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STRATEGIES FOR STRENGTHENING BUSINESS ECONOMIC SECURITY WITH ACCOUNT TO GLOBAL FINANCIAL CHALLENGES

ABSTRACT

The study focuses on the algorithm of business behaviour under conditions of worsening of its economic security. The algorithm allows businesses to objectively assess the situation regarding financial threats and develop appropriate strategic measures to eliminate them. A system-situational model is proposed with financial actors to evaluate the tendencies of business players' elimination in the international financial markets. The purpose of the research is theoretical and applied approaches to developing strategies for strengthening the economic security of business in the context of the global challenges of the global financial system. To overcome the state of the economic security system imbalance, the dominant external and internal drivers are determined. It was proven that eliminating the negative impact of factors of global financial challenges can balance the system of economic security of business. In order to universalize the measurement of trends in the elimination of business players in international financial markets, a system-situational model was studied, which is based on the consolidation of systemic and situational perceptions of financial actors regarding the interpretation of financial information and adapted to the conditions of investor behaviour on the international financial market. In the course of the study, it was proven that eliminating the negative impact of factors of global financial challenges can balance the system of economic security of business, bring it to the newest stage of evolutionary response and ensure further sustainable financial and socio-economic development of business. The set of used scientific methods for strategizing balancing opportunities in the system of economic security and proposed empirical tools for eliminating negative factors of external and internal influences allow the creation of new scenario approaches to ensuring the strengthening of economic security of business.

Keywords: economic security, strategies, global financial challenges, sustainable development, business behaviour stratagems, complex systems

JEL Classification: G41, G21, G15, E62

INTRODUCTION

In matters of national security, each country mainly focuses on its legislation, which defines the relevant indicative economic figures. In particular, the legislation of Ukraine provides for various components of national security, which include public and military spheres, which means the involvement of all financial and economic capabilities of the state (Law of Ukraine, 2018). Apart from these components, the demographic, legal, genetic, criminogenic, psychological, spiritual and moral spheres of security are also separately distinguished (Ivstchenko, 2017). Among all the components of national security, the economic component has a fundamental importance since it determines the ability of the national economy to ensure competitive solid development, the ability to maintain the stability of civil society and its institutions, as well as sufficient economic, personnel and export-import potential of the country, to ensure the protection of priority economic interests from external and internal challenges and support socio-political stability in the country. The term "security" is the most comprehensive and system-wide, which on a large scale reflects the task of ensuring and strengthening the sustainable development of business by established priorities and national goals in an increasingly

globalized financial and economic system, within which not only significant contradictions are observed, but also threats to stable development and integrity of the country, state associations.

Moreover, there are almost no such aspects of business security that do not depend on the level of financial and economic security. Economic security is widely considered both in the scientific environment and among practitioners. Despite long and multifaceted research, this category has no single definition. In a general sense, the economic security of business is considered a state of security of the subjects of socio-economic relations at the macro-, meso-, and micro levels of management. Within the scope of the activity of a separate economic entity, we can talk about its activity, in which, under the conditions of maximally efficient use of available resources, its sustainable development is ensured, and the influence of all negative factors is neutralized (Zaichenko, 2021).

However, when it comes to economic security, one of its key segments is the financial one, which characterizes a stable financial state, the constant movement towards defined priority goals, equilibrium, and protection from actual and potential internal and external threats. It is modern financial global challenges that create imbalances in the financial systems of states, disrupt the sustainable development of separate regions, and require the search for qualitatively new financial instruments and technologies for the creation of new financial services that would ensure the effective implementation of national and regional interests and the balanced, sustainable development of the entire global financial system and individual countries, which is generally reflected in the formation of new (or modernized) strategies for guaranteeing business economic security.

LITERATURE REVIEW

The conducted bibliometric analysis (using the VOSViewer v.1.6.10 toolkit) confirmed that the number of publications dedicated to the study of trends in strengthening the economic security of business increased by 5 times over the last year, while the study of tools for maintaining economic security of various levels increased by 7. This made it possible to carry out clustering of international research networks and to highlight several strata of the most authoritative cited research groups in journals indexed by Scopus (Q1 and Q2) and investigate this issue.

The authors Brychko, M., Bilan, Y., Lyeonov, S., and Streimikiene, D. justified the approach to assessing the financial and economic security of subjects of various business sectors in complex and crisis conditions of economic development. The study analyzed the dynamics of financial indicators that comprehensively characterize the functioning of enterprises during their temporary placement (Brychko, et al, 2023). In the works of scientists Khovrak, I., and Chernenko, S., a mathematical model was created for assessing and forecasting the economic security of enterprises in crisis conditions, it is proposed to conduct a constant express analysis and forecast of the impact of the crisis on economic security using a standardized integral index. An algorithm for gradually increasing the relevance of the analysis of the level of economic security has been introduced (Khovrak, 2021). The authors Kievich, A., Panyusko, A. define the impact of structural changes on the system of economic security. A systematic approach to the assessment of the economic security of economic entities as a construction of an aggregated indicator is considered. The authors assume that the index of economic security is determined by comparing the volume of gross investments of the enterprise and the amount of resources needed to maintain the optimal indicator of economic security (Kievich, 2021). The work "Main Priorities of Strengthening the Financial Stability of Ukraine" empirically investigated the mechanism of influence of the progress of digital transformation of enterprises of the real economy on the overall productivity of factors (Luzik-Dubova, 2012). The use of panel data and the entropy method to measure the security index of territorial economies, as well as the impact of the development of the digital economy on regional energy intensity, are detailed in the work "Management of Competitiveness in the EU Member States: The Main Strengths and Weaknesses", which also contains instructions on the management of emergency situations by introducing anti-crisis management (Maris, 2022).

The work "Improvement of Controlling in the Financial Management of Enterprises" describes the dynamism of the external and internal environment of companies, which requires finding ways to increase the security of their activities (Mazur, et al., 2021). In the work "Intellectual Capital as a Factor Forming Economic Security of Enterprises in Society 5.0 WSEAS" it is emphasized that the future of effective entrepreneurship is a combination of synergistic entrepreneurial intentions. It is this approach that involves the formation of cognitive abilities in entrepreneurs to perform demanding and innovative activities (Mishchuk, et al., 2022). The authors of Nwaibe, C., Ogbuefi, J. and Egbenta, I. confirm the influence of the blockchain on the credit rating, revealed patterns that determine the features of risk assessment in business as a fundamental element contributing to the economic security of the enterprise, as well as conducting a comparative analysis risk assessment and management methods (Nwaibe, et al., 2022).

The authors of the work "The barycentric model of determining the sustainable growth determinants" deepened the methodological foundations and practical aspects of the functioning and management of economic systems in modern economic conditions, developed an economic-mathematical model of the economic security of economic entities in conditions of risk and uncertainty, justified the development of Ukrainian entrepreneurship in the context of European integration challenges (Vasilyeva, et al., 2022). The author's research (Likhonosova, 2023) was already aimed at identifying external and internal threats characteristic of the state of war, which critically affect the level of economic security of Ukrainian business; an analysis of the trends in the recovery of business activity of Ukrainian business was carried out and the possibilities of development and achievement of economic security by Ukrainian business were systematized. Other author's studies related to various perspectives for increasing the value of enterprises. The interaction between the digitalization of activities and the management of financial enterprises was experimentally investigated, testing the hypothesis that in the context of the pandemic, the CSR of financial enterprises is positively correlated with the digitalization of general management and human resources management (Zahariev, et al., 2023).

Luzik-Dubova, T., investigates economic security indicators that are under the influence of globalization shifts (e.g. monetization level, the amount of external and internal public debt as a percentage of GDP, the level of inflation, international reserves of the national bank, the deficit of the state budget (% of GDP), the value of bank loans in the national currency (percentage per annum), the level of dollarization of the economy, the balance of payments, income and state budget expenditures (% of GDP), the share of long-term bank loans in the total amount of loans, the level of the shadow economy (% of GDP) (Luzik-Dubova, 2012).

