

Ensuring security the movement of foreign direct investment: Ukraine and the EU economic relations

Natalia V. Trusova^{1*}, Tetiana A. Cherniavska², Yurii Ye. Kyrylov³, Viktoriia H. Hranovska⁴,
Svitlana V. Skrypnyk⁵, Liubov V. Borovik⁵

¹ Department of Finance, Banking and Insurance, Dmytro Motornyi Tavria State Agrotechnological University

² Department of Finance, Accounting and Logistics, State University of Applied Sciences in Konin

³ Department of Public Management and Administration, Kherson State Agrarian and Economic University

⁴ Department of Hotel and Restaurant and Tourism Business, Kherson State Agrarian and Economic University

⁵ Department of Accounting and Taxation, Kherson State Agrarian and Economic University

ABSTRACT

It is well known that an important positive result of attracting foreign direct investment for the country's economy can be the receipt and subsequent distribution of more advanced production and management technologies. That is why the injection of foreign capital is necessary not only for direct financing but also for the general development of the invested country. The purpose of this article is to consider the theoretical, methodological and practical aspects of ensuring the level of security of investment attractiveness of the world's economies in the polystructural space of foreign direct investment and to highlight the aggregated factors of the investment attractiveness index that characterize the investment climate, investment activity and the state of economic development of the country. To determine the synergistic impact of foreign direct investment on the indicator of the country's investment attractiveness the methods of analysis, synthesis, comparison and mental modelling were used. As a result, it was found that the EU countries are one of the largest investors (the share 65-90% of all investments) in the polystructural space of international investment. It was concluded that in the context of deepening cooperation and realizing the unique capabilities of the states in shaping the global investment climate, it is necessary to ensure a high level of employment of the population by creating new jobs, updating the transfer and introducing the latest technologies, solving social problems at the general level; to carry out an investment modernization of the economy to increase the fixed assets of enterprises; to implement a more effective investment policy.

Keywords: Investment infrastructure, National economy, State's development, Economic growth, International investment.

Corresponding Author:

Natalia V. Trusova
Department of Finance, Banking and Insurance
Dmytro Motornyi Tavria State Agrotechnological University
72310, 18 B. Khmelnytsky Ave., Melitopol, Ukraine
E-mail: nv.trusova6607@tanu.pro

1. Introduction

The globalization impact and transformation of international investment relations between countries around the world deepen the competition in the foreign investment market and increasingly affect their investment attractiveness. The lack of incentives for the secure economic development of countries and the instability of public investment policy led to poor and inadequate response to international investment challenges. At the same time, government initiatives that depend on international organizations make it possible to unify investment standards and control procedures for compliance with international standards, to provide guarantees to foreign investors, and to establish a legal regime for investment, thus playing an important role in creating the right level of financing for key industries. At the same time, creation of favorable investment climate for investors, attraction of foreign investments, formation of investment infrastructure

and adequate investment mechanisms make it possible to ensure positive economic growth of the development of countries at the expense of foreign direct investment in the long run. In the global structure, foreign direct investment is a means of achieving the goals of the European countries' development strategy and an integral part of the reproduction process of production, which provides for significant shifts in the growth rate of the investment attractiveness of the economy through a formalized perception of the international investment environment.

Fundamental research in the area of investment attractiveness of the national economy, in terms of providing a safe environment for investing the reproduction process of production, made a significant contribution to science, the research was made by such scientists as M.J. Oseia, J. Kim [1], M. Liu et al. [2], A. Dhrifi et al. [3], S. Saidi et al. [4], M.W. Zafar et al. [5], O. Golubeva [6], E.E.O. Opoku, M.K. Boachie [7], A.T.N. Nguyen et al. [8], S. Tiba, F. Belaid [9], Y. Zhao et al. [10], J. Chena et al. [11], J. Eyvazov [12]. Among the leading scientists who have researched the issues of forming a secure level of investment attractiveness of the economy of the country the works of such scientists as J. Heavilin, H. Songur [13], R. Mahadevan, Y. Sun [14], F. Fagbemi, T.T. Osinubi [15], R. Ramachandran et al. [16], F.J. Contractor et al. [17], H. Liu et al. [18]. The problems of the impact of foreign direct investment on economic growth were explored by B.A. Blonigen et al. [19], A.V. Kuznetsov [20], Y. Huang et al. [21], L. Slesman et al. [22], K. DeGhetto et al. [23] and others.

