ENTREPRENEURSHIP DEVELOPMENT MANAGEMENT IN THE CONTEXT OF ECONOMIC SECURITY

Svitlana Khalatur [1], Yuliia Masiuk [2], Svitlana Kachula [3], Larysa Brovko [4], Oleksandr Karamushka [5], Inna Shramko [6]

[1,2, 3, 4, 5, 6] Dnipro State Agrarian and Economic University, Sergey Efremov street, 25, Dnipro, Ukraine

Abstract. The article investigates theoretical and methodological approaches and practical aspects of functioning and management of socio-economic systems in modern economic conditions, develops an economic and mathematical model of economic security of business entities in conditions of risk and uncertainty, substantiates the development of Ukrainian entrepreneurship in the context of European integration challenges. The main objectives of this study are: to identify factors influencing the management of business development and the formation of economic security; study of the essence of economic security based on systematization of threats on various classification signs and definition of characteristic signs of its achievement for the realization of the further scientific developments in this direction. The problem of ensuring the development of entrepreneurship in the context of a sufficient level of economic security and the formation of favorable conditions for innovative development of enterprises today requires an adequate and timely solution and is extremely relevant. The author's definition of economic security of the enterprise is formulated, which means such a level of development of its capacities and potential that allows achieving a state of protection from internal and external economic threats in conditions of instability of the national economy. The main functional components of economic security at the level of management of a modern enterprise are highlighted. Attention is paid to the main problems of business development management in the context of economic security. The factors of development influencing economic security in the conditions of competition are formed.

Keywords: globalization; economy; development; threats; security; economic security; challenges; business management

1. Introduction

In today's dynamic market conditions, the formation and development of business entities, which should become a formative chain of innovation and development of the state, business, and scientific community, as well as the development and implementation of effective mechanisms to manage the development of business entities, are especially relevant. The global nature of economic and social development, along with providing ample opportunities, strengthens the requirements for product competitiveness and the ability to adapt to external and

internal transformational challenges of the socio-economic environment. Accordingly, an integrated study of the problems of business development management is becoming extremely important not only in terms of increasing competitiveness and in terms of strengthening market positions but also in the direction of developing strategic priorities and development imperatives. Today, most businesses with unique technologies and significant material and technical bases have not only ceased to be competitive in today's economy but have also lost the accumulated intellectual and innovative potential due to the lack of effective management systems and methods. This article is devoted to the study of conceptual foundations and solving problems of ensuring effective management of business development in the context of economic security and the challenges of the XXI century. The article investigates theoretical and methodological approaches and practical aspects of functioning and management of socio-economic systems in modern economic conditions, develops an economic and mathematical model of economic security of business entities in conditions of risk and uncertainty, substantiates the development of Ukrainian entrepreneurship in the context of European integration challenges.

2. Literature review

Shkolnyk, Ladyka, Orlov, Aldiwani & Kozmenko (2021) argue that the optimal and balanced formation of state budget expenditures can be the basis for determining and ensuring an effective development strategy. Honningdal Grytten & Hunnes (2021) demonstrated the importance of combining the protection of the environment and resources from oil production in Norway's open economy. The implementation of the Norwegian oil policy focuses on environmental safety and sound rent management.

Dankiewicz, Balawejder, Tomczyk & Trynchuk (2021) argue that the outbreak of the COVID-19 pandemic is reassessing and changing the way we do business. The vast majority of companies had to learn to act in a new, much more complex reality. Restrictions imposed by individual governments, also related to limited business opportunities, have put some businesses in a very difficult situation; the financial situation of enterprises operating in various sectors of the economy is gradually deteriorating. Kireyeva, Nurbatsin, Yessentay, Bagayeva & Turdalina (2021) argue that the stable operation of enterprises guarantees an increase in the welfare of the population and an improvement in the quality of life. Scientists have concluded that topics such as the potential of enterprises and factors of innovative development, especially in developing countries, are not widely studied.

Daugherty, Jithendranathan & Vang (2021) in their studies studied the strategies of asset allocation that will maximize their real profitability. Oharenko, Merzlyak, Tomareva-Patlakhova, Vikhort & Skriabina (2021) write that the financing of innovation-related projects is provided by a small number of banks, and the financing of large-scale programs is provided by the state and local communities. Agostino & Trivieri (2019) first studied the relationship between production efficiency and credit, to form sources of financing to help financially constrained companies manage their resources optimally.

Bulatova, Marena, Chentukov, & Shabelnyk (2020) studied global financial transformations that affect economic security. Their research is aimed at analyzing the impact of the share of bank assets and debt securities on the growth of the share of stock market capitalization. Chugunov & Nasibova (2021) argue that the best way to achieve social well-being is to promote income transparency and set optimal social standards in terms of improving macroeconomic performance. The study was conducted on Eurozone data.

Dankiewicz (2020) in his works studied the risk of bankruptcy as one of the key types of business risk. Based on Polish data, the highest number of bankruptcies was recorded among companies in the manufacturing sector and the lowest among companies engaged in retail sales. Grytten (2020) on the example of Norway studied the impact of GDP on economic development. Khalatur (2013) notes that one of the priorities of Ukraine's economic policy is to stimulate investment activity; which is closely related to the state of forecasting assessment of the development of the investment market. Khalatur (2017) considers the state of agriculture in Ukraine and argues

that the main reserves of agricultural development in Ukraine are government regulation, assessment of the attractiveness of the investment climate, the use of modern mechanisms of economic stimulation of production.

Khalatur, Trokhymets & Karamushka (2020) analyzed the tax systems of the European Union and Ukraine, the impact of certain indicators of the tax system on economic development. The study of Khalatur, Khaminich, Dubovych, Budko & Karamushka (2020) showed that a multilevel system of investment decision-making is necessary to identify and form a positive synergy effect from the combination and interaction of assets and funding sources.

Ortiz-Villajos & Sotoca (2018) examined the relationship between innovation (and their types) and business survival by controlling five features of companies. Ritter & Pedersen (2020) presented a unique tool for assessing the impact of the crisis on the business model. Zinilli (2016) studied competitive funding schemes using dynamic network analysis techniques within a specific Italian funding program. Vasylieva (2019) argues that the initial management of agriculture is a prerequisite for saturating domestic demand for quality food and expands the Ukrainian niche in world agriculture, and appropriate monitoring and comparison will determine options and prospects for improving agricultural management at the level of agricultural enterprises. Velychko, Velychko, & Ramanauskas (2016) investigated strategic directions of harmonization in the development of agricultural enterprises and rural territorial communities.

