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Ukrainian Economy's Investment Security Model in the European Integration Vector of Development

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ABSTRACT. The article reveals theoretical and methodological principles of research of the main component of economic security, i.e., investment, and provides a retrospective analysis of foreign and domestic approaches to understanding the essence of investment security. The emphasis is made on changing the paradigm of the national and economic security studies and the way the issues of national and economic security components are addressed in the context of globalization. The main threats to the investment security at the present stage of the global development are identified. The intricate structure, complexity, uniqueness and individuality of the national economy investment model are investigated, its features and structural elements are explored. Activity of the investment security model of national economies, in which the constituent elements are constantly in dynamic, moving state, is shown. The main indicators of investment security in Ukraine that the authors use to prove the secure state of the investment model are reviewed and calculated. The effect of attracting investment from European countries, which manifests itself not only in increasing investment volumes, but also in improving the interaction between Ukraine and the EU countries on the basis of implementation of the Association Agreement and the Deep and Comprehensive Free Trade Agreement, is shown. The indicators of GDP and foreign direct investment in the national economy, the volume of attracted investment into the national economy from the EU countries have been analysed, and the slowdown of economic growth and factors influencing this situation have been identified. It is noted that Ukraine has serious needs for investment and financing of its needs, which requires the mobilization of significant international resources to support macroeconomic stability. The most realistic scenario of attracting foreign direct investment from the EU countries for the prospect, considering the current state and stage of development of the world economy is modified. Quantitative and qualitative factors influencing the attraction of European direct investment have been identified and summarized, among which the level of inflation, consumption level and external debt, which have the greatest influence on the growth of European investment, and on the basis of this the model was constructed using the package E- Views — 7. The factors that reduce the level of

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investment security and adversely affect the attraction of European investment have been identified. Measures that will increase the volume of attraction of investment from the EU countries and ways that are prospective directions of forming a national investment security model have been proposed.

KEYWORDS: investment security, investment security model, intricate structure, threats, national economy, institutionality, infrastructure, hierarchy, European investment, foreign direct investment, investment security indicators, investment effect, inflation rate, consumption level, external debt.

Introduction

Under current conditions of the world economy development, which is the result of globalization processes, and thus led to an increased level of interdependence of states, the issue of security, namely national and economic rapidly become in the focus of attention. More active and in some cases the aggressive impact of globalization on national economies causes the change of views on security issues, and the very paradigm of economic security, including the issues of its components, in particular investment security, is changing. The issue of investment security research is caused not only by globalization, but also by the liberalization of capital markets and the trends of foreign direct investment, which have changed significantly since the beginning of the XXI century. Of course, all exogenous and endogenous factors, risks and threats that affect the security situation cannot be taken into account, but countermeasures and mitigation measures should be taken.

Investments are needed to increase economic growth; as a rule, under conditions of insufficient own investment, countries attract foreign. Ukraine refers to countries where there is a big gap between supply and demand, and therefore the economy mostly attracts foreign direct investment, rather than invests abroad. At the same time, foreign direct investment should be a safe factor for national economic growth. Problems of investment security are dealt with and investigated by a number of foreign specialists, namely V. Baz[2], A. Bevan and S. Estrin[3], J. Gadys[4], J. Jackson[5] et. al.; and Ukrainian experts, the research and scientific works by O. Vlasiuk[6], V. Geyts[7], R. Datskiv[8], V. Liubimov[9]

[2] Bath V. Foreign Investment, the National Interest and National Security — Foreign Direct Investment in Australia and China // *Sydney Law Review*, 2012 — pp. 5-34.

[3] Bevan A.A., Estrin S. *The Determinants of Foreign Direct Investment in Transition Economies* // Centre for Economic Policy Research, London, 2000 — CEPR Discussion — P. 2638

[4] Gaddis J. *Surprise, Security, and the American Experience*. — Cambridge: Harvard University Press, 2005 — 160 p.

[5] James K. Jackson. *Foreign Investment and National Security: Economic Considerations, Congressional Research Service*, 2013, Apr. 4-29 p.

[6] *Ukraine's Economy Security and Competitiveness within Globalization* (ukr. *Bezpeka ta Konkurentospromozhnist Ekonomiky Ukrainy V Umovakh Hlobalizatsii)*: Monohrafiia / Editor: O. S. Vlasiuk — K.: NISD, 2017 — 384 p. [In Ukrainian].

S. Moshensky[10], A. Sukhorukov and Yu. Kharazishvili[11] and others should be noted. All experts, scientists, as a rule, consider components of investment security, carry out calculations of the integral indicator and pay attention to the interconnection of foreign direct investment and economic growth in the host countries. The issues of influence of exogenous and endogenous factors on attraction of investment in the investment security model in the context of the European integration vector of development and signing of the Association Agreement between Ukraine and the EU remained insufficiently highlighted.