The scientific field still has questions that have not been sufficiently clarified and adapted regarding the perception of specific stratagems (Kutsyk, 2021; Kuznyetsova et al., 2021; Melnyk, 2012; Niekrasova, 2019; Maris, 2022). However, it is necessary to substantiate the adoption of optimal decisions based on specific stratagem approaches in any situation. At the same time, it is also necessary to take into account that in the conditions of the existing high instability of the modern globalized economy, the lack of complete information about the development trends of individual industries, markets, competitors, new technologies, etc., it becomes practically impossible to avoid mistakes in strategic choices, in particular in the direction of strengthening economic security at the level of the state, as well as its subjects. Therefore, the selective systematization of strategies for developing mechanisms for strengthening the economic security of business is an essential aspect for the study, consideration and utilitarian interpretation of the accumulated experience in this context, considering the positions of both business and state interests.

However, the existing studies are fragmentary and individual and do not form a systematic basis for the applied vision of new predictive and analytical tools for strengthening the economic security of business, taking into account the conditions of global financial challenges.

AIMS AND OBJECTIVES

The purpose of the research is theoretical and applied approaches to developing strategies for strengthening the economic security of business in the context of the global challenges of the global financial system.

The main task of the research is the methodological substantiation of the main areas of strategy for strengthening the economic security of business in the conditions of global financial challenges. For this, it is necessary to solve the following tasks: 1) to find out the priorities of the further transformation of the financial system of the national economy and to expand the idea of the palette of the economic system of modern society; 2) to develop the directions of a broad constructive movement in the depths of the financial potential of the country, in the properties of society; 3) to construct theoretical and methodological ideas about the further directions of strengthening the economic security of business, the possible progress of civilization as a set of multi-vector socio-economic development; 4) determine the role of financial institutions as the driving force of the institutional and economic evolution of society. Based on this, build a chain of "accumulated reasons" strengthening the economic security of business in the context of global challenges of the world financial system.

METHODS

The proposed research methodology is based on comparative statistical analysis, logical heuristic, graphic modelling, and extrapolation, which allowed to ensure the consistency and unity of the determined theoretical constructions and proposed

hypotheses. Mathematical modelling methods are used to determine specific factors that affect the complex integral indicator of business economic security. Graphical modelling methods are used to construct an algorithm of business behaviour under worsening economic security.

Program-targeted and strategic methods should play the leading role in developing a system of strengthening the economic security of businesses. These methods aim to achieve the country's national interests against global threats and are formalized in the country's national security concept. The processes of globalization and internationalization play a discrete role in changing the function, essence and meaning of financial support. As a result of the increasing processes of deregulation and globalization, the hypertrophied development of the financial sphere is taking place. This changes not only the essence of the financial market itself but gives it the status of supra-economic financial production, which has its unique technologies, laws, risks, etc. As a result, economic management tools are weakening, the income distribution scheme is being transformed, and many other fundamental economic security categories are changing meaning.

RESULTS

Modern researchers emphasize that the most significant global challenges and threats to the economic security of business (Hbur, 2018; Maxton, 2017; Detter, 2017; Friedman, 2017; Vasilyeva et al., 2022) are:

- Stochasticity of the world financial system, which is characterized by the imbalance of world trade indicators and investment flows between the world's leading economic clusters;
- Branching of world trade and financial markets for the relevant types of goods, works, and services;
- Increasing frequency of crisis (inflationary) phenomena in most spheres of the economy;
- The dominance of a particular circle of countries on the world trade and financial markets;
- The impact of cyber threats on the balance of socio-economic and political development of countries;
- Lack of financial resources for sustainable development.

As for Ukraine, the most dangerous economic internal threats should include (Hbur, 2018):

- reduction of a significant part of scientific and technological, industrial and intellectual potential, which was reflected in important positions and areas of scientific development and technical progress;
- the insignificant technological level of most branches of the economy, high operating costs of production, and low competitiveness of Ukrainian products;
- ineffectiveness of motivating and stimulating socio-economic processes in post-pandemic conditions;
- the deformed internal production structure and the production and personnel potential reproduction system.
- The main external economic threats to business in Ukraine should be identified separately, namely:
 - irrational export structure. Under conditions of Ukraine's entry into the World Trade Organization, this situation became even more complicated and deformed towards the export of unprocessed raw materials;
 - import dependence on many types of domestically produced products. It is dangerous for those industries that depend on the import of energy carriers, components for machine building, food products, etc.;
 - imbalance of migration flows outflows of intellectual and labour resources abroad;
 - imperfection of the customs policy, which has an impact on export control of foreign economic efficiency;
 - insufficiently developed state of financial, organizational, and informational infrastructure supporting competitive sectors of the economy; Which has an impact on the structure of Ukrainian exports;
 - vulnerability of the transport infrastructure refers to all types of transport, including road, railway, aviation, sea, river, etc.

One of the keys to strategizing the economic security of business against the background of global financial challenges is the recognition of the openness and complexity of financial systems. It is characterized by many interacting system elements (such as physical consumers, business structures, regional clusters, international production associations etc). As a rule, this interaction is non-linear, which indicates the multivariate behaviour of the system (Adizes, 2009). In particular, such systems behave dynamically rather than statically and probabilistically rather than deterministically. As a result, complex systems often exhibit surprising and even paradoxical behaviour. This is why similar systems are often barely predictable and practically uncontrollable.

Theoretical constructions were confirmed in the practical plane of Ukraine. In August 2021, Ukraine's Strategy for Economic Security until 2025 was approved (Decree..., 2021). It states that in 2019, Ukraine's economic security level was 43%, and according to the results of the first half of 2020, it was 41%. In particular, in 2019, the level of financial security decreased by 4% (compared to 2018) and amounted to 42%, and by mid-2020, this indicator decreased to 38%. In general, the indicators of all the main components of economic security are low. It provokes high risks of the manifestation of large-scale destabilizing phenomena in the development of the economy in the long term.

Today's understanding of stratagems is mainly based on those "tricks" (in their positive perception) that allow you to rationally structure the state of affairs, to focus on solving problems with a specific ability to evade the existing routine, to consider management processes through stratagem approaches (36 Chinese stratagems). To strengthen economic security in a global, national or regional aspect, it is necessary to be guided not only by the relevant economic values, financial capital, or property but also to possess the algorithms of stratagem actions. This will give advantages to those business structures that do not try to use old, well-known approaches but model their future in a non-standard way. It questions traditional rules of behaviour, uses their creative potential and creates advantages in innovation, actions and necessary steps. It is also relevant for developing business innovation management and ethical leadership of companies (Ozkan and Ardic, 2022).

Stratagems are ready-made techniques, strategic moves and solutions in difficult situations (Busel, 2009; Tiutiunyk, Kuznetsova, Spankova, J2021). Stratagems are used in organizational and management situations when a company's traditional resources are insufficient to obtain the planned result. The advantages of using stratagems are that they are universal and can be used in various management situations. That is, stratagems are a finished product in a form close to schemes. At the same time, stratagems have characteristic features, one of which is a high level of abstraction. However, stratagems can also be considered a general disciplinary tool; they are not limited to any one branch of knowledge.

At the same time, stratagems have a rather specific and even conflicting nature. A strategic approach to strengthening economic security is through the prism of conflict, confrontation of economic benefits and advantages of different business structures. That is, stratagems are focused on solving conflict tasks. They are in demand in military, commercial, political, and interpersonal confrontations. Therefore, the stratagems very accurately correspond to the applied task of ensuring financial stability by taking into account the positions of the state and business entities. They can also become part of the financial philosophy and contribute to developing and implementing the constitution of values in business (Njegovanović, 2023; Njegovanović, 2022; Harshad, 2022).

The selection of the existing 36 Chinese stratagems made it possible to adapt them to six categories, depending on the technologies and methods of use (16 cornerstones..., 2010):

- Masking strategies that try to reveal the existing reality;
- Stratagems-mystifications that assure the existence of non-existent reality;
- Exposing stratagems that help reveal complex reality;
- Stratagems for obtaining benefits, which serve to use a coincidence of circumstances that were created independently (or that happened without one's participation);
- Linkage of stratagems, when two or more cumulative and consecutively used strategies lead to the achievement of the set goal;
- Escape strategies that serve to protect oneself and avoid a dangerous situation.

If we take into account the purpose of using stratagems (namely, the use of some cunning to one's competitors), then from an ethical point of view, four categories of cunning should be distinguished (16 cornerstones..., 2010):

- Stratagems of loss, where the detrimental, destructive, selfish moment of behaviour prevails (Druzhyhina, 2017). As a rule, these are criminal strategies in the field of economy and finance.
- Service stratagems: they are aimed at constructive goals that should underlie their implementation.
- Joke stratagems: here, trickery is used to reduce the seriousness and use more real-life elements in the activities of business structures. In economics, joke stratagems have not yet been sufficiently studied, especially in advertising, including the interpretation of financial information.
- Ethically hybrid stratagems: where both destructive and constructive actions can prevail. Such schemes are successful as long as no one's behaviour changes. After all, stratagems should be used only based on ethically impeccable goals and motives.