Therefore, further research is needed in the management of business development in the context of economic security.

Setting objectives. Based on the review of the literature discussed in the previous section, we can formulate the following goals and objectives of the study.

The main purpose of this study is to identify the factors influencing the management of business development and the formation of economic security.

Achieving the goal will help solve the following tasks:

1. Study of the essence of economic security based on systematization of threats on various classification signs and definition of characteristic signs of its achievement for the realization of the further scientific developments in this direction.

2. Research of the importance of economic security in the management of business development.

3. Development of theoretical, methodological provisions and practical recommendations for solving problems and outlining prospects for economic security and business development.

3. Research methodology.

To achieve this goal, the works of domestic and foreign scientists - researchers on the above issues were analyzed and the following research methods were used: a systematic approach, inductive and deductive analysis, logical generalization, economic and mathematical modeling. The design of the research is presented below in Figure 1.
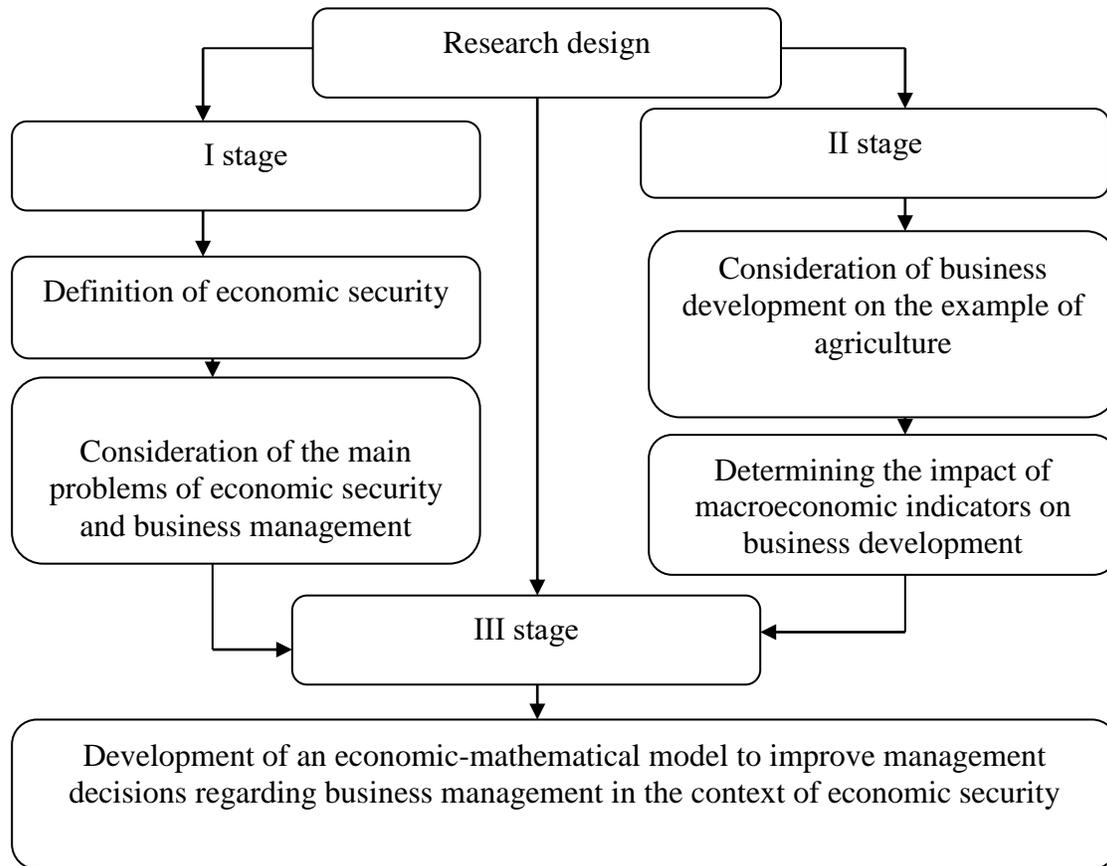
Figure 1. The design of the research

4. Research results

The concept of economic security in modern economic conditions should be considered from a new perspective, as well as any processes or changes that lead to activity and dynamics of development and carry significant both positive factors of development and threats and dangers. At the macro level, economic security is determined primarily by the state's ability to self-development, the source of which in the transition to the information society is innovation. Their introduction into the national economy creates the necessary foundation of technological independence of the country and its sustainable economic development.

The economic security of the enterprise is the state of the most efficient use of corporate resources to prevent threats and ensure the stable operation of the enterprise now and in the future. Summarizing the definition of economic security, we can conclude that the economic security of the enterprise reflects its characteristics such as independence, resilience, security, ability to withstand various threats that interfere with its normal functioning, but, above all, this is the level of development at which the company as a result of a long struggle, certain supportive measures and active actions. Thus, the economic security of the enterprise should be understood as a level of its development that ensures its inaccessibility to internal and external threats and the ability to function properly in a competitive environment.

To understand this concept in more detail, it is customary to distinguish functional components of economic security, namely: financial, intellectual and personnel, technical and technological, political and legal, environmental, information, law enforcement. Each of these components is characterized by its content, functional criteria, and methods of provision that deserve attention. This study will highlight some components of economic security as a driving force for entrepreneurship in the country, which, in turn, leads to a stable place of the enterprise in conditions of constant competition and the presence of internal and external threats.

According to our study, entrepreneurship should be understood as a level of capacity and capacity development that allows achieving a state of protection from internal and external economic threats in conditions of instability of the national economy.