The purpose of the article is to study the peculiarities of formation of investment security model of the national economy and the influence of factors on the volume of attraction of European investment for further safe economic development.

The main principles of the study of investment security problems

While investigating investment security problems, we conducted a retrospective analysis of various approaches to understanding the essence of economic and investment security among foreign, post-Soviet and Ukrainian experts, which gave an opportunity to focus on the fact that in the new millennium, in a dynamic globalization process, a "new / modern" concept of "economic security" is used due to the emergence and use of new elements in the research methodology. The investment is an integral part of economic security, which became active and the most investigated with the growth of capital movement in the world market. The methodological principles of the study of economic security and approaches to its components have changed.

The National Institute for Strategic Studies considers "investment security" category as the level of investment in the economy, which will contribute to enhanced reproduction, restructuring and technological

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[7] *Economic Security Modelling: State, Region, Enterprise* (ukr. *Modeliuvannia ekonomichnoi bezpeky: derzhava, rehion, pidpryiemstvo*: monohrafiia / Editor: V. M. Heyets — Kh.: Vyd-vo «IN-ZhEK», 2006. — 240 p. [In Ukrainian].

[8] Datskiv R. *Economic Security of a State in Conditions of Global Competition (*ukr. *Ekonomichna bezpeka derzhavy v umovakh hlobalnoi konkurentsii).* — Lviv: Tsentr Yevropy, 2006 — 160 p. [In Ukrainian].

[9] Liubimov V. I. Definition and Criteria on Investment Security (ukr. Poniattia ta kryterii investytsiinoi bezpeky / V. I. Liubimov // *Derzhavne upravlinnia: udoskonalennia ta rozvytok.* http://www.dy.nayka.com.ua/index.php?operation=1&iid=136 [In Ukrainian].

[10] Moshenskyi S. Investment Security in the system of State Economic Security: Definition, Categories, Essence (ukr. Investytsiina bezpeka v systemi zabezpechennia ekonomichnoi bezpeky derzhavy: poniattia, katehorii, sutnist) // *Nauka moloda*, 2008 — No. 10. — pp.166-171. [In Ukrainian].

[11] Sukhorukov A. I., Kharazishvili Yu. M. On Complex Assessment Methodology of State Economic Security Indicators (ukr. Shchodo metodolohii kompleksnoho otsiniuvannia skladnykiv ekonomichnoi bezpeky derzhavy) / Sukhorukov A. I., Kharazishvili Yu. M. // *Strategic priorities* (*Stratehichni priorytety)*. — 2013. — No.3 (28). — pp. 5–15. [In Ukrainian].

rearming[12]. Ukrainian scientist S. Moshensky understands investment security as "the ability to optimally meet the current needs of economy in capital investment by volume and structure, taking into account the effective use and return of the funds invested, as well as achieving the optimal balance between the size of foreign investment in the country and domestic — abroad, maintaining a positive national payment balance"[13]. A. Meshcheriakov and L. Novikova reveal this concept in their study through the investment process in a certain state of investment sphere, "in which the economy is able to maintain a sufficient level of investment resources under the conditions of internal and external threats, which is necessary to ensure sustainable development and social and economic stability of the country, growth of competitiveness of its economy and welfare of the population"[14]. O. Yurkevych investigates investment security through the "protection of interests in the field of investment ..., which is ensured by the creation of appropriate conditions for the formation of investment resources and their efficient use"[15]. While summarizing this notion of "investment security", we note that investment security is considered firstly as a certain level of investment in the economy, as a need for foreign investment, and secondly, as a state of investment, and thirdly, as a property of the investment system, and, fourthly, as a sustainable economic development that leads to the growth of competitiveness of the national economy. Thus, investment security is a complex notion that should include modern methodological approaches to the formation of investment system as a whole, modern trends of globalization development, considering the dynamic impact of foreign investment on the economies of countries and the peculiarities of creating an attractive investment environment for countries that need foreign investment.

Problems of providing investment security should contain three main approaches, and they are to be resolved: firstly, the problems of investment activity; secondly, the problems of investment sphere; and thirdly, the problems of mechanism of attraction, realization and effective use of foreign investment. Current threats to national,

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[12] *Methodic recommendations on assessing the economic security level of Ukraine* (ukr. *Metodychni rekomendatsii shchodo otsinky rivnia ekonomichnoi bezpeky Ukrainy)* / Za red. A. I. Sukhorukova. — K.: NIPMB, 2003. — 64 p. [In Ukrainian].