Further scientific search leads to the development of new approaches to assessing the investment attractiveness of the world economy in the polystructural space of foreign direct investment, through streamlining their criteria parameters, consistent with the practice of international investment. In the meantime, foreign investment raises the issue of assessing the economic costs and benefits of mergers and acquisitions of investment assets and measures to limit them for reasons of national security, taking into account the potential risks of the international environment.

2. Material and methods

The state's investment policy is implemented on the basis of national interests, limiting risks and costs, determining the impact on the international economic environment and the placement of international investment flows, which are realized on the basis of effective investment of own resources, mobilization of private investment resources, search and attraction of foreign investors, optimization activities (the ratio of national and foreign capital). Changes in investment policies that take place in countries contribute to increasing the level of investment attractiveness of their national economy. At the same time, these changes may manifest themselves as temporary turbulence in a changing world, in which countries are trying to find new landmarks, based on long-term political shifts. Investment regime based on clear rules is widely supported internationally and aimed at ensuring sustainability and openness, can help reduce uncertainty in investment relations and give them greater stability. A methodological approach to assessing the level of investment attractiveness of a country's economy is crucial because it provides the basis for identifying effective regulatory instruments and methods for public investment policy to strengthen and enhance its impact in the global polystructural space of foreign direct investment [24-30].

It should be noted that foreign direct investment (FDI) ensures the rapid growth of international business, activating the multiplier effect of production investments in the material base (as opposed to speculative and volatile portfolio investments, which can be suddenly deduced with negative consequences for the national economy) for socio-economic stability of the country [31-38]. At the same time, competition and stimulation of business development make it possible to accelerate the development of industries, and the proper allocation of investment resources in the production process provides an increase in production of high value-added export products, innovative goods and production technologies focused on quality, consumer, employment and raising the level of income of population, tax base extension [39-45].

In the context of the implementation of investment policy and factors in the field of international investment affecting foreign direct investment (FDI) flows, we have developed a model of investment attractiveness of the economy of the state, the mathematical form of which we propose to consider through the function of optimization [46-50] (Eq. 1):

$$\left[\begin{array}{l} F(X_1, X_2, \dots, X_{n-1}, X_n) \rightarrow \max \\ Y_r \rightarrow \min \\ X_d \rightarrow \min \\ Y(S_1, S_2, \dots, S_{n-1}) \rightarrow \text{optimal} \end{array} \right], \quad (1)$$

where: $F(X_1, X_2, \dots, X_{n-1}, X_n)$ – a function that seeks to ensure a status of the state that can be characterized as investment attractive; Y_r – a function that identifies and strives to minimize the risks of investment attractiveness; X_d – a function that identifies and seeks to minimize threats that reduce investment attractiveness and affect its condition; $Y(S_1, S_2, \dots, S_{n-1}) \rightarrow \text{optimal}$ – a function of optimizing the influence of factors on the state of investment attractiveness.

The quantitative characteristic of the investment attractiveness model can be represented through an integrated index, which is calculated for each country with scores from 0 (lowest attractive status) to 100 (highest attractive status). The index of investment attractiveness is calculated as the geometric mean of the three measuring factors - investment climate, investment activity, economic growth. The equation illustrates the relationship between factors that affect the state of investment attractiveness (Eq. 2):

$$I_{\text{inv. at.}} = \sqrt[3]{I_{\text{inv. cl.}} \times I_{\text{act.}} \times E_s}, \quad (2)$$

where: $I_{\text{inv. at.}}$ – the index of investment attractiveness; $I_{\text{inv. cl.}}$ – investment climate; $I_{\text{act.}}$ – investment activity; E_s – state of economic development.