The process of formation and actualization of the economic security of the enterprise depends on the level of management of entrepreneurship in general and enterprises in particular, which increase the degree of realization of society's needs, ensure the development of enterprises and increase their competitiveness. The concept of "entrepreneurship" is broad, but in the formation of economic security are important resources that bring new solutions to problems; significantly improve production processes and the quality of the original product, principles, structure of new objects. Entrepreneurship management is one of the main factors of economic security and competitiveness of the state and the enterprise, which potentially contains the principles of financial success. Accordingly, an adequate level of economic security is impossible without the entrepreneurial component, which ensures the high position of the state and the enterprise, their ability to withstand various dangers. However, full economic security is an ideal, which means the constant need to maintain the already achieved economic results and get new ones, in particular, in the field of entrepreneurship.

So, there were highlighted the main problems of economic security and business management:
- undeveloped legislation on ensuring the development of small business in particular, and entrepreneurship in general;
- significant tax pressure and corruption of government agencies, which forces companies to hide financial resources, which in normal development can be directed to the development of financial and economic activities;
- insufficient financial and credit and investment support for business development;
- limited access to information on the processes of effective business development;
- imperfection and limitations of the system of training, retraining, and advanced training of personnel for the system of economic security.

In modern conditions, the development of entrepreneurship is one of the categories that allow you to assess and analyze a comprehensive product quality, efficiency of production, the processes of the economic system, the state of the country on the world stage as a whole. Today, to ensure the effective competitiveness of enterprises and the state, it is advisable to develop and implement scientific developments, use innovative technologies to improve the overall system of the economy. Thus, it is worth noting that effective business management will succeed in combating competitors and take a certain position in the market. Considering the enterprise as a single integrated system, it should be noted that the creation and implementation of an effective mechanism for managing the enterprise will increase efficiency and achieve the required state of stability.

Thus, in this study, by analyzing and systematizing various theoretical approaches to the concept of "economic security", it was proposed our own generalized definition of the term. Risks of business management in view of economic security of business activity have resulted.

The economic security of a modern enterprise is ensured by a set of conditions, among which the management of entrepreneurship is of paramount importance. An obstacle in its path is the presence of a set of problems that

hinder the normal functioning of entrepreneurship in Ukraine, its innovative steps, and, accordingly, the provision of protection against threats within the organization and by government institutions, competitors, and unscrupulous business partners. Finding a solution to these problems can be the subject of further research. Overcoming them requires a combination of mechanisms of state regulation with the mechanism of self-organization of the modern enterprise, which is a sign of a civilized market and a necessary condition for sustainable economic development.

For more detailed disclosure of the topic in Table 1, the indicators related to the opportunities for the development of entrepreneurship in agriculture in Ukraine and the European Union are analyzed.

Table 1. Indicators of opportunities for the development of entrepreneurship in agriculture in Ukraine and the European Union on average for 2001-2019

Country Name	Agricultural land (% of land area)	Agricultural machinery, tractors per 100 sq. km of arable land	Agricultural raw materials exports (% of merchandise exports)	Agricultural raw materials imports (% of merchandise imports)	Agriculture, forestry, and fishing, value added (% of GDP)
Austria	33,72	2408,32	1,76	2,19	1,31
Belgium	44,89	1140,68	1,32	1,28	0,78
Bulgaria	47,27	118,18	1,55	1,20	5,62
Greece	56,90	967,28	2,20	1,14	3,67
Denmark	64,01	513,12	2,80	2,47	1,31
Estonia	21,45	650,13	5,75	2,56	3,07
Ireland	64,53	1399,88	0,49	0,75	1,13
Spain	55,53	768,66	1,13	1,33	2,74
Italy	47,53	2075,43	0,67	2,45	2,04
Cyprus	14,18	1225,40	1,25	0,84	2,35
Latvia	28,94	540,90	14,65	2,20	3,60
Lithuania	44,96	631,42	3,00	2,17	3,65
Luxembourg	53,57	1109,57	1,56	1,68	0,35
Malta	31,18	1212,78	0,10	0,46	1,35
Netherlands	55,90	1483,65	2,85	1,57	1,80
Germany	48,25	-	0,82	1,49	0,82
Poland	50,08	1166,54	1,24	1,73	2,79
Portugal	40,56	1151,08	2,56	1,84	2,19
Romania	60,73	191,00	2,10	1,40	6,86
Slovak Republic	40,97	158,18	1,22	1,26	2,24
Slovenia	28,41	6146,76	1,68	2,82	2,15
Hungary	61,64	255,59	0,68	1,12	3,78
Finland	7,47	782,27	6,26	2,50	2,36
France	53,10	669,20	0,95	1,34	1,64
Croatia	23,84	38,71	4,19	1,21	3,69
Czech Republic	51,84	278,27	1,48	1,43	2,20
Sweden	7,57	603,98	4,05	1,47	1,56
Ukraine	71,41	112,25	1,51	1,15	9,56

Source: compiled by authors based on World Bank data

Thus, in comparison with Ukraine and the European Union, the following indicators related to agriculture, economic security, and entrepreneurship were analyzed for the selected countries.

The largest value of agricultural land as a percentage of land area among the EU countries on average for 2001-2019 in Ukraine (71.41%), Ireland (64.53%), Denmark (64.01%), Hungary (61.64%)). The lowest value of agricultural land as a percentage of the land area is in Finland (7.47%), Sweden (7.57%), Cyprus (14.18%). Agricultural machinery, number of tractors per 100 square meters. km of arable land is the largest in Slovenia (6146), Austria (2408), Italy (2075). At the same time, the value-added of agriculture as a percentage of GDP in these countries is 2.15%; 1.31%, and 2.04%, respectively. The highest value-added of agriculture as a percentage of GDP is in Ukraine (9.56%), Romania (6.86%), and Bulgaria (5.62%). Exports of agricultural raw materials in% of exports of goods are highest in Latvia (14.65%) and lowest - in Malta (0.10%). The largest value of imports of agricultural raw materials in% of imports of goods in Slovenia (2.82%), and the smallest is also in Malta (0.46%).