[13] Moshenskyi S. Investment security in ensuring economic security of a state: definition, terms, essence (ukr. Investytsiina bezpeka v systemi zabezpechennia ekonomichnoi bezpeky derzhavy: poniattia, katehorii, sutnist) // *Nauka moloda*, 2008 — No. 10. — pp.166-171. [In Ukrainian].

[14] Meshcheriakov A.A., Novikova L.F. Investment security of a state (ukr. Investytsiina bezpeka derzhavy) / A.A. Meshcheriakov, L.F. Novikova // *Visnyk Akademii mytnoi sluzhby Ukrainy*. Ser.: Ekonomika. — 2013. — No. 2. — pp. 23-29. [In Ukrainian].

[15] Yurkevych O.M. Assessment of Ukraine's Investment Security Level (ukr. Otsinka rivnia investytsiinoi bezpeky v Ukraini) / O.M. Yurkevych // *International Economic Policy* (ukr. *Mizhnarodna ekonomichna polityka)*: nauk. zhurnal / K.:KNEU, 2012. — Spets. vyp.: u 2 ch. — Ch. 2. — pp. 402-407. [In Ukrainian].

economic, and investment security are seen by most professionals as challenges for states. The main such threats to investment security include foreign investment, which[16]:

- threaten the sovereignty and independence of states;
- can hinder the production of materials, technologies, etc. in the sphere of military and industrial complex;
- is untimely received by priority sectors, which require continuity of investment operations;
- does not respect the rule of law and democracy in the host country;
- is related to criminal activity;
- is aimed at money laundering;
- has negative impact on the natural resources of the host national economy.

Despite the threats, economic growth and activation of the national economy require satisfaction of the critical need for an increase in investment flows, considering secure economic development. Dynamics and volumes of attraction of foreign direct investment (FDI) influence the investment activity level, and thus the economic growth. It was during the last quarter of the last century that almost all the countries of the world gradually opened to foreign investment, and host countries, as a rule, had a positive effect. Foreign investment contributed to their economic growth and development, creating jobs and generally raising welfare.

Consequently, the main task for national economies and states is the balance between foreign investment attracted and investment security. The policy should be such as to create the right conditions for ensuring national security and promote the attraction and effective use of foreign investment.

Investment security model of national economy

For each state, the construction of investment security model of the national economy is unique and individual, which lies in the sphere of realization of the national investment policy taking into account national interests. The latter are the driving force of the country's economic development, the basis of consensus, the strongest factor in mobilizing society and the means of realizing its potential. According to the study of political realism school, national interests are the basis of

[16] Wehrlé, F. and J. Pohl. *Investment Policies Related to National Security: A Survey of Country Practices* — OECD: Working Papers on International Investment — Publishing, Paris — 2016 — No.02 — 80 p.

international relations as such[17]. The realization and protection of national economic interests is the maintenance of economic and its component, investment security.

Investment security model of the national economy is considered of intricate and complex structure, where:

firstly, a certain state, the characteristic of investment security should be such to (a) counter existing threats (that is, the aggregate of those conditions and factors that contribute to the realization of threats to the economy); (b) be able to withstand the risks (namely, any damage of any probable nature);

secondly, the proper state of investment security is influenced by (a) appropriate monitoring, which is carried out on the basis of assessment of the main indicators and means warning against negative phenomena and hazards; (b) analysis and modelling conducted on the basis of an assessment of the level of investment security in accordance with the thresholds;

thirdly, an acceptable, proper description of investment security is formed by (a) a favourable climate (investment attractiveness) that assesses the attractiveness of investment environment; (b) investment activity that is considered through assessment of the level of investment in the country; (c) economic growth, which is analysed through the macroeconomic indicators of the development of national economy.

The investment security model is stipulated by the multifactority of processes and the interconnection of its elements; the lack of sufficient quantitative information on the dynamics of processes, which in turn leads to a qualitative analysis of processes; the variability and speed of process changes in time, etc. The elements of investment security model are the level of safety, the provision of legal regulation in the investment sphere, favourable investment climate, favourable investment infrastructure, provision of guarantees to foreign investors, identification of priority investment spheres, stimulating measures for attraction of foreign investment, state monitoring and regulation of the investment process, positive image of the state, activity of the state in the sphere of investment activity in relation to attraction of foreign investment.

In modern conditions, in the investment security model of national economy, intricate structure means the interconnection of quality subsystems that are formed by economic, social, institutional, infrastructural and other hierarchical structures; this means that the

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[17] *Resursy ta modeli hlobalnoho ekonomichnoho rozvytku*: monohrafiia / Edited by:Dr. sc., prof. D.H. Lukianenko, A.M. Poruchnyk. — K.:KNEU, 2011 — 703 p. // Tkalenko S.I. Yevropeiskyi intehratsiinyi vektor Ukrainy v systemi natsionalnoi ekonomichnoi bezpeky — pp.400-415. [In Ukrainian].

model of investment security is represented by the aggregate plurality of elements, which on the one hand are interconnected and affect each other, and on the other hand are independent. We consider paradigmatic intricate structure of investment security as relatively new and dynamic security sector of the state with a large number of qualitative and quantitative elements, which differ in their properties, functional purpose, complex internal structure and represent a single whole (model).