Adapted management stratagems for strengthening the economic security of business should determine prospective levels of global financial risk and factors that should be monitored, controlled and managed, considering certain deviations from planned indicators (Vasilyeva et al., 2013). Therefore, the study aims to develop a high-quality applied toolkit for strengthening the economic security of business, considering the risks of global financial changes and the interests of all participants. The results of the study, in aggregate, are intended to ensure the unity of modern stratagem approaches to the activities of business structures and the implementation of management tools for strengthening economic security in the current conditions of the development of the global economy.

As for the strategies for strengthening the economic security of business, on the one hand, they should provide opportunities for the effective functioning of business. On the other hand, they should be a component of the economic security strategies of the higher level – regions or the state. Of course, each subject has its own unique approaches to forming strategies for strengthening economic security. The effectiveness of their implementation depends on the optimal (balanced) use of material, technical and financial resources, business management structure, state and regional support for business entities and the legal framework for their operation. That is, the formation of a strategy for economic strengthening can be equated to the choice and justification of the profitable and practical elements (Ivonchak, 2020):

- financial support, namely strategies: self-financing, lending, budget financing, lease, and investment, which involve avoiding losses and negative impacts on the economic security of business entities of selected areas of activity, the most efficient use of financial resources, achieving the highest level of profit and profitability production (Kaya, 2023);
- personnel support, which involves the selection of personnel; control over the work and behaviour of employees; ensuring the needs and interests of personnel to effectively use personnel potential, preventing the turnover and outflow of highly qualified employees;
- information support, which provides for the availability of its information system, publicly available state information resources, specific organizations and institutions, and global information networks to present the real situation that occurs in the surrounding business environment, assess the socio-economic and political situation in the country (region), trends in the development of national and global competitive sectors of the economy (Skrynnyk, 2023);
- scientific support, namely, it involves the creation of new business protection technologies, the study of modern trends and prospects for the development of the industry in which the business entity operates;
- legal support, which provides for the preparation of legal acts, regulatory and methodological documents and legal protection of the interests of the business entity, and creation of business documentation on non-disclosure of commercial secrets.

An important issue in strengthening the economic security of business entities is multilevel interaction, the relationship between different levels of social phenomena and financial and economic relations. It forms the super space of the financial and economic system and cannot be fully considered. Multilevel interaction is a complex process in which behaviour at the individual level generates higher-level structures (bottom-up), which feed back to the lower level (top-down), sometimes both directly and indirectly. On the one hand, it can lead to the discovery of new relationships and mechanisms of balanced economic growth and development in general. At the same time, due to methodological gaps, there is still a serious threat to the security of the financial and economic system of the country as a whole and may carry serious social problems, manifested in the degradation of institutional responsibility, the revival of the wisdom and culture of the crowd, which is easily controlled in the best interests of individual countries.

Many scientists from different countries talk about the role of social aspects of perception in developing the financial basis of economic security (Fukuyama, 1999; Khovrak, 2021; Kievich, 2021). A logical continuation of these studies is the study of the dynamic characteristics of the network, the modelling of risk propagation channels through the network, the interdependence of the financial stability of business entities and the tendency to self-reinforcement, as well as the presence and scenario features of the cascading effect of bankruptcies. Currently, there is no active toolkit for network multi-stage planning and management of activities of national financial and credit institutions.

Considering the increasing importance and dependence of the financial and banking system on the dynamics of world markets, the lack of national regulatory bodies with complete operational information on the transformation of the financial and credit network is a significant threat to all business entities' financial and economic security. At the same time, it should be noted that with such a significant growth of the financial sector, the volume of trade in financial assets and credit portfolios is not accompanied by a proportional increase in production and trade in goods. There is a significant speculative financial asymmetry, which can generate even greater systemic risks and crises.

Therefore, the need for strategic modernization and change of the general paradigm of economic security management approaches to identifying threats and systemic risks, which due to the emergence of new properties of the system (self-

reinforcing effect, interdependence and bankruptcy of cascades), can no longer be based on local methods and mechanisms based on divergent interests, is ripe—business entities.

The basis of the strategy of economic security and the condition for the sustainable development of the business environment should be the construction of a system for modelling the collective behaviour of business structures as an integral element of the social supersystem, resulting from the connection between individuals, households, institutions, business structures-participants of this market and goods, financial products and other conditions – the parameters of their interaction (Druzhynina, 2020; Brychko et al., 2023).

Financial security directly depends on the stock market's stability, while the last is dependent on economic and political stability (Bielykh et al., 2023). Also, various combinations of economic, innovative and marketing determinants can significantly affect a business's financial security and sustainability (Taghieva and Tiutiunyk, 2022).

This modelling system should become the basis of national security policy and global international policy in financial and economic networks, which will significantly increase its predictability and, as a result, the degree of immunization against the ever-increasing virality of the global financial and economic system and will contribute to the management of changes in these systems in a positive trend.

To strengthen the economic security of business, it is most appropriate to develop and implement strategies that include measures in the following areas (Vasylytsiva, 2019):

- *The development of the institutional basis of economic security.* It provides for the growth of the leading quantitative and qualitative indicators of business development, the simplification of permits and the licensing system of various areas of activity, the reduction of the shadowing level and monopolization of the economy, the elimination of discrimination in relations between various business entities and levels of business management (Kaya, 2022a; Kaya, 2022b);
- *Strengthening financial security.* It involves the development of business promotion systems and the development of an optimal tax policy for business development;
- *The development of the export potential* of business by the doctrines of the development of the national economy of Ukraine (Ukraine 2030, 2017);
- *Improvement of the business investment environment*, the level of protection of investors' interests and stimulation of investments in fixed capital;
- *Provision of the scientific and technological component* of business development, modernization of the technical and technological base and stimulation of innovative business activity, and improvement of the system of protection of their rights to property, in particular, intellectual property (Mishchuk, 2022; Seguer and Hasna, 2022);
- *Strengthening the production component of economic security*, production efficiency, and economical use of resources; reducing energy consumption; creating a system of equal business access to economic resources, public procurement, and communal property (Wang et al., 2023);
- *Strengthening the energy component of security*, namely: supply of fuel and energy resources, level of material and technical armament, increase of investments in the fuel and energy complex, reduction of the level of energy intensity of GDP;
- *Improvement of the environmental component of safety* by increasing the implementation of low-waste and environmentally friendly technologies, the level of use of secondary resources, optimization of the payment of environmental fees and compliance with the principle of proper compensation for pollution of the natural environment.

According to the given characteristics of the economic security of the business, the strategy (SES) can have a model of implementation – function (f), which is related to the strengthening of specific indicators, which are given in Formula 1:

$$SES = f \{IB, F, E, IC, IAS, PA, EPB, LEB\}, \quad (1)$$

where *IB* is a complex indicator that characterizes the institutional level of economic security of business and is characterized by a set of indicators (Formula 2):

$$IB \uparrow = f \{N_b \uparrow, I_b \uparrow, P_d \uparrow, D_e \downarrow, K_r \downarrow, N_d \downarrow, M_e \downarrow, T_{ch} \downarrow, T_l \downarrow\}, \quad (2)$$

where N_b is the number of active business entities per 1,000 people; I_b is the ratio of the number of newly created business structures to those that have ceased operations; P_d is the share of profitable business entities; D_e is the level of shading

of the economy to GDP; K_r is the coefficient of systemic risk existing in business processes; N_d is the number of discriminatory actions arising in relations between business entities at all levels of management; M_e is the level of monopolization of the economy; T_{ch} is the average term for creating a new business structure; T_l is the average term for obtaining licenses and permits and property registration.

The direction of the arrows (\uparrow) in Formula 2 indicates the tendencies to increase or decrease the effect of the relevant factor as part of the defined function of economic security formation, which should be targeted by specific strengthening measures.