Nationwide indicators that promote or hinder the development of entrepreneurship in the country in Ukraine and the European Union on average for 2001-2019 are analyzed in Figures 2 and 3.
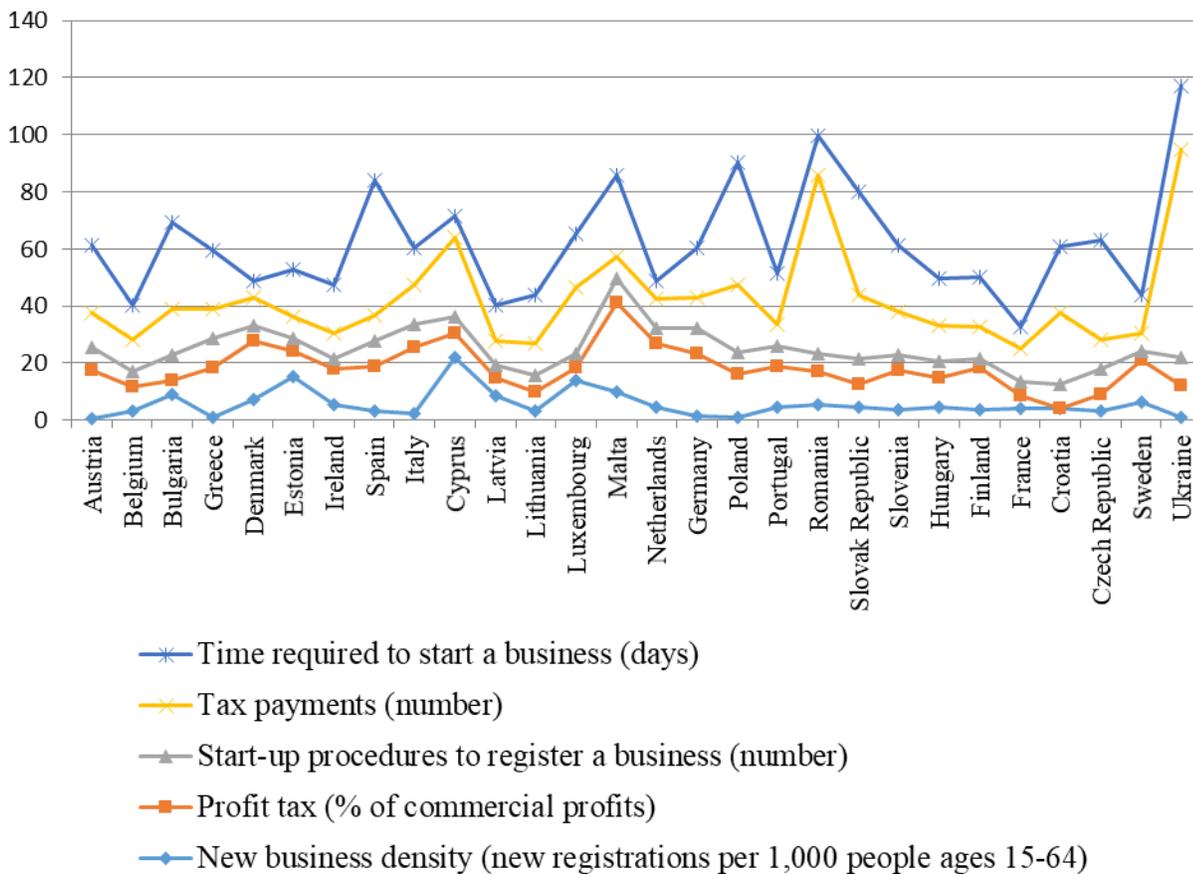
Figure 2. National indicators that promote or hinder the development of entrepreneurship in Ukraine and in the European Union countries on average for 2001-2019
Source: compiled by authors based on World Bank data

564
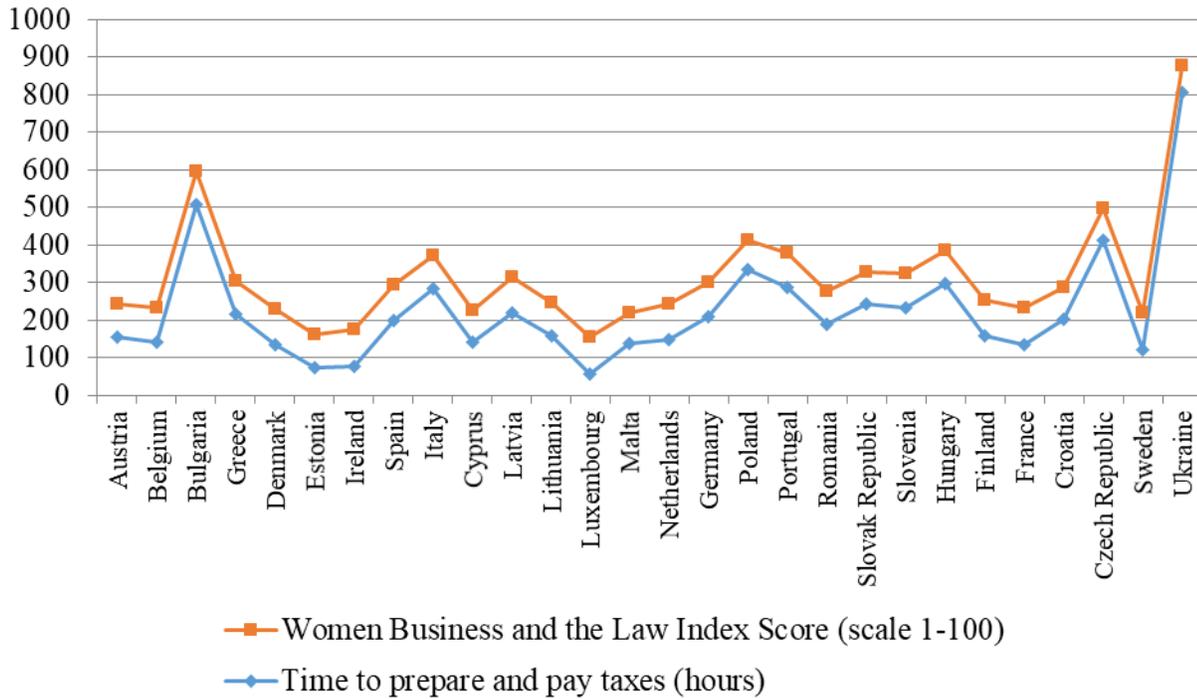
Figure 3. Time to prepare and pay taxes (hours) and Women Business and the Law Index Score in Ukraine and EU countries on average for 2001-2019
Source: compiled by authors based on World Bank data

According to Figure 2, the number of new business registrations per 1,000 people aged 15–64 is highest in Cyprus (21.79), Estonia (15.45), and Luxembourg (14.11); the smallest - in Greece (0.85). Possible factors contributing to this trend are: the number of initial business registration procedures in Cyprus (5.67), Estonia (4.59), Luxembourg (5.00); a number of tax payments Cyprus (27.83), Estonia (7.67), Luxembourg (23.00); as well as the time required to start a business; time to prepare and pay taxes. The Index of Women in Business is interesting, the highest in Spain (96.56) and the lowest in Ukraine (73.91).