The paradigmatic intricate structure of the investment security model of the national economy should be classified as a class of active systems, since all its constituent elements are constantly in the dynamics, and this model has no sustainable value. The activity of investment security model is manifested in the successive transition from one "harmonic" state to the other "harmonic" state at certain intervals, characterized by a "disharmonious" state. In such a "harmonious" state, there is a pressure between the constituent elements, which are exogenous and endogenous, which lead to the movement of the entire system in the middle of the investment security model. The way investment security elements react to pressure, and the change of the "harmonic" state is changing rapidly, that is, the change in the value of integral indicator of investment security.

The main indicators of the investment security model of the Ukrainian economy are calculated by the authors and presented in Table 1. Analysis of the most indicators testifies to the safe level of further economic development due to the huge lack of attracted foreign investment in the national economy. The reasons for this insufficiency should be noted, there is ineffective reform in Ukraine, high risk for foreign investors, both in the political and in the economic environment.

While describing the dynamics of foreign investment inflow in this decade (relative to GDP per capita), this indicator has deteriorated since 2007 due to the impact of global financial crisis, slow steps towards the exit from the situation and weak reference point for economic growth, economic and political situation in the country in recent years. At the same time, since 2009, the dynamics of the total volume of FDI to GDP, which according to the threshold value should be at least 25 percent, it reached this level and to this day it is within the range of 29-45 percent, that occurred not due to the increase in the volume of attraction of foreign investment (although in absolute terms, an outflow is observed), but to a significant reduction of GDP (in particular, due to the anti-terrorist operation in the country) and slowing economic growth in general.

Table 1

INDICATORS OF INVESTMENT SECURITY OF UKRAINE, 2007-2017[18; 19]

Threshold values	FDI inflow over the last year		FDI inflow over the past three years		The ratio of investment in fixed assets to GDP, percent	FDI ratio to GDP, percent
	Net FDI growth rate to GDP, percent	FDI inflow to the number of inhabitants	FDI net growth ration over the last 3 years to GDP, percent	FDI inflow over the past 3 years per capita		
	not less than 5-10 percent	not less than 500 USD			not less than 25 percent	
2007	5.3	634.0	4.3	136.2	1.7	14.5
2008	3.8	769.9	4.4	179.7	1.3	15.7
2009	2.1	845.8	3.7	99.6	1.3	29.0
2010	2.7	988.5	2.9	88.2	4.1	27.6
2011	3	1054.7	2.6	96.3	3.6	26.8
2012	2.7	1133.9	2.8	112.1	2.9	26.4
2013	2.6	1180.3	2.8	115.8	2.9	27.1
2014	2.6	897.0	2.6	77.4	1.8	40.2
2015	3.1	854.7	2.8	59.5	4.1	44.7
2016	3.1	916.7	2.9	64.1	4.7	38.7
2017	2.3	918.9	2.8	74.6	1.7	34.9

The indicator of dynamics of foreign investment in the country per capita is the best indicator. The accepted lower threshold of USD 500 per capita was exceeded in 2006, and for the last decade it has been kept at such a minimum level. Of course, one should not compare such an indicator with developed economies, because its value is extremely low, but it is necessary to strive for its growth.

Indicator of the ratio of investment to fixed assets to GDP over the last ten years has been unsatisfactory and well below the established threshold, which testifies to the total moral obsolescence of equipment and fixed assets, technical obsolescence, which leads to inefficient use of

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[18] Tkalenko S.I. World FDI Market Tendencies and their Impact on Ukraine's Investment Security (ukr. Tendentsii svitovoho rynku priamykh inozemnykh investytsii ta yikh vplyv na investytsiinu bezpeku Ukrainy) // *Naukovyi visnyk Derzhavnoi akademii statystyky, obliku ta audytu.* — 2010. — No.1 (26) — pp.57-63. [In Ukrainian].

[19] Complied and calculated by authors based on data of: National Bank of Ukraine, www.bank.gov.ua, State Statistics Service of Ukraine, www.ukrstat.gov.ua, The World Bank, https://data.worldbank.org/indicator/BX.KLT.DINV.WD.GD.ZS

resources, existing potential, decrease of competitiveness of national goods and the country as a whole.