F is the complex indicator (formula 3) of the level of financial security of business entities:

$$F \uparrow = f \{P_1 \uparrow, C_m \uparrow, K_1 \downarrow, K_{mf} \uparrow, L_i \downarrow, P_s \uparrow, D_s \uparrow\}, \quad (3)$$

where P_1 is the level of protection of legal rights of business entities – creditors and borrowers; C_m is the average level of the interest rate on loans; K_1 is the conditional average total liquidity ratio; K_{mf} is the conditional average coefficient of financial independence; L_i is the inflation rate; P_s is the indicator of "insurance density"; D_s is the dynamics of enterprise capitalization.

E is the complex indicator (Formula 4) that characterizes the level of export potential of business of the national sector of the economy:

$$E \uparrow = f \{K_{ei} \uparrow, T_e \downarrow, E \uparrow\}, \quad (4)$$

where K_{ei} is the coefficient of the ratio of export growth rates to import growth rates; T_e is the duration of export operations; E is the ratio of the volume of exports to GDP; IC is the complex indicator (Formula 5) that characterizes the level of investment attractiveness of business entities:

$$IC \uparrow = f \{I_i \uparrow, A_1 \downarrow, I_a \uparrow, I_p \uparrow\}, \quad (5)$$

where I_i is the level of protection of investors' interests; A_1 is the depreciation level of fixed assets; I_a is the ratio of the volume of investments to the value of fixed assets; I_p is the ratio of net growth of direct investment to GDP.

IAS is the complex indicator (Formula 6) characterizing the level of innovative activity and ensuring the scientific and technological component of the economic security of business entities:

$$IAS \uparrow = f \{P_n \uparrow, B_i \uparrow, K_{sa} \uparrow, N_{ia} \downarrow\} \quad (6)$$

where P_n is the share of new types of products and services; B_i is the share of business entities that implement innovations; K_{sa} is the coefficient of inventive activity; N_{ia} is the number of cases of illegal use of property rights.

PA is the complex indicator (Formula 7) that determines the level of production development:

$$PA \uparrow = f \{P_p \uparrow, M_p \downarrow, S_p \downarrow, E_o \uparrow, L_{ba} \uparrow, L_{mt} \uparrow\} \quad (7)$$

where P_p is the productivity; M_p is the turnover of personnel; S_p is the consumption capacity of products; E_o is the profitability of operating activities; L_{ba} is the level of business activity; L_{mt} is the level of development of the material, technical and technological base.

EPB is the complex indicator (Formula 8) characterizing the level of energy supply of business entities:

$$EPB \uparrow = f \{L_{er} \uparrow, L_{ler} \downarrow, E_p \downarrow\}, \quad (8)$$

where L_{er} is the level of provision of fuel and energy resources; L_{ler} is the level of wear and tear of fixed assets of the fuel and energy complex of business entities; E_p is the energy intensity of production.

LEB is the complex indicator (9) of the level of environmental friendliness of business entities:

$$LEB \uparrow = f \{L_{ept} \uparrow, L_{sur} \uparrow, L_{fpt} \uparrow\}, \quad (9)$$

where L_{ept} is the share of introduced low-waste and environmentally friendly technologies; L_{sur} is the level of use of secondary energy resources by business entities; L_{fpt} is the share of actually paid environmental taxes in the total amount of taxes.

As a result of overlapping mechanisms of the interdependence of financial stability of business entities and tendencies to self-reinforcement of security positions, certain trends of changes in the economic security of business arise (Mazur, 2021). First, the financial soundness of a business entity (measured, for example, by the ratio of equity to total assets) depends on the financial soundness of the business entity with which it interacts and thus depends on the state of the relevant business entity in the contract system. Such interdependence is a common mechanism when credit relationships between business entities are complex. For example, suppose business entity A provides a loan to business entity B. In that case, the value of assets of business entity A affects the indicator of the financial stability of business entity B and, therefore, its financial stability. The same dependence may arise when concluding an insurance contract. For example, when business entity B insures business entity A against a loss that may occur due to a decrease in the value of shares of business entity C. If the value of shares of business entity C decreases, and business entity B at that time is in dire straits, then the stability of business entity A decreases precisely because there is a threat of non-payment by business entity B of the promised insurance indemnity.

On the other hand, a paradoxical effect is observed: temporary negative phenomena with financial stability stimulate the manifestation of positive feedback. In other words, the financial difficulties that the business entity has already overcome in the current period will likely lead to additional difficulties in the future and vice versa. This effect can occur in at least two situations. First, suppose that business entity A is under the influence of an adverse event due to the loss of value of individual securities that are part of its assets. If the force of this influence is large enough that some creditors of business entity A demand to return their funds, then business entity A must urgently sell part of the securities to pay off the debt. If the securities are sold below their market value, the amount of assets on the balance sheet decreases more than the amount of liabilities. At the same time, the financial leverage of business entity A is inadvertently increased. Such a situation can cause a gradual increase in losses and a decrease in financial stability.

Another simulation of the situation: when business entity A is adversely affected, its creditor, business entity B, imposes stricter credit conditions in the next period. It is common knowledge that lenders increase their fees for external financing when the borrower's financial situation deteriorates.

From the point of view of business entity, A, this is a cost, so it will negatively impact its fortunes in the next period. In both situations, a decrease in persistence in period t increases the probability of a decrease in period $t+1$. The dynamic model does not reflect the interaction of interdependence and self-reinforcing financial stability.

Suppose, for example, that business entity A is under the influence of an adverse event, resulting in its financial condition becoming increasingly shaky. His creditors (business entities B and D) will bear some of this adverse impact, and their financial stability will thus be reduced (interdependence). As a result, they will not be able to continue to provide credit under the conditions mentioned above. Still, they will limit the external financing of business entity A or increase the interest rate set for business entity A. In other words, the credit facility will continue to be provided on less acceptable terms, which will further cause a decrease in the net value of assets and, therefore, a deterioration in the financial situation of business entity A: at the level of an individual business entity, an unstable financial situation acts as a feedback loop (tendency to self-reinforcement).

Moreover, business entity A is, in turn, a creditor for other business entities (F and E). In a difficult financial situation, business entity A will limit the amount of credit or set higher interest rates for its borrowers, negatively affecting their financial situation (again, mutual influence). Thus, a decrease in the stability of the financial condition spreads throughout the credit network; that is, a particular "snowball effect" of worsening financial stability conditions appears (Tereshchenko, 2021).

On the one hand, interdependence is a necessary condition for the distribution of risks: the more business entities in the credit network and the higher the capacity of their communication, the more influential the distribution of risks. On the other hand, their connection can activate a self-reinforcing mechanism. If the concentration of risks in the network becomes significant, credit networks become increasingly weak and vulnerable to future shocks, increasing the probability of the risk of a systemic crisis.

Thus, each of the interdependent business entities of the financial network will also be more susceptible to bankruptcy, and through a series of joint defaults in a tightly connected network, increase the probability of causing the risk of system failure of the entire network as a whole (Figure 1).

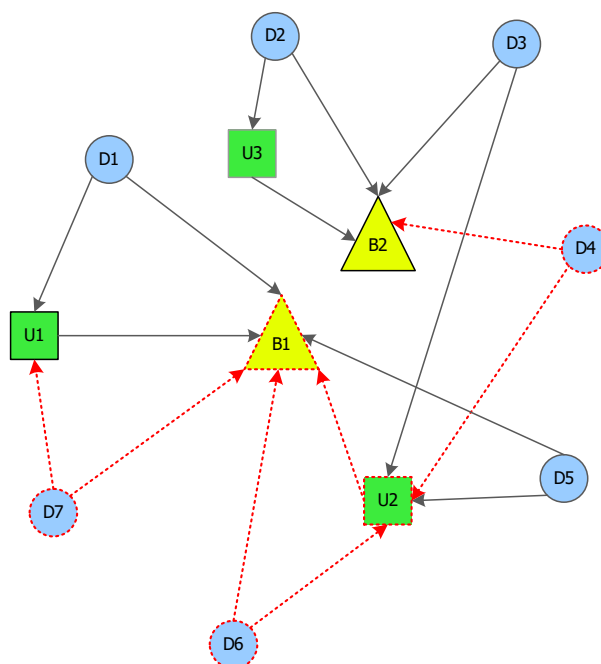


Figure 1. Algorithm of business behaviour under conditions of worsening economic security.

In Figure 1, business entities D6 and D7 are bankrupt and in default, so financial conditions and creditors deteriorate. In this case, business entities U2 and B1 also have the highest probability of bankruptcy, and business entities U1 and B2 will function until their partners fail.