One of the main trends in society and the world economy is economic globalization - a phenomenon that has destroyed existing notions of "space and time, the coordinate system according to which we organized reality". In essence, globalization today is a very important challenge to the economic security of any country that is to some extent integrated into the economic space - because it violates economic borders and makes the national economy more open to the negative trends of today. Accordingly, if a country does not have an effective mechanism to counteract the negative impact of processes taking place in a changing and interconnected economic space, it becomes vulnerable to the threats of the globalization world. Thus, the national economy becomes less internally managed and more dependent on such structural centers of globalization as the International Monetary Fund, the World Bank, the International Bank for Reconstruction and Development, the World Trade Organization, and other world financial and economic organizations. Under these conditions, the low level of economic security of the national economy leads to changes in the development of economic processes due to the violation of the stability of development in any center of globalization. Accordingly, the level of GDP, the efficiency of the financial and real sectors of the economy, the purchasing power of the population and the socio-economic well-being of the country as a whole are declining.

In Figure 4 there were analyzed the national indicators of economic security in Ukraine and the European Union on average for 2001-2019.
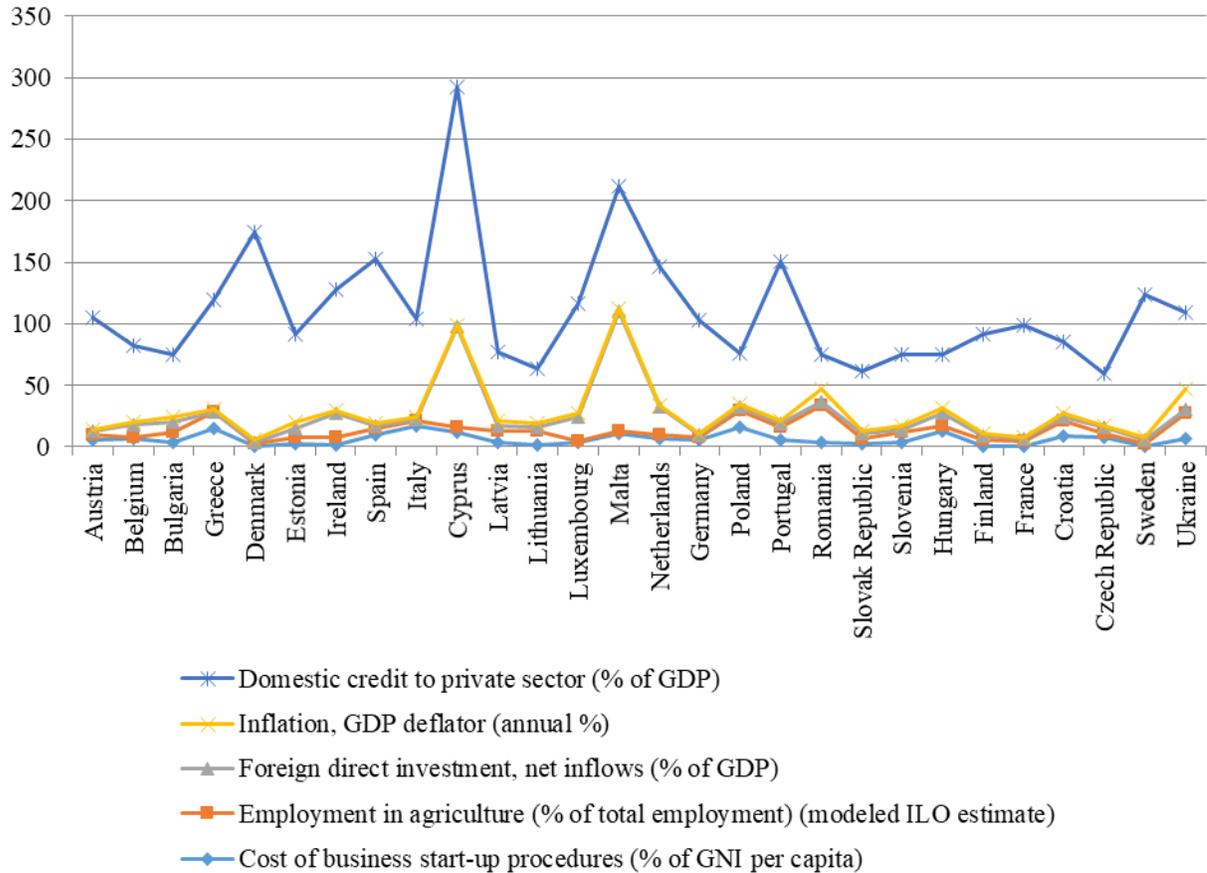
Figure 4. Economic security, national indicators in Ukraine and EU countries on average for 2001-2019
Source: compiled by authors based on World Bank data

According to Fig. 4, the cost of starting a business in% of GNI per capita is highest in Italy (17,26) and lowest in Denmark (0,09). The highest inflation rates in Ukraine are 15,78% and in Romania 10,40%. Thus, because of the above, global economic security can be defined as an integral part of global security of mega economic systems, a prerequisite for which is economic security within the macro-, meso- and microeconomic systems of each of the countries of the global integration world structure.

In Table 2 there were analyzed the indicators of economic security of enterprises in Ukraine and the European Union on average for 2001-2019.