The investment climate as an integral factor is represented by a set of political, economic, legal, financial, social, cultural conditions for the formation of the appropriate infrastructure, which determines the degree of investment attractiveness of the country's economy (estimated through the rating indexes of countries influencing investment decisions); investment activity is considered as an integral characteristic of the economic development of the country, which is realized through investment potential, taking into account the existing risks (estimated through the level of international investment in the country); the state of economic growth shows an increase in production, GDP, rates of economic growth, an increase in national wealth (estimated through the main macroeconomic indicators of the country's economy) [51-54].

The equation is considered as a set of quantitative and qualitative indicators that affect the volume of foreign direct investment (FDI) in the process of evaluating the indicator of investment attractiveness of the country's economy. The synergistic effect of the impact of foreign direct investment on the country's investment attractiveness indicator can be described by the following function (Eq. 3):

$$SE(FDI) = f(FDI, TRADE, IFE, IC, IS), \quad (3)$$

where: $SE(FDI)$ – a synergistic effect; FDI – foreign direct investment; $TRADE$ – trade liberalization (% of GDP); IFE – an attractive investment environment; IC – investment cooperation; IS – an integrated indicator of investment attractiveness.

For comparison of indicators measured in different quantities (% , conventional units) in order to bring them to dimensionless values, the criteria of their normalization at primary indicators-stimulants and destimulants, as well as at bilateral boundary constraints are proposed. To facilitate the perception of indicators the designation for stimulants is selected – X, for indicators-destimulants – Y, for indicators of mixed type – Z.

Depending on the primary dynamic series and the elimination of a major contradiction in standardizing that implies negative values for the indicators, we advise to adjust the thresholds in each case while moving the critical values and maintaining the existing proportions for adequate rationing [55-62].

1. In the primary indicator-stimulator, the normalization criterion is (Eq. 4):

$$X = \left\{ \begin{array}{l} 0.2 \left(\frac{x_{ij} - x_{critical}}{n_1} \right), ij \leq jx_{ij} \leq x_{critical} \text{ exp} \\ 0.2 \times \frac{x_{ij}}{x_{critical}}, 0 \leq x_{ij} \leq x_{critical} \\ 0.2 + 0.2 \times \frac{(x_{ij} - x_{critical})}{(x_{dangerous} - x_{critical})}, x_{critical} jx_{ij} \leq x_{dangerous} \\ y_{ij} = 0.4 + 0.2 \times \frac{(x_{ij} - x_{dangerous})}{(x_{unsatisfactory} - x_{dangerous})}, x_{danger} jx_{ij} \leq x_{unsatisfactory} \\ 0.6 + 0.2 \times \frac{(x_{ij} - x_{unsatisfactory})}{(x_{satisfactory} - x_{unsatisfactory})}, x_{unsatisfactory} jx_{ij} \leq x_{satisfactory} \\ 0.8 + 0.2 \times \frac{(x_{ij} - x_{satisfactory})}{(x_{optimal} - x_{satisfactory})}, x_{satisfactory} jx_{ij} \leq x_{optimal} \end{array} \right\}, \quad (4)$$

where: x_{ij} – the value of the i -th indicator in period j ; y_{ij} – normalized indicator value x_{ij} ; n_i – the smoothing constant, for each indicator is determined separately by the expert way.