In the given example (Figure 1), the channels (impulses) of the spread of worsening economic security and the probability of bankruptcy are:

- the financial insolvency of subjects D4 and D6 provokes the default of subject U2;
- the financial insolvency of subjects D6, D7 and, in particular, U2 provokes the default of subject B1;
- the deterioration of the financial conditions of U1 and B2 may lead to an overall increase in the interest rate of the entire financial and credit system.

Based on this, the high probability of bankruptcy is both the cause and the effect of high interest rates. The degree of spread of financial difficulties and the degree of sensitivity of subjects to shocks experienced by them directly depend on the density of the economic network. With increasing connectivity, the ability to absorb shocks in the credit system concerning the spread of risks through the network tends to zero.

As one of the options for displaying such parallel dual behaviour, consider banking institutions that act as subjects of the economic network and business players in the financial services market. At the same time, they simultaneously reflect the functions of both a catalyst of possible crisis phenomena in the system of economic security and an actor experiencing the same crisis phenomena. In this study, we interpret the banking institution as a unit of horizontal scaling of the network business structure, which must implement specialized functions in the financial and credit mechanism of the state's economic security. The essence of the economic security of the banking system as a whole is to ensure optimal use of its resources to prevent threats to commercial banks and create conditions for stable, efficient activity and maximization of their profits. Accordingly, the management of the economic security of a separate banking institution includes a set of methods and techniques that ensure its ability to avoid economic threats and maintain the sovereignty of the national economy, and its stability. In other words, the issue of ensuring the economic security of a separate banking institution, as a subject of the national economic system, should be considered within the framework of the concept of risk management aimed at identifying, measuring and reducing potential losses in the banking institution's activities.

However, consideration of security aspects related only to the manifestation of real and potential malicious threats cannot be considered exhaustive. In the activity of any banking institution, there is always a possibility of non-fulfilment of its

obligations to counterparties in full and on time due to discrepancies in the amounts of receipts and disbursements by terms and currency. Therefore, the main task of Ukrainian banking institutions in the near future will be the transition from an extensive growth strategy to an intensive development strategy. Priority will be given to increasing the efficiency of the use of available resources, activating the accumulated "growth reserves".

The search for ways to increase the effectiveness of the banking institution as a subject of the national economic security system lies in the plane of studying global trends in the development of banking business and their adaptive projection on Ukrainian realities. The following global trends can be distinguished: the use of modern information technologies, the development of traditional and the introduction of new ways and methods of interacting with customers and providing them with banking services: expanding the network of supermarket banks, installing multimedia kiosks, and implementing a lean production system. The transformation of bank branch networks into high-tech differentiated systems for selling money products allowed US banks to transfer the functions of branch management to administrative centres, reduce the rent for the occupied space, and reduce maintenance costs but also had to reduce the number of personnel.

Thus, the issue of primary importance for a banking institution, as a business player in the system of economic security, is the retention of old and attraction of new customers. According to Western analysts, retention of existing customers is only 25% of the cost of attracting new ones. About 78% of customers refuse banking services mainly because of unsatisfactory tariffs and the low quality of the offered services. Therefore, it is inevitable to predict the transition of the banking service in the vast majority to online service using various technical means, machine learning and artificial intelligence.

In this regard, there is a new task of finding approaches for early detection of threshold values of the system. The degree of interdependence of the network and tendency to self-reinforcement of business is critical for the entire economic system and critical transitions when a sudden polar uncontrolled shift of the system from one state to another. In this regard, there is a new task of finding approaches for early detection of threshold values of the economic system, in which the degree of interdependence of the network and the tendency to self-reinforcement of the business environment as a whole is critical for the entire economic system and moments of critical transitions, at the onset of which a sudden polar uncontrolled shift of the system from one state to another.

Other factors that become critical for the economic system are the formation of new globalization economic barriers and migration challenges that create a situation of elimination of individual business players from the world market. Such a situation is facilitated by the loss of economic trust in business regulators, maintaining a position of inactivity, lack of motivation, and disappointment of financial players.

To universalize the measurement of trends in the elimination of business players in international financial markets, it is proposed to consider one of the possible models of managing a dynamic object: a system-situational model. Our task is to adapt the system-situational model to the specified conditions. These conditions predict players' behaviour in the financial market, which is based on consolidating systemic and situational perceptions of financial actors and interpreting received financial information (Likhonosova, 2018).

Based on the fact that an invariant is a value, a ratio that does not change under certain transformations (Busel, 2009), we define the system representation of business players through the corresponding system-forming invariants:

1. threshold invariants of resources:
 - time (T) – a finitely non-reproducible resource, which is given by stationary boundaries (past, current and future) of time, arranged accordingly $T^p < T^n < T^f$;
 - financial knowledge (Kn) is a highly inexhaustible resource, organized about time. So, $Kn(T^p) \leq Kn(T^n) \leq Kn(T^f)$ in the assumption that knowledge accumulates over time but also loses its value;
2. threshold invariants of development:
 - limit of predictability (R^p) of the behaviour of international investors, which is determined by the level of capacity of financial information (an environment of perfect investment competition);
 - limit of the threat to economic security (R^k), the achievement of which leads to the premature disappearance of business activity and investment opportunities of business players or a large-scale transformation of their sphere of activity. To measure the direction of the behaviour of international investors, an indicator of the possibility can be the manifestation of investment passivity and disdain for constantly updating one's financial knowledge of business players.

It should be noted that the given threshold values have the values of system-forming invariants in a specific defined time interval. In addition, they can remain constant for any changes in other characteristics of international financial business players.

Therefore, the presented system image indicates the existence of monitoring limits and timely response to the behaviour patterns of business entities on the financial market. This involves using a mechanism for regulating the direction of investment actualization in the financial market.

The situational image of the behaviour of business players on the international market can be reflected through the definition of their essential properties in the dynamics of the past (T^P), current (T^I), future trends (T^F) and target (R^{ts}) states, which are set by static time limits (Likhonosova, 2018).

The combination of system and situational representations into a single concept of interpreting the behaviour of business players on the international market is possible through the definition of system-forming invariants for a specific static time interval, for example, T^P : $R^L(T^P)$, $R^K(T^P)$ and the definition of situational states for a specific moment in time in the corresponding static intervals (Formula 10):

$$t_i \in T^P \quad P^M(t_i \in T^P), P^P(t_i \in T^P), P^T(t_i \in T^P), P^I(t_i \in T^P), \quad (10)$$

Such an interpretation makes it possible to form a problem-diagnostic algorithm for predicting the behaviour of international business players in the plane of financial markets.

A problem in this algorithm should be understood as a negative deviation of certain of the listed situational states from the desired state (strategically, this state is adequate to the state of perfect forecasting of the behaviour of business players on the international market) at one or another moment of the corresponding static period ($t_{\kappa} \in T^P$).

In general, a problem-diagnostic algorithm can be represented in the context of mathematical modelling as a system of subsets of Cartesian products of system-forming invariants (Formula 11):

$$\{(P^D P^K)\}^2 \subseteq Z^{inv} \quad (11)$$

And sets of situational temporal states per target state (Formula 12):

$$\{(P^M, P^P; P^T \times P^I)\} \subseteq Z^{sit} \quad Ta \quad Z^{inv} \times Z^{sit} \quad (12)$$

From here, you can calculate (Formula 13):

$$R_1 \subseteq \{(P^D \times P^K) \subseteq (P_1^D, P_1^K), \dots, (P_j^D, P_j^K)\}, \quad (13)$$

Where: R_1 is the set of problems of forecasting the behaviour of business players on the international market in the dynamic plane of financial markets; P_1^D, \dots, P_j^D is the set of values (quantitative or qualitative) of the system-forming variables of the perfection invariant; P_1^K, \dots, P_j^K is the set of values of the system-forming variables of the invariant of the threat to economic security; P_j^D, \dots, P_j^K is the problem of policy expansion and the emergence of new financial markets with new properties for potential investors, that is, the problem of determining the limit of perfection P_j^D , and the limits of threats to economic security P_j^K , the behaviour of business players on the international market with the studied variable P_j . For example, the number of business players in the financial market who come out with their offers simultaneously for several market positions.