Table 2. Indicators of economic security of enterprises in Ukraine and the European Union on average for 2001-2019

Country Name	Firms expected to give gifts in meetings with tax officials (% of firms)	Firms experiencing losses due to theft and vandalism (% of firms)	Firms that do not report all sales for tax purposes (% of firms)	Firms that spend on R&D (% of firms)	Firms using banks to finance investment (% of firms)	Firms using banks to finance working capital (% of firms)	Ease of doing business index (1=most business-friendly regulations)
Austria	5,7	16,70	35,68	27,14	29,80	37,12	27,00
Belgium	0,20	20,70	27,18	28,90	51,60	54,10	46,00
Bulgaria	20,85	17,33	34,39	6,40	33,99	36,10	61,00
Greece	28,80	19,30	53,19	10,70	17,10	21,50	79,00
Denmark	19,67	25,68	36,76	11,28	25,78	23,45	4,00
Estonia	6,70	27,70	39,07	13,40	31,18	24,30	18,00
Ireland	11,00	22,31	28,78	10,15	37,40	46,10	24,00
Spain	14,30	21,78	18,33	9,45	32,60	35,80	30,00
Italy	4,20	4,10	26,78	5,00	52,50	27,80	58,00
Cyprus	0,00	12,80	30,01	8,00	21,40	42,20	54,00
Latvia	14,42	22,50	37,34	8,55	25,04	27,45	19,00
Lithuania	13,25	18,43	43,61	5,65	26,07	26,70	11,00
Luxembourg	0,00	17,50	32,45	27,00	33,80	30,30	72,00
Malta	0,00	9,30	34,52	16,40	28,90	61,80	88,00
Netherlands	6,78	16,42	36,15	9,12	26,78	32,42	42,00
Germany	14,80	12,56	35,56	10,87	45,00	42,20	22,00
Poland	11,43	15,77	37,88	5,80	36,20	33,52	40,00
Portugal	26,10	5,10	37,25	4,00	20,55	23,75	39,00
Romania	17,38	11,00	34,89	9,20	28,50	33,00	55,00
Slovak Republic	16,24	16,47	36,96	6,95	26,74	29,85	45,00
Slovenia	6,00	16,97	47,79	19,00	36,20	34,60	37,00
Hungary	11,30	12,37	40,67	7,10	31,96	32,43	52,00
Finland	7,89	13,45	37,81	9,15	27,15	32,56	20,00
France	12,45	18,95	36,71	11,45	30,56	36,23	32,00
Croatia	16,36	19,10	39,28	12,75	36,72	42,14	51,00
Czech Republic	14,80	30,43	50,09	21,10	29,00	31,40	41,00
Sweden	0,30	39,80	33,23	29,90	17,90	26,60	10,00
Ukraine	44,16	16,57	31,90	7,60	21,34	19,40	64,00

Source: compiled by authors based on World Bank data

According to Table 2, the largest number of companies expecting to give gifts at meetings with tax officials in Ukraine (44,16% of companies), and the smallest - Cyprus, Luxembourg, Malta (0% of companies). Sweden has the largest number of companies that suffer losses due to theft and vandalism (39,80% of companies), and the smallest in Portugal (5,10% of companies). The largest number of firms that do not report all sales for tax purposes in Greece (53,19% of firms), the smallest - in Italy (26,78% of firms). The largest number of firms that use banks to finance investments is Belgium (51,60% of firms), the smallest - in Greece (17,10% of firms). The largest number of firms that use banks to finance working capital is also in Belgium (54,10% of firms), the smallest - in Ukraine (19,40% of firms). The ease of doing business index is best in Denmark (4, with 1 = the most business-friendly rules) and worst in Malta (88, with 1 = the most business-friendly rules).

The activities of enterprises are carried out in a dynamic competitive environment, complex market conditions, asymmetric information space, and cyclical economic development. The effectiveness of each individual enterprise reflects current trends and processes occurring at the macroeconomic level. At the same time, enterprises as the most productive structural link of the economic mechanism of the state produce a significant

share of goods, provide various services, carry out research and innovation activities, create a competitive potential of the country and so on. Thus, it is safe to say that existing enterprises are a central part of the economic system of any state, which has a direct impact on its stability and socio-economic achievements. In this regard, an important task for the effective functioning of enterprises is to ensure their economic security, which is especially important in an unstable and uncertain business environment.

Thus, it should be noted that the emergence of the category of economic security of the enterprise and the growing relevance of its current research is associated primarily with the existence of a large number of threats that must be taken into account in making management decisions. After all, the efficiency of its business will depend on the ability of the business entity to adapt in time to the impact of these threats. At the same time, the analysis of the results of various scientific studies on the essence of the studied category, allowed us to conclude that there are certain signs of economic security of the enterprise, provided that it can be argued about a certain level of its achievement.

Economic and mathematical methods today are widely used in the analysis of the financial condition of the enterprise and the development of management solutions for its optimization. In the development of management decisions regarding the management of entrepreneurship in the context of economic security, mathematical methods are used to determine the impact of macroeconomic indicators. For the application of economic and mathematical methods, first of all, it is necessary to determine the indicators that affect economic security. The assessment of macroeconomic indicators of the studied European countries shows that there is a tendency to reduce the optimal business conditions in the context of economic security, so it is advisable to identify and analyze the factors that affect economic security. Today, economic and mathematical methods are used to quantify the applied decisions on the organization of management.

 When solving specific control problems, the application of mathematical methods involves:
    - construction of economic and mathematical models for decision-making tasks in difficult situations or in conditions of uncertainty;
    - study of the relationship between the subsequent decisions and the establishment of performance criteria to assess the benefits of a particular option.
    The factors included in the description of the model can be divided into two groups:
    1) constant factors that we cannot influence;
    2) dependent factors, which within certain limits we can choose at will.

The criterion of efficiency, expressed by some function, is called the target and depends on the factors of both groups. All models of operations research can be classified depending on the nature and properties of operations, features of the application of mathematical methods. It should be noted that, first of all, a large class of optimization models. Such problems arise when trying to optimize the planning and management of complex systems.

To analyze the management of entrepreneurship in the context of economic security, take the indicator Foreign direct investment, net inflows (% of GDP), and the factors influencing it include Cost of business start-up procedures (% of GNI per capita), Inflation, GDP deflator (annual%), Domestic credit to the private sector (% of GDP), Profit tax (% of commercial profits).

