIS PERIOD

РЕСУРСНЕ ЗАБЕЗПЕЧЕННЯ ЗАСТОСУВАННЯ ІНДИКАТОРНОГО МЕТОДУ ВИЯВЛЕННЯ ЗАГРОЗ ЕКОНОМІЧНІЙ БЕЗПЕЦІ ПІДПРИЄМСТВ У ПОСТКРИЗОВИЙ ПЕРІОД

Abstract. The article examines the issue of resource provision for the application of the indicator method for identifying threats to the economic security of enterprises in the post-crisis period. It also shows that economic security at the meso level is a multidimensional system that integrates economic, social, production, innovation and environmental components, and that management effectiveness depends on the ability to balance the interests of regional development stakeholders. The authors argue that in the context of post-crisis recovery, the formation of a sustainable resource potential that ensures the timely detection and neutralisation of threats is of particular importance. The indicator method is defined as a structured analytics tool that allows tracking deviations of key socio-economic indicators from normative and threshold values. A procedure for assessing the effectiveness of regional economic security strategies is proposed. The article proposes an approach to forming a system of economic security indicators for enterprises in the region, based on grouping indicators by functional blocks (macroeconomic, production, innovation, budgetary and financial, social, foreign economic and environmental). It is determined that the effectiveness of the indicator method is possible with the availability of appropriate resources – human, information, analytical and financial. The role of regional authorities in ensuring the transparency of statistical data, increasing the frequency of their updating and standardising assessment methods is demonstrated. Attention is focused on the need to integrate the economic security assessment system into the KPI mechanisms of executive authorities, which contributes to the coordination of the interests of the state, business and the population. In conclusion, it is argued that the resource support for the indicator method should be based on the principles of data openness, interagency coordination and the use of digital analytical platforms, which makes it possible to improve the accuracy of threat measurement and the efficiency of management decisions in the post-crisis period.

Keywords: economic security of enterprises, indicator method, resource provision, post-crisis development, regional governance.

Анотація. У статті досліджено питання ресурсного забезпечення застосування індикаторного методу виявлення загроз економічній безпеці підприємств у посткризовий період. Також показано, що економічна безпека на мезорівні є багатовимірною системою, у якій інтегруються економічні, соціальні, виробничі, інноваційні та екологічні компоненти, а ефективність управління залежить від можливості збалансовано узгоджувати інтереси стейкхолдерів регіонального розвитку. Авторами обґрунтовано, що в умовах посткризового відновлення особливого значення набуває формування стійкого ресурсного потенціалу, який забезпечує своєчасного виявлення та нейтралізації загроз. Індикаторний метод визначено як інструмент структурованої аналітики, що дозволяє відслідковувати відхилення ключових соціально-економічних показників від нормативних і порогових значень. Запропоновано процедуру оцінки ефективності регіональної стратегії економічної безпеки. В наведеній статті запропоновано підхід до формування системи індикаторів економічної безпеки підприємств регіону, що базується на групуванні показників за функціональними блоками (макроекономічний, виробничий, інноваційний, бюджетно-фінансовий, соціальний, зовнішньоекономічний та екологічний). Визначено, що ефективність застосування індикаторного методу можлива за наявності відповідного ресурсного забезпечення – кадрового, інформаційного, аналітичного та фінансового. Показано роль органів регіонального управління у забезпеченні прозорості статистичних даних, розширенні частоти їх оновлення та стандартизації методик оцінювання. Акцентовано увагу на необхідності інтеграції системи оцінювання економічної безпеки у механізми KPI діяльності органів виконавчої влади, що сприяє узгодженню інтересів держави, бізнесу та населення. У підсумку зроблено висновок, що ресурсне забезпечення індикаторного методу має будуватися на принципах відкритості даних, міжвідомчої координації та використання цифрових аналітичних платформ, що дає можливість підвищити точність вимірювання загроз та оперативність управлінських рішень у посткризовий період.