R_2 is the complex of strategic and dangerous problems of disrupting the behaviour of business players during financial crises (such as pandemic conditions) (Formula 14).

$$R_2 \subseteq Z^{inv} \times Z^{sit} = \{(P^D \times P^K) \times (P^M, P^P, P^T, P^I)\} = \{(P^D, P^M), (P^D, P^I), (P^D, P^T), (P^D, P^I), (P^K, P^M), (P^K, P^I), (P^K, P^T), (P^K, P^I)\}, \quad (14)$$

where the first four two-element sets make up the class of strategic problems of financial regulation at the international level; the last four two-element sets are a class of strategic problems of threats to economic security and the destruction of traditional financial chains, correspondingly, a sharp change in the behaviour of financial players (Formula 15).

$$R_3 \subseteq (P^M, P^P, P^T) \times (P^L) = \{(P^M, P^L), (P^P, P^L), (P^T, P^L)\} \quad (15)$$

where R_3 is the class of tactical target problems of targeting the financial market in the direction of responding to the different behaviour of financial players; (P^M, P^L) is the subclass of targeted general problems of the functioning of the financial market in the direction of regulating the possible elimination of business players in the past tense; (P^P, P^L) , is the subclass of targeted current problems of entry of new business players into the financial market; (P^T, P^L) is the subclass of preventive target problems of implementing the business position of a market player.

A necessary condition for determining classes, subclasses and individual problems of overcoming threats to economic security is the determination (qualitative or quantitative) of systemic and situational features inherent in the behaviour of the leading business players in the financial market.

Using the proposed idea and realizing the level of possible threatening elimination of business players from the planned indicators of the financial market, it is possible to determine the trajectory of further development of both a separate business player and the corresponding segment of the financial market.

DISCUSSION

Modern researchers emphasize that the most significant global challenges that pose actual threats to economic security indicators (Hbur, 2018; Maxton, 2017; Detter, 2017; Friedman, 2017) are:

- the stochasticity of the world financial system, which is characterized by the imbalance of indicators of world trade and investment flows between the world's leading economic clusters;
- the branching of world trade and financial markets for the relevant types of goods, works and services;
- increasing frequency of crisis (inflationary) phenomena in most spheres of the economy;
- dominance of a certain circle of countries on world trade and financial markets;
- shortage of financial resources for sustainable development.

Regarding Ukraine, modern researchers (Hbur, 2018; Skrynnyk, 2023) include the following as dangerous economic internal threats:

- education of a significant part of scientific and technological, industrial and intellectual potential, which was reflected in important positions and directions of development of scientific and technical progress;
- the insignificant technological level of most branches of the economy, high operating costs of production, and low competitiveness of Ukrainian products;
- ineffectiveness of motivating and stimulating socio-economic processes in post-pandemic conditions;
- the deformed structure of internal production and the system of reproduction of production and personnel potential.
- In agreement with studies (Hbur, 2018; Maxton, 2017; Detter, 2017; Friedman, 2017), for Ukraine separately, the main external economic threats to business should be identified:
- irrational export structure, and in the conditions of Ukraine's entry into the World Trade Organization, this situation has become even more complicated and deformed towards the export of unprocessed raw materials;
- import dependence of many types of products produced domestically, including strategic goods. It is especially dangerous for those industries that depend on the import of energy carriers, components for new construction machinery, food products, etc.;
- imbalance of migration flows outflows of intellectual and labour resources abroad;
- imperfection of the customs policy, which has an impact on export control of foreign economic efficiency;
- being in an insufficiently developed state of financial, organizational and informational infrastructure supporting competitive sectors of the economy, which then affects the volume and structure of Ukrainian exports;
- vulnerability of the transport infrastructure, which refers to all types of transport, including road, railway, aviation, sea, river, etc.

The results of the current study correlate with relevant publications (Kaya, 2023; Khovrak & Chernenko, 2021; Kievich & Panyusko, 2021) in terms of determining the impact of global financial crises on the strength of economic security, namely the need to modernize the criteria for ensuring the system of economic security of business, but these publications do not contain results regarding the system of criteria, the use of which allows to consistently determine the dominant external

and internal influence on the functional components of economic security of business, as proposed in the current study. There is overlap with publications (Kutsyk & Kovtun, 2021; Maris, 2022). regarding the strategic context of business exit to foreign markets in the conditions of globalization. However, this study proposes a model of system-situational universalization of financial actors, which will make it possible to determine the trends and consequences of the elimination of business players in international financial markets, and therefore the corresponding focus of the study shifts to the definition of a framework system solution that will ensure the universalization of alternatives to strategic solutions for ensuring economic security under conditions of global financial challenges. There is a correlation with publications (Mishchuk et al., 2022; Njegovenović, 2022) regarding the definition of the leading role of social capital as a factor in the formation of business economic security. However, these publications do not contain analysis and interpretation of the behaviour of investors on the international financial market, which in this study allowed the formation of a chain "from accumulated reasons" of strengthening the economic security of business in the context of global challenges of the world financial system.

The study shows that in order to overcome the state of imbalance of the economic security system, a clear system of criteria is necessary with the possibility of consistently determining the dominant external and internal influences. This opinion is also shared by such researchers as Njegonovović (2023), Ozkan et al. (2022); Shaulska et al. (2021).

In contrast to the existing ones, this study proposes an algorithm for business behaviour in conditions of deterioration of its economic security, which allows to identify the consequences of the elimination of business players in international financial markets. This algorithm can be considered by relevant institutions when developing strategic plans for the security state and indicators for guaranteeing the economic security of business. Thus, the results of the current study are broader and more detailed, with recommendations for the consolidation of systemic and situational views of financial actors regarding the interpretation of financial information to the conditions of investor behaviour in the international financial market. Using the proposed idea and realizing the level of possible threatening elimination of business players from the planned indicators of the financial market, it is possible to determine the trajectory of further development of both a separate business player and the corresponding segment of the international financial market.

CONCLUSIONS

To sum up the above studies, it should be stated that economic security is a state in which it is necessary to create adequate conditions for the long-term development and growth of the business, the well-being of its employees and its functioning in the environment. In the course of the theoretical generalization and empirical verification of the system-situational model, which establishes the connection between the trends of the financial market and the tendencies of the behaviour of business entities, a significant influence of threshold invariants of resources was revealed. Such a phenomenon can cause a heterogeneous nature of market fluctuations, which increases the relevance of strategizing the relevant indicators of the financial market and can be tracked using the adaptation of mathematical economics methods while providing trajectories of the formation of positions of sustainable, balanced development.

Creating a system of continuous monitoring of external and internal threats at the level of business entities will provide an opportunity to identify the causes and consequences of adverse changes in economic security. In the future, such a mechanism will ensure the sustainable development of the national economy, allow the formation of new competitive advantages of subjects in the domestic and foreign markets, increase their incomes, and improve the population's quality and standard of living. Strategic directions for strengthening the economic security of business should be: improvement of institutional parameters of business activity; strengthening of financial indicators both at the level of the country (region, separate local territory) and at the level of the subjects themselves; development of the export potential of business entities; improving the business investment environment; provision of the scientific, technical and technological basis of business activity; strengthening the production component of economic security; strengthening the energy independence of business through the introduction of energy-saving technologies in production and management activities; improving the ecological level of production.

Strategic approaches to strengthening economic security make it possible to calculate possible deviations from planned indicators of economic security. It will also allow you to use your own and other types of resources, reduce financial risks, form a reserve of financial stability, and resist negative economic phenomena. Achieving indicators of strengthening economic security is possible only by using elements of strategic thinking and foresight and timely response to changes in business entities' external and internal environment.

The study identified the most critical factors of all economic entities' emergence and spread of financial difficulties. Such factors are confirmed by the results of the reactive behaviour of businesses in the conditions of worsening economic

security and activation of impulses to spread the probability of bankruptcy. A system of criteria is proposed to overcome the imbalance of the economic security system. Using such criteria makes it possible to consistently determine the dominant external and internal influence on functional components. In the course of the study, it was proved that eliminating the negative influence of the factors of global financial challenges allows balancing the system of economic security of business. Also, to bring it to the newest stage of evolutionary response and ensure further sustainable financial and socio-economic development. The set of used scientific methods of strategizing and balancing in the system of economic security, together with the practical tools for eliminating negative factors of external and internal influences, allows the creation of new scenario-empirical approaches to ensuring the strengthening of the economic security of business.