The poor level of investment security indicators hinders economic development. Moreover, we believe that the growth of national economy depends to a large extent on the volume and efficiency of the use of attracted foreign direct investment in fixed assets. Consequently, the threat to investment security is the lack of investment in the real sector of economy. This situation assumes, first of all, the promotion of favourable investment climate and investment environment.

Identification of the effect of European FDI on Ukraine's economic development

Accumulation of investment resources and their effective use directly influence the economic growth of any national economy, as well as determine the future trends of economic development. At the same time, it should be taken into account that investment should be implemented in effective forms, directed at promising directions of economic development, promising industries, sectors of the economy, taking into account national interests. Inefficient use of investment will lead to opposite trends: realization of investment in the industries that are the most likely to generate profits for investors (national interests in such industries do not always coincide with the interests of foreign investors), outflow of foreign capital from the country, and as a consequence, GDP reduction, production volatility, slowing economic growth (or the general decline in economic growth). Thus, the efficiency of using foreign direct investment, taking into account the European integration vector for Ukraine's economic development, that is, from EU countries, will not only promote economic growth, but will also lead to a synergistic effect in general, which manifests itself not only in increasing the volume of attracted European investment but also in improving the interaction between subjects of the countries in accordance with the peculiarities of implementation of the Association Agreement between Ukraine and the EU and the Deep and Comprehensive Free Trade Agreement.

Our empirical studies showed the correlation between growth of foreign investment and economic growth. Statistics testify to the current slow economic growth in the national economy (Fig. 1). The slowdown in economic growth is, of course, primarily stipulated by the economic and political situation in Ukraine, the modernization of its processes in the economy, and further reforms.

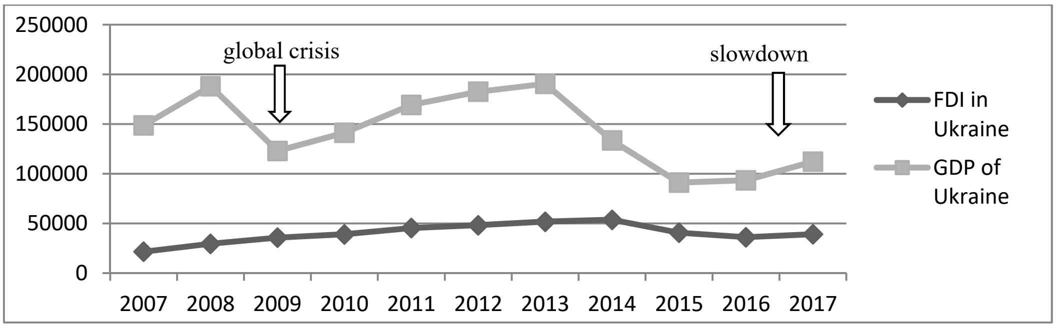

Fig. 1. Indicators of GDP and FDI in Ukraine over the last decade (million USD)[20]

Attracting of investment from countries of the European Union has taken place since Ukraine's independence. Starting from 2004, there has been a significant annual increase in the volume of European investment attracted, but after the global financial crisis of 2007-2008, the attraction of investment from the EU countries increased in absolute terms up to 2014 and then significantly decreased, as well as the relative indicator of the EU countries in total volume of investment (table 2). This trend was influenced by the anti-terrorist operation in the territory of Ukraine, and moreover, the outflow of investment to the EU countries in an unstable and uncertain political and economic situation has increased significantly.

Table 2

THE CIRCULATION OF INVESTMENT BETWEEN UKRAINE AND THE EU COUNTRIES, million USD[21]

Year	Direct investment in Ukraine,	Direct investment from Ukraine
	percent of the EU countries in the total volume of attracted investment	
2007	92.2	95.6
2008	95.4	95.9
2009	88.5	94.9
2010	80.9	94.9
2011	81.5	94.9
2012	81.5	94.4
2013	79.6	93.6
2014	76.4	92.4
2015	76.2	95.1
2016	73.0	96.8
2017	66.9	96.4

[20] Complied by authors based on data of: State Statistics Service of Ukraine, http://ukrstat.gov.ua (accessed on: 24.01.2018)

[21] Ibid.

Fig. 2 shows volumes and the tendency of attracting foreign investment from EU countries to the national economy. Today, the total volume of European investment attraction is at the level of 2008. Despite such a recession, we consider a promising and realistic scenario to increase this level by 2020. In order to determine the prospects for attracting foreign direct investment from the EU countries, we selected the empirical function based on the basis of analysis of five functions (linear, polynomial, exponential, power, logarithmic).