Ключові слова: економічна безпека підприємств, індикаторний метод, ресурсне забезпечення, посткризовий розвиток, регіональне управління.

Formulation of the problem. Economic security at the meso level is a set of factors and conditions that ensure the preservation of the parameters of sustainable development of enterprises in the region in conditions of protection from external and internal threats, and includes social, economic, technological, and informational components. Accordingly, the goals of ensuring economic security are achieved through the development of regional plans and programmes for strategic and tactical implementation aimed at developing economic, social and production subsystems. The principles of effective organisation of management activities at the level of enterprises in the region are based on the classical theory of decision-making, which involves the analysis and synthesis of problems in individual managed subsystems and the subsequent setting of goals. At the same time, in order to achieve sustainable development of enterprises in the region, it is necessary to establish optimal criteria of an economic, social and environmental nature. Ensuring a balance in the implementation of these approaches is complicated by the existence of resource antagonism. In addition, the temporary planning period is differentiated for the purposes of economic, social and environmental development of enterprises in the region. The components presented form the economic security strategy for enterprises in the region and are implemented through operational and tactical plans at the level of enterprises, regional executive authorities and municipal authorities.

Analysis of recent achievements and publications.

Contemporary scientific research pays considerable attention to the problems of ensuring economic security of enterprises and the need to develop effective tools for its assessment [1-5]. Foreign scientists, in particular Y. Sheffi and B. Klievink, emphasise the importance of applying a systemic-indicator approach and using monitoring data to respond promptly to threats in the post-crisis period. Among Ukrainian researchers, such as S. Illiashenko, I. Binko, and I. Kravchenko, the emphasis is on developing structured indicator systems for assessing economic security and determining their threshold values. At the same time, analysis of the literature reveals insufficient consideration of issues related to the resource provision for the application of the indicator method at the meso level, especially in the context of post-crisis economic recovery in the regions.

The purpose of the article is to justify approaches to resource provision for the application of the indicator method for identifying threats to the economic security of enterprises in the post-crisis period and to determine the conditions for the effective formation of a system of evaluation indicators at the meso level.

Presentation of the main material. Let us consider the process of making a management decision on the formation of an economic security strategy for enterprises in the region, based on an assessment of the degree of fulfilment of established criteria (Fig. 1). The development of an effective economic security strategy at the level of enterprises in the region should be based on the results of an analysis of its socio-economic situation. The goals and objectives formulated in the process of strategy development should be linked to the main growth points of enterprises in the region. It is advisable to study the dynamics of the main macroeconomic indicators of enterprises in the region, calculated before and after the

implementation of individual areas of the economic security strategy.

This will make it possible to assess the significance of the strategy's measures in solving the socio-economic problems of enterprises in the region related to the formation of resource potential (production, innovation, human resources, etc.). The presented model for assessing the directions of the economic security strategy in terms of economic, social and environmental effectiveness is aggregated; the answer to each question involves the development of effectiveness criteria in each regional subsystem, the determination of expected results and necessary results. At the same time, within the framework of building strategic development models, the expected results should be assessed in the long term and take into account not only indicators that characterise the direct expected effect, but also those parameters that allow for the assessment of indirect effectiveness. When assessing the effectiveness of the developed strategy, it is advisable to use the key question method, which involves analysing management decisions made at various levels. Thus, the concept of «economic security» is inextricably linked to the quality of life of the population. Accordingly, the effectiveness of the strategy should be considered through the prism of satisfying the material and spiritual needs of the population of the region's enterprises. At the same time, all aspects of life, including social, economic and