The significance of the research lies in developing approaches to the formation of strategies for strengthening economic security based on the identification of cause-and-effect relationships between the main components of the economic security system and the adaptation of the system-situational model. This development makes it possible to monitor the manifestation of the factors of elimination of business players in international financial markets and, due to the influence on the threshold invariants of resources, to equalize the disproportions of the international financial market.

Further author's research will be aimed at developing mechanisms to overcome the state of imbalance of the economic security system and the definition of criteria, which will allow to consistently determine the dominant external and internal influence on the functional components of economic security.

The proposed author's research does not contain aspects of secrecy and is not restricted to open distribution.

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REFERENCES

1. 16 Cornerstones in the Building of Doctrine of Stratagems. (2010). <https://www.management.com.ua/strategy/str201.html>
2. Adizes, I. (1999). *Corporate Lifecycles: How and Why Corporations Grow and Die and What to Do about it*, Englewood Cliffs, New Jersey, Prentice Hall.
3. Basel, V. (2009). *Large Explanatory Dictionary of the Modern Ukrainian Language*, Kyiv; Irpin: "Perun", 1024.
4. Bielykh, A., Pysarenko, S., Ren, D. M., & Kubatko, O. (2021). Market expectation shifts in option-implied volatilities in the US and UK stock markets during the Brexit vote. *Investment Management and Financial Innovations*, 18(4), 366-379. [https://doi.org/10.21511/imfi.18\(4\).2021.30](https://doi.org/10.21511/imfi.18(4).2021.30)
5. Brychko, M., Bilan, Y., Lyeonov, S., & Streimikiene, D. (2023). Do changes in the business environment and sustainable development really matter for enhancing enterprise development? *Sustainable*

- Development*, 31(2), 587-599.
<https://doi.org/10.1002/sd.2410>
6. Decree of the President of Ukraine (2021). "On the Decision of the National Security and Defense Council of Ukraine" of August 11, 2021 "On the Strategy of Economic Security of Ukraine until 2025", №347/2021.
<https://www.president.gov.ua/documents/3472021-39613>
 7. Detter, D., & Fölster, S. (2017). *The Public Wealth of Nation*. Lviv, Publishing house of Old Lion, 328.
 8. Druzhynina, V., & Likhonosova, G. (2017). Strategic Imperatives Ensuring Population Welfare with Transformation Exclusion Conditions. *Baltic Journal of Economic Studies*, 5(3), 135-146.
<https://doi.org/10.30525/2256-0742/2017-3-5-135-145>
 9. Druzhynina, V., Likhonosova, G., Viedienina, Y., & Sakun, L. (2020) Creative Analysis of Innovation as a Catalyser of Socialization of Structural Change. *European Journal of Sustainable Development*, 2(9), 349–365.
<https://doi.org/10.14207/ejsd.2020.v9n2p349>
 10. Friedman, M., & Friedman, R. (2017). *Capitalism and Freedom*. Kyiv, Our Format, 216.
 11. Fukuyama, F. (1999). *The Great Disruption*. Human Nature and the Reconstitution of Social Order. Free Press, New York.
 12. Harshad, D. (2022). The Constitution of Value. *Financial Markets, Institutions and Risks*, 6(2), 75-90.
[https://doi.org/10.21272/fmir.6\(2\).75-90.2022](https://doi.org/10.21272/fmir.6(2).75-90.2022)
 13. Hbur, Z. (2018). Measures on Enhancing Economic Security of Ukraine. *Investment: practice and experience*, 6, 52–55.
http://www.investplan.com.ua/pdf/11_2018/21.pdf
 14. Hurochkina, V., Nahaieva, O., Rymar, O., Chorny, O., Makhanets, L., & Shyshpanova, N. (2021). Foreign State Economic Policy in Context of Economic Security. *Journal of Management Information and Decision Sciences*, 24(3), 1-14.
<https://www.abacademies.org/articles/foreign-state-economic-policy-in-the-context-of-economic-security-10341.html>
 15. Ivastchenko, G. (2017). Hierarchy of Economic Security Levels. *East Europe: economy, business and management*, 6(11), 52–56.
http://www.easterneurope-ebm.in.ua/journal/11_2017/11.pdf
 16. Ivonchak, I. (2020). Features of Enterprise Economic Security in Ukraine. *Intellect XXI*, 2, 76–80.
<https://doi.org/10.32782/2415-8801/2020-2.14>
 17. Kaya, H. (2022a). Regulations and the characteristics of entrepreneurs. *SocioEconomic Challenges*, 6(3), 80-96. [https://doi.org/10.21272/sec.6\(3\).80-96.2022](https://doi.org/10.21272/sec.6(3).80-96.2022)
 18. Kaya, H. (2022b). The global crisis, manufacturing firms, regulations and taxes. *SocioEconomic Challenges*, 6(4), 1-7.
[https://doi.org/10.21272/sec.6\(4\).1-7.2022](https://doi.org/10.21272/sec.6(4).1-7.2022)
 19. Kaya, H. (2023). The impact of the 2008-2009 global crisis on the collateral requirement for loans: the case of manufacturing firms. *SocioEconomic Challenges*, 7(1), 44-51.
[https://doi.org/10.21272/sec.7\(1\).44-51.2023](https://doi.org/10.21272/sec.7(1).44-51.2023)
 20. Khovrak, I., & Chernenko, S. (2021). *Management of Innovation Activity in the Conditions of Industry 4.0*. Proceedings of the 20th IEEE International Conference on Modern Electrical and Energy Systems (MEES), 1–4.
<https://doi.org/10.1109/MEES52427.2021.9598621>
 21. Kievich, A., & Panyusko, A. (2021). Improvement of Approaches to Substantiation of the Diversification of the Economic Activity of an Enterprise. *Economics and Banking*, 2, 70-79.
https://rep.polessu.by/bitstream/123456789/24003/1/Sovershenstvovanie_podkhodov.pdf
 22. Kutsyk, P., & Kovtun, O. (2021). Strategic Context of Entering and Activity of Domestic Enterprises in Foreign Markets in the Conditions of Globalization: Key Aspects and Alternatives for Strategic Decisions. *Economic Sciences*, 65, 7–12.
<https://doi.org/10.36477/2522-1205-2021-65-01>
 23. Kuznyetsova, A., Sydorchenko, T., Zadvorna, O., Nikonenko, U., & Khalina, O. (2021). Assessment of aspects of the COVID-19 crisis in the context of ensuring economic security. *International Journal of Safety and Security Engineering*, 11(6), 615-622.
<https://doi.org/10.18280/ijss.110601>
 24. Law of Ukraine "On National Safety of Ukraine" (2018). *Bulletin of the Verkhovna Rada of Ukraine*, 31, 241. <https://zakon.rada.gov.ua/laws/show/2469-19#Text>
 25. Likhonosova, G. (2018). *Regulation of Socio-economic Rejection at Enterprises*: monograph. Severodonetsk: V. Dahl East Ukrainian National University, 424.
 26. Likhonosova, G., Aleksejeva, L., Zieiniiev, T., & Shalbayeva, S. (2023). Approaches to ensuring the economic security of the relocated business. *Access-access to science business innovation in the digital*