The regression equation is compiled - a model according to which measures optimizing the indicator Foreign direct investment, net inflows (% of GDP) will be developed:

$$Y = a + B_1*X_1 + B_2*X_2 + B_3*X_3 + B_4*X_4 \qquad (1.)$$
where Y – Foreign direct investment, net inflows (% of GDP);
a - a free member of the equation;
B_1, B_2, B_3, B_4 – coefficients for variables;
X_1 -Cost of business start-up procedures (% of GNI per capita);
X_2 - Inflation, GDP deflator (annual %);
X_3 - Domestic credit to the private sector (% of GDP);
X_4 - Profit tax (% of commercial profits).

Before applying the function it is necessary to check the expediency of the compiled model:
- check the significance of the regression equation;
- to determine the quality of the compiled model.
The parameters of the regression equation were calculated using the MS Exel program.

The regression equation will take the form:
$$Y=0,8902 - 0,3054*X_1 - 0,0294*X_2 + 0,0567*X_3 - 0,0871*X_4 \qquad (2.)$$

To check the significance of the regression equation, we find the actual Fisher F-test by the formula:

$$Ffact = \frac{Sfact}{Sres} \qquad (3.)$$

where Sfact –the actual variance is based on the formula:

$$Sfact = \sum (\hat{y} - \bar{y})^2 \qquad (4.)$$

Sres –the residual dispersion is according to the formula:

$$Sres = \sum (y - \hat{y})^2 / n - 2 \qquad (5.)$$

So, Ffact = 51,285 / 0,650 = 78,9.

Fisher's F-test at a significance level of 0.01 is equal to 16.26 (tabular value). If the condition is met Fфакт > $F_{0,01}$the regression equation is considered significant, in this case this condition is fulfilled: 78,9 >= 16,26

Checking the quality of the compiled model is determined using the average error of the approximation. The model is considered to be made qualitatively if the value of the average approximation error is in the range from 5 to 7% inclusive.
The average approximation error is based on the formula:

$$\overline{A} = \left| \frac{|y - \hat{y}|}{y} \right| *100\% \qquad (6.)$$

where Ā - average approximation error;
ý -the calculated value of the equation.

The calculated value of the average approximation error is equal to 4.5%, rounding to an integer, we obtain 5%. This means that the model is made qualitatively and is suitable for further research.

To determine in which direction to develop activities, we identify the factors that most strongly influence the performance trait. To do this, the following are calculated: coefficients of elasticity; and correlation coefficients.

The coefficient of elasticity is calculated by the formula:

$$E_i = \frac{\theta_i * \ddot{x}}{\ddot{y}} \qquad (7.)$$

The following data were obtained:

$E_1 = -0,3;$
$E_2 = -0,04;$
$E_3 = 0,05;$
$E_4 = -0,04.$

This means that the factors affect the performance trait as follows:

- increase of Cost of business start-up procedures (% of GNI per capita) (factor x1) by 1% entails a decrease of Foreign direct investment, net inflows (% of GDP) by 0.3%;

- growth of Inflation, GDP deflator (annual%) (factor x2) by 1% decreases Foreign direct investment, net inflows (% of GDP) by 0.04%;

- increase of Domestic credit to the private sector (% of GDP) (factor x3) by 1% entails a decrease of Foreign direct investment, net inflows (% of GDP) by 0.5%;

- growth of Profit tax (% of commercial profits) (factor x3) by 1% decreases Foreign direct investment, net inflows (% of GDP) by 0.04%;

Correlation coefficients are calculated using MS Exel for correlation analysis.
The obtained correlation indices are presented in table 3.

Table 3. Correlation coefficients

	Y	X_1	X_2	X_3	X_4
Y	1				
X_1	0,1999	1			
X_2	0,1905	0,0144	1		
X_3	0,1845	0,0132	0,0123	1	
X_4	0,1867	0,0156	0,0189	0,0143	1

Source: compiled by authors based on World Bank data

The obtained indicators characterize the connections as follows:

- the factor Cost of business start-up procedures (% of GNI per capita) (correlation coefficient = 0.1999) and only then Inflation, GDP deflator (annual%) (correlation coefficient = 0.1905) have the greatest influence on the performance indicator; Domestic credit to private sector (% of GDP) - (correlation coefficient = 0.1845); Profit tax (% of commercial profits) (correlation coefficient = 0.1867).

- the analyzed factors do not correlate much with each other, so all the factors of the regression equation are significant. All factors of the regression equation will be taken into account when calculating the forecast result (Foreign direct investment, net inflows (% of GDP)).

The regression analysis shows that the Cost of business start-up procedures (% of GNI per capita) has the greatest impact on Foreign direct investment, net inflows (% of GDP).

Conclusions

Summarizing the above, it should be noted that in modern economic conditions, economic security acquires the status of a complex multilevel system, as it requires protection of all its components at different hierarchical levels - from global to individual businesses. Of course, achieving economic security at each level is important and requires constant research at the theoretical, methodological, and methodological levels. However, a necessary condition for achieving global, national, and regional security is to ensure economic security at the enterprise level, the economic essence of which is to provide conditions for its effective functioning and strategic development in the face of threats of various kinds. With this in mind, the achievement of the targets of any enterprise and directly ensure its economic security will depend on the effectiveness of the process of timely identification and minimization of risks to the external and internal environment.

Research limitations: the study was limited to data from the European Union countries and Ukraine for the period 2001-2019.

The scientific novelty of the study is to assess the macroeconomic indicators of the studied European countries, which shows that there is a tendency to reduce the optimal business conditions in the context of economic security, so it is advisable to identify and analyze factors influencing economic security. After developing an economic-mathematical model of the influence of factors on Foreign direct investment, net inflows, it was determined that the factor Cost of business start-up procedures and only then Inflation, GDP deflator has the greatest influence on the performance indicator; Domestic credit to the private sector; Profit tax.

Thus, in view of the above, global economic security can be defined as an integral part of global security of mega economic systems, a prerequisite for which is economic security within the macro-, meso- and microeconomic systems of each of the countries of the global integration world structure.

For the effective solution of strategic tasks of formation and development of the system of guaranteeing economic security of business, adequate to external challenges, the further direction of future researches the creation and analysis of a full-fledged institutional base is determined.