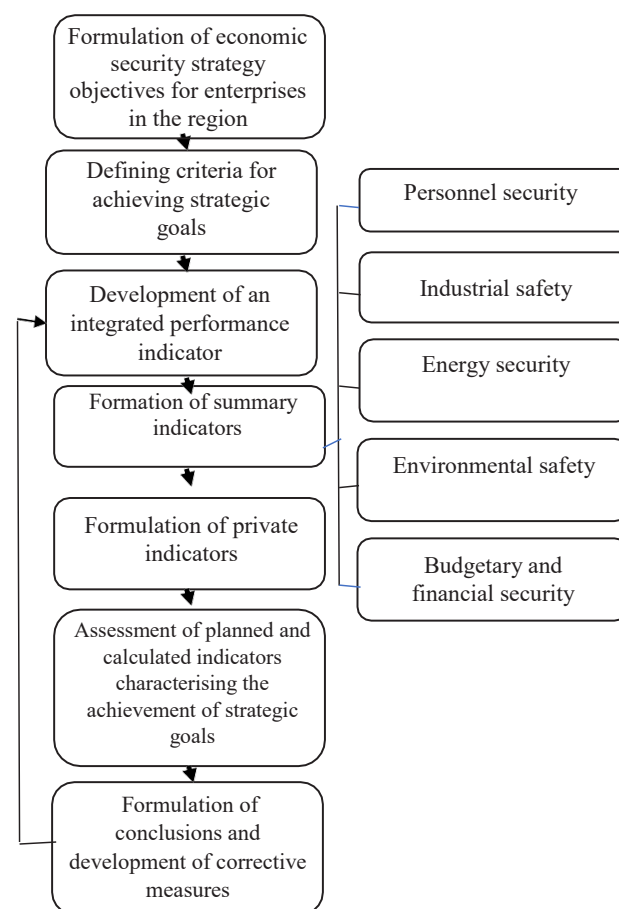


Figure 1 – Procedure for assessing the effectiveness of a regional economic security strategy

Source: compiled by the authors

environmental, are subject to assessment. Increasing production capacity, which is one of the goals of economic security, should be achieved by complying with production and environmental safety requirements. The answer to the question "How to increase the investment attractiveness of enterprises in the region?" lies in solving the tasks of activating the innovative activity of enterprises and scientific institutions in the region, as well as improving the instruments of state regulation. At the same time, it is important to determine priorities when making decisions on supporting individual elements of the region's socio-economic system. From the perspective of state management, the implementation of economic security objectives takes place in conditions of limited funding and requires an assessment of priorities in achieving the objectives of various enterprises of regional subsystems, as well as taking into account the diverse interests of their elements. The stakeholders in the implementation of the economic security objectives of the region's enterprises are:

- regional authorities;
- the business sector;
- the non-profit sector and public organisations;
- the population of enterprises in the region as a whole.

Each of the elements presented is aimed at solving specific tasks within the framework of the economic security strategy. Thus, the goal of state authorities is to ensure the implementation of socio-economic development tasks defined at the state level, as well as compliance with the requirements of Ukrainian legislation on the use of budget funds in accordance with the Budget Code of Ukraine, the Law of Ukraine "On Public Procurement", the Economic Code of Ukraine and other regulatory and legal acts aimed at ensuring budgetary discipline.

The business sector is interested in creating conditions for increasing sales and net profits; the non-profit sector is interested in adhering to the principles of social justice; and the population of the region's enterprises is interested in improving the quality of life and satisfying material and spiritual needs. Thus, each party interested in improving the economic security of enterprises in the region has its own interests and is in a state of a certain balance of interests. At the same time, in the process of interaction, "...the stability of enterprises in the region as a system is determined by the fact that the sum of its constituent elements is transformed into a new quality when so-called emergent properties are formed..." [3].

Legislative and executive authorities exercise regulatory influence at the regional level aimed at achieving economic security goals. Regulatory and legal acts developed at the level of enterprises in the region are based on economic security provisions defined by central government authorities.

The components of the regional economic security system are organisations and enterprises of various forms of ownership that generate resources to support and develop the scientific, human, entrepreneurial, informational and financial potential of the region. A systematic approach and consideration of diverse interests are achieved through the use of quality management principles by the region's executive authorities.