2. In the case of the primary indicator-destimulator, the normalization criterion is (Eq. 5):

$$Y = \left\{ \begin{array}{l} 1, x_{ij} \leq x_{optimal} \\ 0.8 + 0.2 \times \frac{(x_{satisfactory} - x_{ij})}{(x_{satisfactory} - x_{optimal})}, x_{optimal} jx_{ij} \leq x_{satisfactory} \\ y_{ij} = 0.6 + 0.2 \times \frac{(x_{unsatisfactory} - x_{ij})}{(x_{unsatisfactory} - x_{satisfactory})}, x_{satisfactory} jx_{ij} \leq x_{unsatisfactory} \\ 0.4 + 0.2 \times \frac{(x_{danger} - x_{ij})}{(x_{danger} - x_{unsatisfactory})}, x_{unsatisfactory} jx_{ij} \leq x_{danger} \\ 0.2 + 0.2 \times \frac{(x_{critical} - x_{ij})}{(x_{critical} - x_{danger})}, x_{danger} jx_{ij} \leq x_{critical} \\ 0.2 \times \frac{x_{critical}}{x_{ij}}, x_{ij} jx_{critical} \end{array} \right\}, \quad (5)$$

where: x_{ij} – the value of the i -th indicator in period j ; y_{ij} - normalized indicator value x_{ij} .

3. In the case of bilateral marginal restrictions on the primary indicator, formulas (4)-(5) shall be applied simultaneously for normalization [63-67].

Taking into account the principle of correctness, indicators that characterize the macroeconomic, monetary and currency status of the investment attractiveness of the country's economy (Table 1) are highlighted [68-72].

Table 1. Recommended values of investment attractiveness of the economy of the country on the indicators of macroeconomic, monetary-credit and currency status

Indicators-stimulators	X _{critical}	X _{dangerous}	X _{satisfactory}	X _{unsatisfactory}	X _{optimal}	X _{upper is optimal}
The size of the economy of the country, % of GDP of EU member states	1	3	5	6	7	10
GDP growth rate, %	-5	0	2	5	7	10
GDP per capita to average in EU Member States, %	10	35	60	85	110	125
GDP per capita to average in EU Member States (purchasing power parity), %	50	75	80	85	90	100
Gross international reserves of Ukraine, months of imports	3	3.5	4	4.5	5	6
Share of long-term loans in total loans granted (adjusted for exchange rate differences),	25	35	40	45	50	60

%						
Indicators-destimulators	Y _{upper is optimal}	Y _{critical}	Y _{unsatisfactory}	Y _{satisfactory}	Y _{dangerous}	Y _{critical}
The level of shadowing of the economy, % of GDP	10	12	15	18	25	35
Unemployment rate, %	5	6	7	8	9	10
Long-term unemployment rate (over 12 months), % of total unemployed	20	30	35	40	45	50
The level of dollarization of money supply, %	15	18	21	24	27	30
Inflation rate, %	3	4	5	5.5	6	7
Share of foreign currency loans in total loans granted, %	20	25	30	35	40	50
Cash volume, % of GDP	4	5	6	7	8	10
Indicators of mixed type	Z _{critical}	Z _{dangerous}	Z _{optimal}	Z _{upper is optimal}	Z _{satisfactory}	Z _{unsatisfactory}
Balance of goods and services (trade balance of the country), % of GDP	-7	-5	2	3	7	10
Index of changes in the official exchange rate of the national currency to the USD dollar, average for the period, %	90	100	110	115	120	130

Source: developed by the authors.

To assess the level of investment attractiveness of the country's economy, taking into account the criteria for identifying the risks and threats of a safe and dangerous state of the state's development, methods of prognostic extrapolation have been formalized. The basic unit of the risk assessment and forecasting model is the assessment of the value of investment assets (foreign direct investment) (Eq. 6):

$$r_{is} = \frac{V_a}{G}, \quad (6)$$

where: V_a – the value of investment assets (foreign direct investment); G – invested capital.