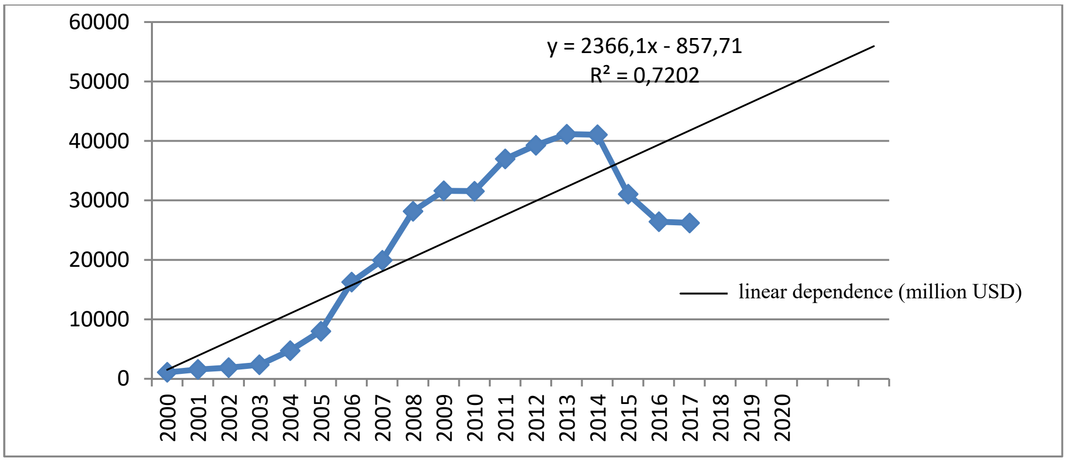

Fig. 2. Direct foreign investment from the EU countries and forecast for 2018-2020, million USD[22]

We used linear function in which the reliability factor is 72 percent (which means the good quality) to predict trend lines and identify a realistic scenario. Consequently, the results of the forecast are acceptable, the predicted data is given in Table 3. In general, both our forecast and the forecast from international experts regarding the attraction of European investment are positive up to 2020, but it involves the further formation of an attractive investment environment.

Among the significant factors that influence the process of attracting foreign investment is economic growth in the country (if the economy increases, this is a positive signal for foreign investors), as well as inflation and interest rates, external debt and foreign trade. In addition to such quantitative factors, the volume of attracted foreign investment is also influenced by qualitative factors, in particular, the investment system, investment climate and environment, the developed financial market and financial structure.

[22] Complied by the authors

Table 3

REALISTIC SCENARIO OF FDI ATTRACTION FROM THE EU COUNTRIES, 2018-2020 (billion USD)[23]

Year	Conditioned time, t	million USD	Realistic forecast, R2 = 0.7202
2000	1	1091.2	-
2001	2	1565.4	-
2002	3	1868.9	-
2004	4	2345.1	-
2005	5	4739.7	-
2006	6	7997.8	-
2007	7	16254.6	-
2008	8	19912.4	-
2009	9	28175.4	-
2010	10	31608.5	-
2011	11	31538.4	-
2012	12	36969.1	-
2013	13	39268.9	-
2014	14	41132.3	-
2015	15	41032.8	-
2016	16	31046.9	-
2017	17	26405.6	-
2018	18	-	44098.19
2019	19	-	46464.29
2020	20	-	48830.39
2021	21	-	51196.49
Changes during 21 years, 2021 compared with 2000			+33 percent

After analysing the above-mentioned quantitative factors that influence the volume of European investment attracted, namely the accession, we used the most significant of them while constructing the models. The construction of model on the impact of the most significant factors on the growth of European investment (FDI) was carried out using the E-Views-7 package. We considered inflation level (IL), consumption level (CL) and external debt (ED) as such factors. The authors constructed a correlation matrix (Table 4), as well as provided the results of multifactor regression (Table 5).

[23] Authors' calculations

Table 4

CORRELATION MATRIX[24]

Factors	FDI	IL	CL	ED
FDI	1.000000	-0.602598	0.013127	-0.903142
IL	-0.602598	1.000000	-0.700216	0.765968
CL	0.013127	-0.700216	1.000000	-0.225516
ED	-0.903142	0.765968	-0.225516	1.000000

Table 5

RESULTS OF MULTIFACTORIAL REGRESSION IN GROWTH OF EUROPEAN FDI[25]

The dependent variable is the growth of European investment
The method used is the least squares method
Number of observations used – 12 (2012-2017)

Variable, factor	Coefficient	Standard error	t-Statistics	Probability
IL	-0.112527	0.312814	-0.359727	0.7284
CL	-0.437563	0.401566	-1.089642	0.3076
ED	-0.448361	0.147870	-3.032127	0.0163
C	42.48693	10.84444	3.917855	0.0044

R-squared	0.856244	Mean dependent var	-5.316667
Adjusted R-squared	0.802335	S.D. dependent var	11.65479
S.E. of regression	5.181664	Akaike info criterion	6.389331
Sum squared resid	214.7971	Schwarz criterion	6.550966
Log likelihood	-34.33599	Hannan-Quinn criter.	6.329488
F-statistic	15.88326	Durbin-Watson stat	2.028412
Prob (F-statistic)	0.000989		

The correlation matrix explains relation between the selected IL, CL, and ED: a strong negative correlation between external debt, inflation level and the growth of European investment, small positive correlation between consumption level and the growth of European investment. In essence, we have a fairly acceptable correlation result, which confirms the success of the constructed model.