In order to improve the effectiveness of public administration to achieve the economic security goals of enterprises in the region, relevant national standards have

been introduced in Ukraine based on the provisions of international standards ISO 9001:2015, ISO 9000:2015, and ISO 9004:2018. They allow for the development of comprehensive strategies that meet the needs of stakeholders in the region, as well as the application of mechanisms aimed at creating a synergistic effect from their interaction.

The main stage in building a quality management system in regional authorities is to describe the internal parameters of the system under study and to form a list of target indicators. From the point of view of economic security, the management entity must identify external and internal threats. External threats to the economic security of enterprises in the region include:

- the presence of competitive products on foreign markets;
- the predominance of raw materials in the structure of export products of enterprises in the region [4];
- the prevalence of capital outflow from the region to other regions (countries) over inflow;
- an increase in the region's external debt, as well as the size of subsidies and other interbudgetary transfers.

Internal threats are caused by the peculiarities of the resource base of the region's enterprises, as well as the degree of management efficiency at the state level. The main ones are [6]:

- insufficient investment and innovation potential;
- backwardness of the technological base, depreciation of fixed assets;
- low share of investments in scientific research of enterprises in the region;
- lack of diversification in the structure of the regional economy;
- social stratification of the population, decline in living standards.

Once identified, each type of threat must be assessed in terms of its degree of impact, probability of occurrence, and extent of influence on management decisions made in the region. Threat analysis must be conducted on the basis of openness and transparency. This approach is embedded in the research conducted by the UNIAN agency, which annually assesses the economic, social and environmental sustainability of enterprises in the region as part of its "fundamental efficiency" rating. The transparency of the selection methods and criteria adopted at the executive level of management decision-making allows all parties interested in improving the economic security of enterprises in the region to take into account as fully as possible the possible risks for enterprises in the region and to conduct a quantitative and qualitative assessment. The problem of ensuring the economic security of enterprises in the region has been studied by a significant number of scientists, each of whom offers their own interpretation of the assessment indicators. It should be noted that the first stage in developing a strategy aimed at improving economic security is the collection, processing and analysis of information that forms the basis for the study. This is followed by forecasting and assessment of the current social and economic situation of enterprises in the region in relation to the parameters of the economic security strategy. The final stage is the provision of timely and reliable information to regional authorities [4]. At the same time, effective monitoring can only be achieved if there is a comprehensive information base that allows

for the timely tracking of threats and assessment of the damage they cause to various components of enterprises in the regional system [3]. The economic security system at the regional level has its own characteristics in the development and implementation of individual areas of the strategy. According to [5], it provides for the presence and further improvement of the following components:

- legislative, executive and judicial authorities at the regional level;
- regulatory framework ensuring the implementation of economic security objectives in regional enterprises;
- system for monitoring external and internal threats to the economic security of regional enterprises;
- tools for assessing the level of economic security;
- a set of organisational, economic and legal measures to prevent threats and ensure economic security.

Effective management decisions aimed at achieving economic security for enterprises in the region are based on the formulation of assessment indicators, which may include between 12 and 50 indicators depending on the level of detail and research aspect. One of the most reasonable methods is the approach proposed by Ukrainian scientist I. I. Kravchenko [5], which involves the use of a definition such as 'projection'. In his work, the author relies on approaches to the formation of economic security indicators set out in previous studies, which allow the formation of aggregated macroeconomic correlation dependencies. According to Kravchenko, the total number of indicators that form the state of economic security at enterprises in the region should not exceed 35, with the "projections" he proposes – groups of indicators – numbering 11.

The projections of the system of indicators of economic security of enterprises in the region include [5]:

- macroeconomic development;
- industrial safety;
- food security;
- energy security;
- budgetary and financial security;
- human resources security;
- innovative development;
- social development;
- environmental development;
- foreign economic development;
- shadow economy.