The importance of investment assets (foreign direct investment) is seen as a process of determining the value of information. If the indicator of cost effectiveness is (Eq. 7):

$$d = \frac{ef}{a}, \quad (7)$$

where: ef – the expected economic effect; a – costs. Then, single risk is measured as (Eq. 8):

$$r_i = p_i \times l_i, \quad (8)$$

where: p_i – probability of realization of the i -th threat in the integrated indicator of investment attractiveness of the economy of the state; l_i – damage to the i -th threat [73-80]. The aggregate risk assessment of the integrated indicator can be summarized as follows (Eq. 9):

$$R = \sum_{i=1}^{\pi} r_i, \quad (9)$$

Provided that the priority group is distinguished as G , where $j = 1, k, k \leq \pi$, W_j will characterize the weight of probable risks by priority groups, and the simple risks will be provided by the following condition (Eq. 10):

$$W_j \geq 0 \text{ and } \sum W_j = 1. \quad (10)$$

The ratio of priorities is their equation (Eq. 11):

$$A = \frac{W_j}{W_k}, \quad (11)$$

In this case, the weight of the group with the lowest priority is calculated as follows (Eq. 12):

$$GW \frac{2}{|k \times (A+1)|_{min}}, \quad (12)$$

then, the weight of the other groups is determined by (Eq. 13):

$$W_j = \frac{W_k \times \frac{1}{|(k-j) \times A + (j-1)|}}{k-1}, \quad (13)$$

The calculation of the weight of free factors for a single risk within one priority group is defined as (Eq. 14):

$$W = \frac{W_j}{GW_{min}}, \quad (14)$$

The potential loss of investment assets (foreign direct investment) is calculated by the formula (Eq. 15):

$$U = p_i \times \lambda \times D, \quad (15)$$

where: p_i – the probability of realization of the i -th risk event; λ – influence of threat on violation of investment attractiveness; D – the value of an investment asset (foreign direct investment) [81-89].

Forecasting the risks of international investment and its impact on the investment attractiveness of assets (foreign direct investment) can be minimized or partially eliminated. Net investments can be measured using the following formula (Eq. 16):

$$\Delta \ni I_{\pi k} \times \frac{v_1 - v_0}{v_0} - k_0 \times \frac{v_1 - v_0}{v_0} = (I_{\pi k} - k_0) \times \frac{v_1 - v_0}{v_0}, \quad (16)$$

where: $I_{\pi k}$ – the amount of foreign investment in a given period, which influences the integrated indicator of investment attractiveness of the country's economy; k_0 – short-term commitments for the period under study; v_1 and v_0 – actual and projected sales volume of investment assets (foreign direct investment).

Thus, the need to enter the economic system of the country on the trajectory of growth allows accelerating its development and improving investment attractiveness. At the same time, the complex of motives for placement of foreign direct investments in the country is conditioned by the desire to use local factors of production for export of investment assets. The result is the signing of international agreements on the safe movement of investment flows from EU countries to developing countries in order to access cheap resources and the securities market [90].

3. Results and discussion

The processes of economic renewal and growth of the economies of the countries of the world are determined by the size and structure of investments, the quality and the speed of their realization. Dynamic characteristics of FDI growth corresponding to the world economic trends are revealed. Investment flows are the most important tools for establishing and maintaining equilibrium in the investment system. Under the projected change of internal and external conditions of the investment environment they ensure the stability of the country's economy, its investment attractiveness, sovereignty, competitiveness and growth capacity.

Foreign direct investment (FDI) is associated with a significant increase in the volume of capital movements and its transformation into one of the determinants of global economic development. At the same time, the nature and clarification of the causes of the international capital movement in its various forms are conditioned by the foreign investment and guarantees against risk, and its effectiveness provides geo-economic dimensions of influence on the economic, regional and social development of the recipients of foreign capital [30]. However, the most impressive FDI growth peaked in GDP in 2007 with an absolute value

58.07 trillion USD equivalent to 3.26% world GDP; the absolute maximum was in 2018 – 85.79 trillion USD, which was equal 2.89% to world GDP (Figure 1) [91-97].