- economy*, 4(1), 115-129.
[http://doi:10.46656/access.2023.4.1\(9\)](http://doi:10.46656/access.2023.4.1(9))
27. Luzik-Dubova, T. (2012). Main Priorities of Strengthening the Financial Stability of Ukraine. *National Technical University Scientific Bulletin*, 22(II), 277–283.
http://economics.kntu.kr.ua/data/2012_22_2.pdf
 28. Maris, M. (2022). Management of Competitiveness in the EU Member States: The Main Strengths and Weaknesses. *Marketing and Management of Innovations*, 2, 110-120.
<https://doi.org/10.21272/mmi.2022.2-10>
 29. Maxton, G., & Randers, J. (2017). *Reinventing Prosperity. Managing Economic Growth to Reduce Unemployment, Inequality, and Climate Change*. A Report to the Club of Rome. Kyiv: Pabulum, 320.
<https://hdr.undp.org/system/files/documents/global-report-document/hdr2021-22rupdf.pdf>
 30. Mazur, N., Khrystenko, L., Pastorova, J., Zos-Kior, M. Puzyreva, P., & Rubezhanska, V. (2021). Improvement of Controlling in the Financial Management of Enterprises. *TEM Journal*, 10(4), 1605–1609. <https://doi.org/10.18421/TEM104-15>
 31. Melnyk, Y., & Kryvoruchko, N. (2012). *Prolegomena to the Ukrainian Discourse: Ethno-Cultural, Political and Linguistic-semiotic Aspects*. Ivano-Frankivsk: Published house of Vasyl Stefanyk Precarpathian National University, 260.
<https://kzigm.pnu.edu.ua/wp-content/uploads/sites/65/2018/04.2012.pdf>
 32. Mishchuk, I., Riabykina, Y., Ushenko, N., Hamova, O., Tkachenko, S., & Yastremska, N. (2022). Intellectual Capital as a Factor Forming Economic Security of Enterprises in Society 5.0 WSEAS. *Transactions on Business and Economics*, 19, 269-277. <http://doi.org/10.37394/23207.2022.19.25>
 33. Niekrasova, L., & Liubov, A. (2019). *Theoretical and Methodological Fundamentals of Industrial Enterprises Strategy Development in Context of Decentralization*. Schweinfurt, Time Realities Scientific Group UG, 446.
<https://economics.net.ua/files/scientific-base/monogr/Nekrasova.pdf>
 34. Njegovanović, A. (2022). Financial Decision Making Within Thermodynamic Principles. *Financial Markets, Institutions and Risks*, 6(2), 16-35.
[http://doi.org/10.21272/fmir.6\(2\).16-35.2022](http://doi.org/10.21272/fmir.6(2).16-35.2022)
 35. Njegovanović, A. (2023). Financial Evolution and Interdisciplinary Research. *Financial Markets, Institutions and Risks*, 7(1), 71-95.
[http://doi.org/10.21272/fmir.7\(1\).71-95.2023](http://doi.org/10.21272/fmir.7(1).71-95.2023)
 36. Nwaibe, C., Ogbuefi, J., & Egbenta, I. (2022). Organizational Learning and Risk Management Maturity: Systematic and Meta-Analyses Approach. *Business Ethics and Leadership*, 6(3), 68-76.
[https://doi.org/10.21272/bel.6\(3\).68-76.2022](https://doi.org/10.21272/bel.6(3).68-76.2022)
 37. Ozkan, S. A., & Ardic, K. (2022). Business Innovation Management: a General Overview to Virtuous Leadership. *Marketing and Management of Innovations*, 2, 184-197.
<https://doi.org/10.21272/mmi.2022.2-17>
 38. Seguer, Z., & Hasna, A. (2022). Business Intelligence as a Challenge for the Managerial Function: Case Study on Managerial Decision Making in Algerian Companies. *Business Ethics and Leadership*, 6(3), 35-46. <https://doi.org/10.21272/bel.6.35-46.2022>
 39. Shaulska, L., Kovalenko, S., Allayarov, S., Sydorenko, O., & Sukhanova, A. (2021). Strategic Enterprise Competitiveness Management under Global Challenges. *Academy of Strategic Management Journal*, 20(4), 1–7.
<https://www.abacademies.org/articles/strategic-enterprise-competitiveness-management-under-global-challenges-10917.html>
 40. Skrynnik, O. (2023). Prediction of Convergent and Divergent Determinants of Organisational Development. *Business Ethics and Leadership*, 7(1), 74-81. [http://doi.org/10.21272/bel.7\(1\).74-81.2023](http://doi.org/10.21272/bel.7(1).74-81.2023)
 41. Tereshchenko, E., Ushenko, N., Dielini, M., Nesterova, M., Lozhachevska, J., & Honcharenko, N. (2021). Behavioral Models of Decisions-Making by Business and Industry Stakeholders. *Financial and Credit Activity: Problems of Theory and Practice*, 5(40), 300-313.
<http://doi.org/10.18371/fcaptp.v5i40.245156>
 42. Tiutiunyk, I., Kuznetsova, A., & Spankova, J. (2021). Innovative approaches to the assessment of the impact of the shadow economy on social development: an analysis of causation. *Marketing and Management of Innovations*, 3, 165-174.
<https://doi.org/10.21272/mmi.2021.3-14>
 43. Ukraine 2030: The Doctrine of Balanced Development (2017). Lviv, Kalvaria, 164.
https://www.usubc.org/files/Ukraine_Doctrine_2030_E_Book_Eng.pdf
 44. Vasilyeva, T., Leonov, S., & Lunyakov, O. (2013). Analysis of internal and external imbalances in the financial sector of Ukraine's economy. *Actual Problems of Economics*, 150, 12, 176-184.
 45. Vasilyeva, T., Yarovenko, H., Babenko, D., Kalicheva, N., Frolova, N., & Shlyovtseva, N. (2022). The barycentric model of determining the sustainable

- growth determinants. *Heritage and Sustainable Development*, 4(2), 145-164.
<https://doi.org/10.37868/hsd.v4i2.148>
46. Vasylytsiva, T., & Lupak, R. (2019). *Mechanisms and Functionally-structural Instruments of Providing the Competitiveness of National Economy in the Conditions of Economic Security Modern Threats*. Lviv. Publishing House ESPC «ATB», 552.
<https://doi.org/10.32702/2307-2105-2019.9.1>
47. Wang, W., Melnyk, L., Kubatko, O., Kovalov, B., & Hens, L. (2023). Economic and Technological Efficiency of Renewable Energy Technologies Implementation. *Sustainability* (Switzerland), 15(11), 8802. <https://doi.org/10.3390/su15118802>
48. Zahariev, A., Ivanova, P., Zaharieva, G., Slaveva, K., Mihaylova, M., & Todorova, T. (2023). Interplay between CSR and the Digitalisation of Bulgarian Financial Enterprises: HRM Approach and Pandemic Evidence. *Journal of Risk and Financial Management*, 16(9), 385. <https://doi.org/10.3390/jrfm16090385>
49. Zaichenko, K., & Dima, N. (2021). *Economic Security of an Enterprise: Essence and Role. Efficient Economy*, 5.
<http://www.economy.nayka.com.ua/?op=1&z=8900>

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СТРАТЕГІЇ ЗМІЦНЕННЯ ЕКОНОМІЧНОЇ БЕЗПЕКИ БІЗНЕСУ: ВРАХУВАННЯ УМОВ ГЛОБАЛЬНИХ ФІНАНСОВИХ ВИКЛИКІВ

У центрі уваги дослідження є алгоритм поведінки бізнесу в умовах погіршення його економічної безпеки. Алгоритм дозволяє адекватно оцінити ситуацію щодо фінансових загроз і розробити відповідні стратегічні заходи щодо їх усунення. Із метою універсалізації оцінки тенденцій елімінації бізнес-гравців на міжнародних фінансових ринках запропоновано системно-ситуаційну модель із фінансовими гравцями. Мета дослідження – теоретичні та прикладні підходи до розробки стратегій зміцнення економічної безпеки бізнесу в контексті глобальних викликів світової фінансової системи. У статті емпірично встановлено найбільш важливі чинники виникнення та поширення фінансових труднощів усіх задіяних у фінансовій системі суб'єктів бізнесу, що підтверджено результатами реактивної поведінки бізнесу за умов погіршення економічної безпеки та активації імпульсів поширення ймовірності банкрутства. Для універсалізації вимірювання тенденцій усунення бізнес-гравців на міжнародних фінансових ринках досліджено системно-ситуаційну модель, яка базується на консолідації системного й ситуаційного уявлень фінансових гравців щодо інтерпретування фінансової інформації, та адаптовано до умов поведінки інвесторів на міжнародному фінансовому ринку. Для подолання стану розбалансування системи економічної безпеки запропоновано систему критеріїв, використання яких дозволяє послідовно визначити доміанти зовнішнього та внутрішнього впливу на функціональні складові. У ході дослідження доведено, що усунення негативного впливу факторів глобальних фінансових викликів здатне збалансувати систему економічної безпеки бізнесу, вивести її на новітній етап еволюційного реагування та забезпечити подальший сталий фінансовий і соціально-економічний розвиток бізнесу. Сукупність використаних наукових методів стратегування можливостей балансування в системі економічної безпеки й запропонованих емпіричних інструментів усунення негативних факторів зовнішнього та внутрішнього впливів дозволяють створювати нові сценарно-емпіричні підходи до забезпечення зміцнення економічної безпеки бізнесу.

Ключові слова: економічна безпека, стратегії, глобальні фінансові виклики, сталий розвиток, поведінка бізнес-гравців, стратагеми, складні системи

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