It should be noted that this categorisation expands the parameters of economic security of enterprises in the region in terms of the stability of their development. Nevertheless, it is advisable to include the projection «shadow economy» in other groups of indicators: macroeconomic, social, foreign economic, budgetary and financial, since research into the causes, manifestations, monitoring and assessment of the dynamics of the shadow economy are based on the study of complex interrelated triggers of the country's socio-economic system. In our opinion, the "food security" projection also needs to be refined, as the methodology for calculating this indicator involves the use of a significant amount of statistical data, which may negatively affect the reliability of the results obtained. Moreover, the private indicators used to determine the level of food security also characterise other projections: macroeconomic and foreign economic development. In this regard, it seems appropriate to establish hierarchical links between economic security indicators by their levels (macro level, meso level) and

by content in accordance with the general objective. In addition to the scientific justification of the need to assess the country's economic security with the subsequent formulation of a list of applicable indicators, measures have been taken at the state level to organise control over effectiveness in this area. Thus, in order to implement the Decree of the President of Ukraine "On the Strategy of Economic Security of Ukraine until 2025", a procedure and methodology for monitoring the achievement of the goals of this document have been developed. It should be noted that, in accordance with the first stage of implementation of the Economic Security Strategy, optimal mechanisms for monitoring and assessing the state of economic security were developed in the period up to 2019. In this regard, the information base currently being collected is not fully relevant. The indicators provided by the State Statistics Service of Ukraine for the purpose of assessing the monitoring of the achievement of economic security goals are grouped into several areas: economic, social, foreign economic, production and innovation. The assessment is based on quantitative and qualitative indicators provided by executive authorities and other state structures: the State Statistics Service, the National Bank of Ukraine, the Ministry of Finance of Ukraine, the State Treasury, the State Fiscal Service, the Ministry of Energy and Coal Industry, the Ministry of Economic Development and Trade of Ukraine, and the Ministry of Internal Affairs of Ukraine. The list of indicators studied is adjusted every six years. Most of the indicators are provided based on the results of the reporting year, but some have a shorter sampling frequency. Economic security strategies are appropriate for the purposes of consolidated analysis and control. At the same time, it is necessary to differentiate the periods for providing static data due to the high degree of volatility of the external environment in terms of changes in the foreign policy situation, scientific developments, and social challenges. All this requires the introduction of a strategic process for achieving national security goals and the implementation of «weak signal management» tools based on continuous monitoring of external influences. From the perspective of providing an information base for assessing the implementation of economic security strategy goals, this manifests itself in the need to expand the list of indicators that are monitored on a quarterly and/or monthly basis, depending on the specifics of the indicator. One of the areas of implementation of the Economic Security Strategy is the development of the public administration system [2]. More specifically, this means increasing the efficiency of budget expenditures, including by expanding the functionality of the project approach to achieving state goals and objectives. In this regard, it is necessary to expand the methodology for assessing key performance indicators of public administration at regional-level enterprises by including monitoring of key economic security indicators in the assessment system. In simple terms, the KPI (Key Performance Indicator) system refers to a system of financial and non-financial indicators that influence quantitative or qualitative changes in performance results in relation to strategic objectives [1] qualitative form of assessment. The use of the KPI system allows for the harmonisation of the diverse interests of various participants in the regional system by developing detailed programmes for achieving individual indicators. The assessment of key indicators from the perspective of public administration

is carried out at the operational, medium- and long-term levels of management on an annual basis (if necessary, quarterly or semi-annually) and must take into account the characteristics and specifics of the organisation of public administration and the budget process [2]. Medium- and long-term assessments are necessary to make changes to the management process at regional-level enterprises in the event of unsatisfactory quality of state and municipal services provided to the population, or failure to meet the planned development indicators for regional enterprises specified in the programme documents. The system of key indicators is, in essence, a way of assessing the effectiveness of public authorities in improving the level of socio-economic development and achieving the overall goals of the national security strategy.