As to the quality requirements of the factors, we determine the level of 5-10 percent of significance. Consequently, at the same time we have the fact that all the variables (factors) of our choice of regression equation are not equal to zero; R^2 = 85.6 percent, which means how well the criteria we have selected explains the changes in investment

[24] Complied by the authors
[25] Author's calculations

growth; R^2 refers to the first group of the value of the determination coefficient, which means high quality; the probability of accepting the null hypothesis is close to zero; the Darby-Watson criterion of 2.02 means the absence of auto-correlation. This model was tested for the presence of autocorrelation in it, which was done with the help of the Breush-Godfrey test, which confirmed that there is no auto-correlation, the probability of accepting the null hypothesis is 17.3 percent. Also, the model has been tested for heteroscedasticity (in the presence of its findings, the selected variables / model factors, as well as selected intervals of confidence and relative testing of the statistical hypothesis regarding the impact of variables on the growth of European investment may be false). Verification of the model for heteroscedasticity was performed using tests such as White, Breush-Pagon-Godfrey, Glazier, Harvey; their results are shown in Table 6.

Table 6

RESULTS OF TESTS FOR HETEROSCEDASTICITY[26]

Tests	F-statistic	Prob. F	Obs*R-squared	Prob. Chi-Square	Scaled explained SS
White	199.7311	(9,2) 0.0050	11.98666	(9) 0.2141	5.097927
Breush-Pagon-Godfrey	0.487015	(3,8) 0.7007	1.853129	(3) 0.6034	0.788136
Glazier	0.869014	(3,8) 0.4960	2.949410	(3) 0.3995	2.291054
Harvey	1.576804	(3,8) 0.2693	4.459003	(3) 0.2160	3.866194

According to the White test, the significance of regression is 21 percent; according to the Glazier test, the significance of regression at the level of F-statistic = 50 percent and R^2 = 40 percent; according to the Breush-Pagon-Godfrey test — at the level of F-statistic = 70 percent and R^2 = 60 percent; according to the Harvey test — at the level of F-statistic = 27 percent and R^2 = 22 percent; according to the AFC test, the significance of regression at the level of F-statistic = 43 percent and R^2 = 77 percent — that is, all the tests confirm the absence of heteroscedasticity. Most of the determination coefficients are related to the first and the second groups, which should be interpreted as the high and good quality of the selected variables, which explain the high impact of selected macroeconomic factors on the growth of European investment in the national economy. So, this confirms the fact that we have the right to adopt a null hypothesis.

Also tests of this model for the correlation between the selected variables were conducted (Fig. 3). In the course of analysis of dependence

[26] Authors' calculation

between the three variables / factors chosen by us — IL (Fig. indications CPI), CL (CO), ED (ED) the so-called scatter diagram is used. This diagram clearly shows how variables can be closely interconnected; the set of such points forms the so-called "cloud". The more scattered points of the selected variables — the inflation level, the consumption level, external debt, the less interdependent variables are. In our case, the points of selected variables are scattered fairly widely, and therefore we argue that there is a weak link between the variables, that is, there is no zero-correlation type in our model.

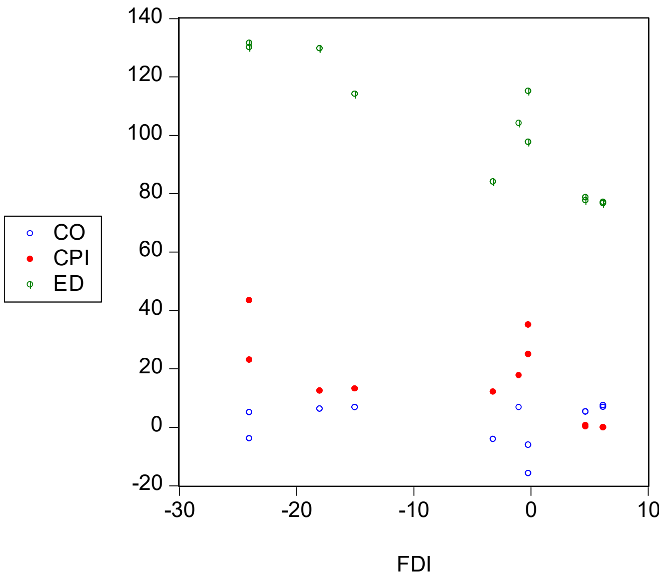

Fig. 3. Scattering diagram of variables (CL, IL, ED), which explains the growth of European investment in the national economy[27]