References

Agostino, M., & Trivieri F. (2019). Does Trade Credit Affect Technical Efficiency? Empirical Evidence from Italian Manufacturing SMEs. Journal of Small Business Management, 57(2), 576-592. https://doi.org/10.1111/jsbm.12410

Bulatova, O., Marena, T., Chentukov, Y., & Shabelnyk, T. (2020). The impact of global financial transformations on the economic security of Central and Eastern European countries. Public and Municipal Finance, 9(1), 1-13. http://dx.doi.org/10.21511/pmf.09(1).2020.01

Chugunov, I., & Nasibova, O. (2021). Public funding of social protection: Impact on social indicators in Eurozone countries. Investment Management and Financial Innovations, 18(2), 181-192. http://doi.org/10.21511/imfi.18(2).2021.15

Dankiewicz, R. (2020). Analysis of companies' bankruptcy in Poland as compared with the cost of protection under trade credit insurance. Journal of International Studies, 13(4), 197-212. https://doi.org/10.14254/2071-8330.2020/13-4/14

Dankiewicz, R. Balawejder, B. Tomczyk, T. & Trynchuk, V. (2021). The impact of the COVID-19 pandemic on the due payments of Polish entreprises from selected industries. Investment Management and Financial Innovations, 18(2), 144-154. http://doi.org/10.21511/imfi.18(2).2021.12

Daugherty, M.S., Jithendranathan, Th. & Vang, D.O. (2021). Portfolio selection using the multiple attribute decision making model. Investment Management and Financial Innovations, 18(2), 155-165. http://dx.doi.org/10.21511/imfi.18(2).2021.13

Grytten, O. H. (2020). Two Centuries of Economic Growth: Norwegian GDP 1816–2020 (Discussion Paper No. 10/2020). NHH Dept. of Economics. https://dx.doi.org/10.2139/ssrn.3632902

Grytten, O.H. & Hunnes, J.A. (2021). Ethics, resource rent, environment and petroleum policy: the case of a small open economy. Environmental Economics, 12(1), 76-89. https://doi.org/10.21511/ee.12(1).2021.07

Khalatur, S. (2013). Features of the functioning mechanism of the investment market in Ukraine. Visnyk of Poltava State agrarian academy, 4. 121–124. [in Ukrainian]

Khalatur, S., Trokhymets, O., & Karamushka, O. (2020). Conceptual basis of tax policy formation in the globalization conditions. Baltic Journal of Economic Studies, 6(2), 81-92. https://doi.org/10.30525/2256-0742/2020-6-2-81-92.

Khalatur S., Khaminich S., Dubovych O, Budko O., & Karamushka O. (2020). Multiple system of innovation investment decisions adoption with synergetic approach usage. Entrepreneurship and Sustainability, 7(4), 2745-2763. http://doi.org/10.9770/jesi.2020.7.4(12)

Khalatur S., Stachowiak Z., Zhylenko K., Honcharenko O. & Khalatur O. (2019). Financial instruments and innovations in business environment: european countries and ukraine. Investment Management and Financial Innovations, 16(3), 275-291. http://dx.doi.org/10.21511/imfi.16(3).2019.25

Khalatur, S. (2017). Important provisions for the development of agriculture of Ukraine. Baltic Journal of Economic Studies, 3(2), 147-154. https://doi.org/10.30525/2256-0742/2017-3-2-147-154

Kireyeva, A. Nurbatsin, A. Yessentay, A. Bagayeva, N. & Turdalina, S. (2021). Exploring determinants of innovation potential of enterprises in Kazakhstan. Problems and Perspectives in Management, 19(2), 433-443. http://dx.doi.org/10.21511/ppm.19(2).2021.34

Oharenko, V. Merzlyak, A. Tomareva-Patlakhova, V. Vikhort I. & Skriabina D. (2021). State regulation of sustainable innovation project funding in the EU countries and Ukraine. Investment Management and Financial Innovations, 18(2), 374-390. https://doi.org/10.21511/imfi.18(2).2021.30

Ortiz-Villajos, J. M., & Sotoca, S. (2018). Innovation and business survival: A long-term approach. Research Policy, 47(8), 1418- 1436. https://doi.org/10.1016/J. RESPOL.2018.04.019

Ritter, T., & Pedersen, C. (2020). Analyzing the impact of the coronavirus crisis on business models. Industrial Marketing Management, 88, 214-224. https://doi.org/10.1016/j.indmarman.2020.05.014

Shkolnyk, I. Ladyka, Yu. Orlov, V. Aldiwani, K. & Kozmenko, Ye. (2021). Balancing state budget expenditures: A case of Ukraine using the simplex method. Public and Municipal Finance, 10(1), 34-46. https://doi.org/10.21511/pmf.10(1).2021.04

Vasylieva, N. (2019) Improvement of Agricultural Management: Functional Comparative Approach. Montenegrin Journal of Economics, 15(1), 227-238. https://doi.org/10.14254/1800-5845/2019.15-1.17

Velychko, O., Velychko, L. & Ramanauskas, J. (2016). Transformation and development of production-logistics enterprises in Ukrainian agrarian economy. Management Theory and Studies for Rural Business and Infrastructure Development, 38(1), 70–87. https://doi.org/10.15544/mts.2016.7

World Bank (2021). World Development Indicators 2021, World Bank. Retrieved from https://data.worldbank.org/indicator (accessed 11 May 2021)

Zinilli, A. (2016). Competitive project funding and dynamic complex networks: evidence from Projects of National Interest (PRIN). Scientometrics, 108(2), 633-652. https://doi.org/10.1007/s11192-016-1976-4

Svitlana KHALATUR
ORCID ID: https://orcid.org/0000-0001-8331-3341

Yuliia MASIUK
ORCID ID: https://orcid.org/0000-0001-6445-806X

Svitlana KACHULA
ORCID ID: https://orcid.org/0000-0003-2540-862X

Larysa BROVKO
ORCID ID: https://orcid.org/0000-0003-2577-0741

Oleksandr KARAMUSHKA
ORCID ID: https://orcid.org/0000-0002-9369-7972

Inna SHRAMKO
ORCID ID: https://orcid.org/0000-0003-4173-6578

Make your research more visible, join the Twitter account of ENTREPRENEURSHIP AND SUSTAINABILITY ISSUES: @Entrepr69728810