The activities of executive authorities at the regional level are assessed in accordance with Presidential Decree No. 68/2021 of 4 February 2021 “On the assessment of the effectiveness of senior officials (heads of senior executive bodies of state authorities of Ukraine and the activities of executive authorities of Ukraine)”. This document contains the indicator “Trust in the authorities”, which allows assessing the public’s evaluation of the achievement of national development goals at the level of the constituent entities of Ukraine. The effectiveness of the activities of senior executives and senior executive bodies of state power of the subjects of Ukraine is one of the factors ensuring economic security at the meso level, and, in our opinion, the relevant indicators should be used as indicators of economic security at the meso level. These indicators and their values determine the KPIs of the executive bodies of state power in the region from the perspective of state management bodies and, in this sense, characterise the socio-economic condition of enterprises in the region as a result of the management actions of the regional administration. To a certain extent, this approach correlates with the principles of economic security assessment, but it significantly narrows the information base for determining the directions for further improving the sustainability of the socio-economic development of enterprises in the region. Thus, when assessing KPI parameters, such important elements of economic security as the pace of innovative development, the entrepreneurial and investment climate, and environmental aspects are not taken into account. It is necessary to expand the list of parameters that constitute the KPI assessment system for regional executive bodies and correlate them with the economic security parameters set out in the Economic Security Strategy, as well as supplemented by scientifically based theoretical developments. Then, in a consolidated form, the system of indicators that assess the degree of achievement of key performance indicators of the region’s executive bodies will be the following list (Table 1).

Each of the seven groups of indicators has a breakdown of 5 to 8 indicators that, to varying degrees, characterise the degree of shadowing of the regional system, including from the perspective of corrupt links between individual participants in the management process at the subject and object levels. The threshold values for each indicator group must be determined by the relevant executive authority in accordance with international and national calculation methodologies. Taking into account regional differentiation, it is necessary to apply benchmarking principles, i.e. to evaluate the key achievements of regional

Table 1 – Economic security indicators as key performance indicators of the region’s executive bodies

Name of indicator group (Factors of economic security of enterprises in the region)	Frequency
Macroeconomic	Year, quarter, month
Production	Year
Innovation	Year, quarter
Social	Year, quarter, month
Environmental protection	Year, quarter
Foreign economic	Year, quarter
Budget and financial	Year, quarter, month

Source: compiled by the authors

enterprises from the perspective of their interregional competitiveness. The basis for comparison can be the results of the annual rating of the socio-economic status of enterprises in the regions, which determine the benchmark and outsiders. It is also necessary to improve the methodology for submitting statistical data in terms of the frequency of their provision, accessibility, relevance and comprehensiveness.

Conclusions. The study showed that the indicator method of identifying threats to the economic security of enterprises can be an effective tool for strategic regional management only if adequate resources are available. In the post-crisis period, the economic systems of the regions are in a state of heightened instability, accompanied by an exacerbation of socio-economic imbalances, heterogeneity of recovery processes and increased competition for limited resources. In such conditions, the role of systematic monitoring and analytical support for management decisions based on reliable, comparable and operational indicators is growing. It has been determined that the indicator method requires a coordinated structure of indicators grouped by key areas of economic security (macroeconomic, production, innovation, budgetary and financial, social, foreign economic and environmental), as well as the establishment of threshold values that serve as criteria for assessing deviations. At the same time, it is critically important to ensure resource support: human resources (availability of trained analysts), information (access to regular statistical and administrative data), technical (digital platforms for collecting and processing information), and financial (stable sources of funding for monitoring and evaluation procedures). The expediency of integrating the economic security assessment system into the KPI mechanisms of government and local self-government bodies is separately emphasised, which allows harmonising the interests of the state, business, public organisations and the population. This approach ensures greater transparency of management processes, accountability for achieving strategic goals and facilitates the transition from formal control of indicators to active risk management. Therefore, in the post-crisis period, the resource provision of the indicator method should be based on the principles of data openness, interdepartmental coordination, adequate organisational support and the digitalisation of information and analytical activities. The implementation of these approaches creates conditions for increasing the sustainability of enterprises in the region, strengthening their competitive positions and ensuring balanced socio-economic development.

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Стаття надійшла до редакції 14.05.2025