Model verification check is performed on the explanatory capability, since the constructed model should accurately reflect the growth of European investment through selected independent variables / factors. Modified values clearly reflect actual values, and therefore, the model can be considered fully acceptable, with sufficiently high explanatory capability. Thus, we have an equation that is statistically significant and shows the dependence model of the growth of European investment on the inflation level, consumption level and external debt, and has the following form:

$$\Delta FDI = -0{,}11252 * IL - 0{,}43756 * CL - 0{,}44836 * ED + 42{,}48693 \quad (1)$$

[27] Authors' calculations

This model is explained as follows:

- an increase in inflation by one percent leads to a decrease in the growth of European investment by 11 percent, which means raising the level of riskiness of investment in conditions of growth of inflationary processes. Reducing and stabilizing inflation rates tends to increase the growth of European investment;
- Growth in consumption by one percent reduces the growth of European investment by 43 percent, and shows that the propensity to consume reduces savings and consequently reduces existing investment and volumes of attraction. There is a direct link between investment and propensity to consume, the marginal efficiency of capital and the rate of interest;
- Growth of the level of external debt is a risk to the host country, since it is probable that the loan amount will cover the problems in the budget rather than the effective use of investment, primarily in the real sector. Consequently, growth of the level of external debt by 1 percent leads to a decrease in the growth of European foreign direct investment by 44 percent.

Conclusions

The importance of the investigated issues is related to the fact that in the XXI century in the conditions of dynamic development of globalization processes, the paradigm of economic security has changed, which has led to the use of a new, modern approach to the study of its constituents, and in particular to investment security, which is a complex concept and requires modern methodological approaches to its interpretation and understanding. However, scientists and experts are approaching the explanation of the concept of “investment security” differently, there is no single understanding. Summarizing the investigated concept of investment security, on the one hand, it is necessary to distinguish four approaches which reveal its essence – thus, how the investment level, the state of investment sphere, the property of the investment system, stable economic development, and on the other hand, investment security is connected with the volume of attracted foreign direct investment, which directly affects economic development. The main task for the national economy is to maintain a balance between investment security, as a component of the economy, and the volume of attracted foreign investment, which will determine sustainable economic development and contribute to raising the level of international competitiveness of the state.

Each national economy is characterized by an individual and unique model of investment security with a set of quantitative and qualitative indicators. This model in host countries should be in line with national economic interests. Such a model is stipulated by the interconnection of its structural elements and the multifactority of processes that occur in the middle; and has intricate structure, which means the interconnection of all its subsystems, which are formed by various structures. The most clearly defined intricate structure of the investment security model can be illustrated by constructing cognitive maps, which is the next and more advanced stage of consideration of this problem.

The analysis of the integral indicator of investment security conducted by us showed the safe level of economic development of Ukraine. On the one hand, it is a positive fact, on the other hand, it is negative because the national economy lacks its own resources for further sustainable growth and foreign direct investment is not properly attracted, in particular from the EU countries, considering the European integration vector of development. The small volumes of European investment attracted can be explained by the following reasons: an unstable socio-economic, political and economic situation in the country since 2014, which had a negative impact and moreover led to an outflow of capital; inefficiency of the right provision and the subsequent slow pace of reforms; lack of certainty of priority investment spheres; lack of proper monitoring and regulation of the investment process; not sufficiently favourable investment environment for foreign and European investors, which also became a catalyst for such a level of investment attraction.

While studying this issue for a long time, it should be noted that in the national economy there is a disproportionate division of investment, and not always the interests of foreign investors coincide with national interests, and moreover, such foreign investment may pose a threat to safe further economic development. In general, attracting foreign investment is a long process, but it should be transparent and consistent with contemporary national interests in the context of implementation of the national economic development strategy. In general, the investment, both own and attracted, stimulates economic sustainable growth, moreover, it reduces the unemployment rate in the country, brings the latest technologies, know-how, advanced management experience, promotes innovative development, increase the competitiveness of national goods and country in general. Consequently, in order to increase the volume of European investment attraction, the authors proposed to create a favourable investment environment, investment climate, favourable business environment; efficient and effective investment market; to promote the level of efficiency of cooperation with European investors; to stimulate investment activity using a variety of tools; to use existing investment potential more effectively. That is, the perspective direction of forming the national investment security model consists of three main components: firstly, an attractive, comfortable environment for European businesses, investors and interested stakeholders; secondly, modern investment infrastructure; and thirdly, modernization of the investment sphere.

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