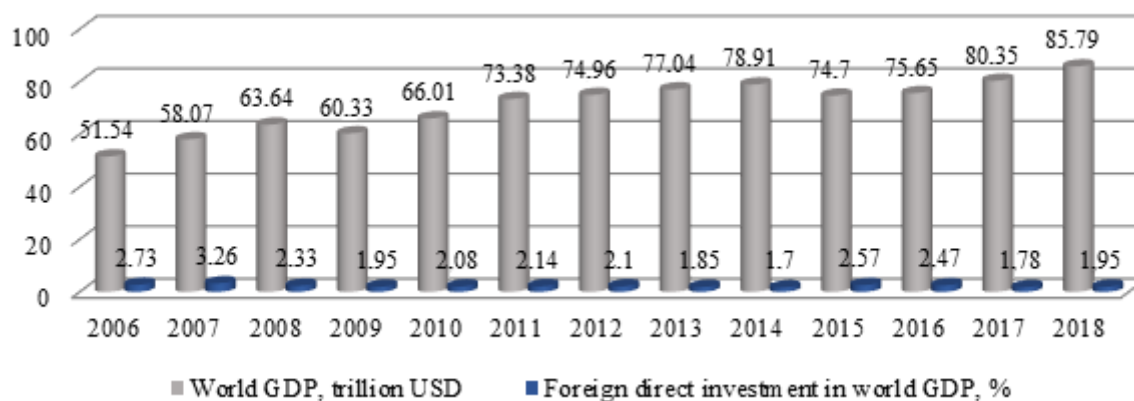


Figure 1. The ratio of world FDI flows to world GDP

Source: developed by the authors according to data [30]

FDI world flows fall in 2009 to 1179.1 billion USD was due to the financial crisis in 2008, reaching 62.3% at the level of 2007. It should be noted that in 2007, the volume of foreign direct investment inflows increased by 35% compared to 2006 and was related with high economic activity of business. Instead, in 2015, foreign direct investment attracted already 1921.3 billion USD, but in the period 2016-2018 there was a dynamic decline in its value by 13.1%, with the unavailability of 2007 (Figure 2).

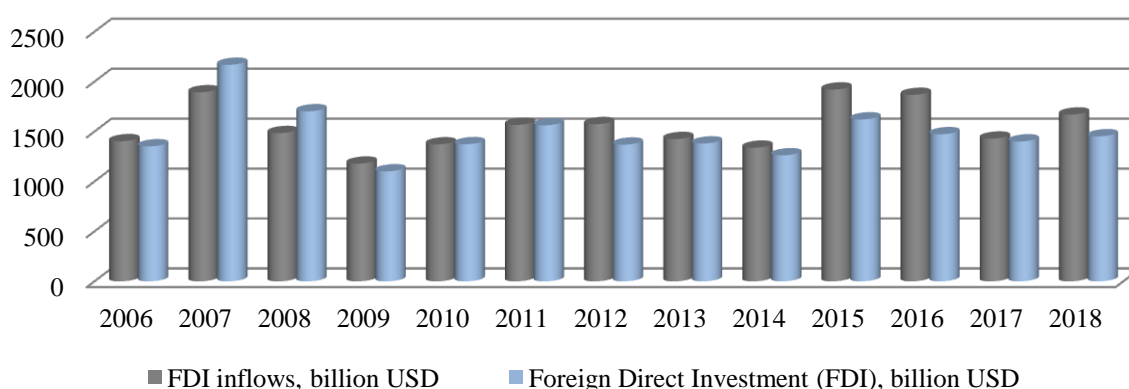


Figure 2. Movement of world foreign direct investment flows, billion USD

Source: developed by the authors according to data [30].

Over the period of the study, the US position as a foreign direct investment recipient country has not changed, while most countries have turned into the largest recipients (43%) and investors (19%) in the world capital flows and outflows. In addition to the USA, the main recipient countries are China, France, India, Germany, the main investors are the USA, Japan, China, Germany, France [98-103]. The increase in foreign direct investment flows is directly related to higher profits and higher stock prices of companies, which exceeded the value of cross-border mergers and acquisitions. As a result of increased profit of companies, reinvested income became a component of imported foreign direct investment (Figure 3).

The increase in FDI was driven by cross-border mergers and acquisitions (M&A), which in 2008 amounted to 7582 investment objects with a total value of 1032.69 billion USD. Such growth was driven by the increase in the value of foreign investments in the stock market, the growth of profit of companies and favorable financing conditions. Mostly mergers and acquisitions were financed with cash or debt. The increase in the

value of net sales by 13% in 2008 against the level of 2007 did not guarantee its increase in 2014-2015 by 67% and 68% [104].

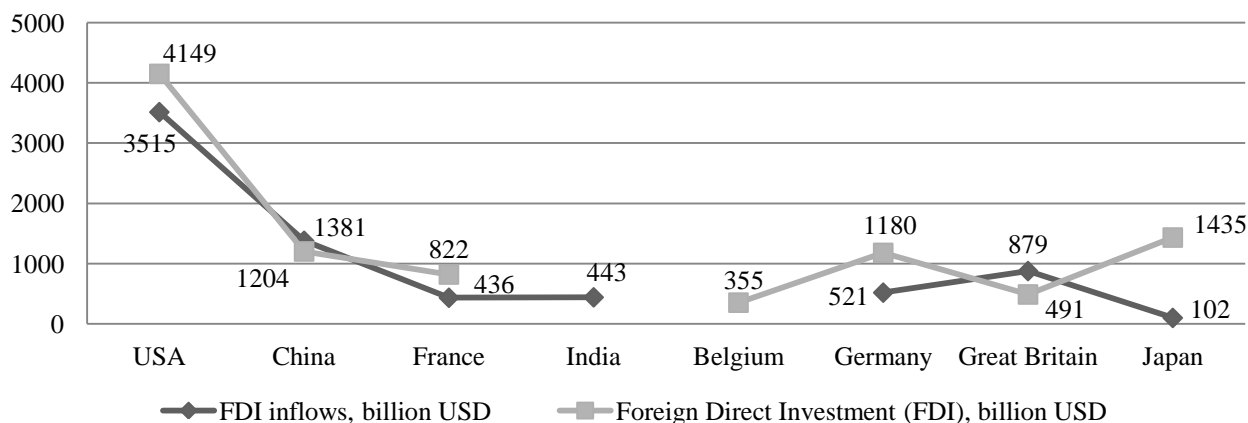


Figure 3. FDI inflows and investments in 2006-2018, billion USD

Source: developed by the authors according to data [30].

The largest amount of mergers and acquisitions took place in 2017 and amounted to 886.91 billion USD; in 2018, its value decreased by 21.8% (Figure 4), but despite such dynamics, it is the cross-border sales of investment objects that will most likely be the driving force for the growth of investment attractiveness of the economy of the countries in the future [105-111].



Figure 4. Net sales of cross-border mergers and acquisitions, billion USD

Source: developed by the authors according to data [30].

From a geographical point of view, cross-border sales in Europe increased at a much slower pace in 2010-2012 and 2014-2017. At the same time, the value of cross-border investment in transition countries declined sharply in the dynamic trend under study by 44% and 52% respectively, leaving 6% its share in the total volume of mergers and acquisitions (for comparison, in 2006-2015 it amounted to 19%). The same trend is observed in 2018. The powerful development of transnational companies (TNCs) has a significant impact on the investment attractiveness of the world's economies. Their share in the total volume of export to the world FDI market is 84%. According to the UNO more than 80 thousand of firms in different countries are attributed to global transnationals, but only about 500 of them with annual sales exceeding 1 billion USD (70 (largest TNCs generally have an aggregate annual sales volume of 10 to 125 billion USD), which are the core of the world economic system [112-117].

TNCs account for more than 25% of world GDP in total activities, and TNCs located outside the countries of origin account for 10% of world GDP and one third of world exports. TNCs serve about 2/3 world trade, of

which almost half of the trade takes place within these companies. This means that trade takes place at transfer prices that are determined by the policies of the parent companies. The largest TNCs have budgets that exceed the budgets of some countries in the world. Thus, developed countries occupy a leading position in the overall structure of world FDI (Figure 5).

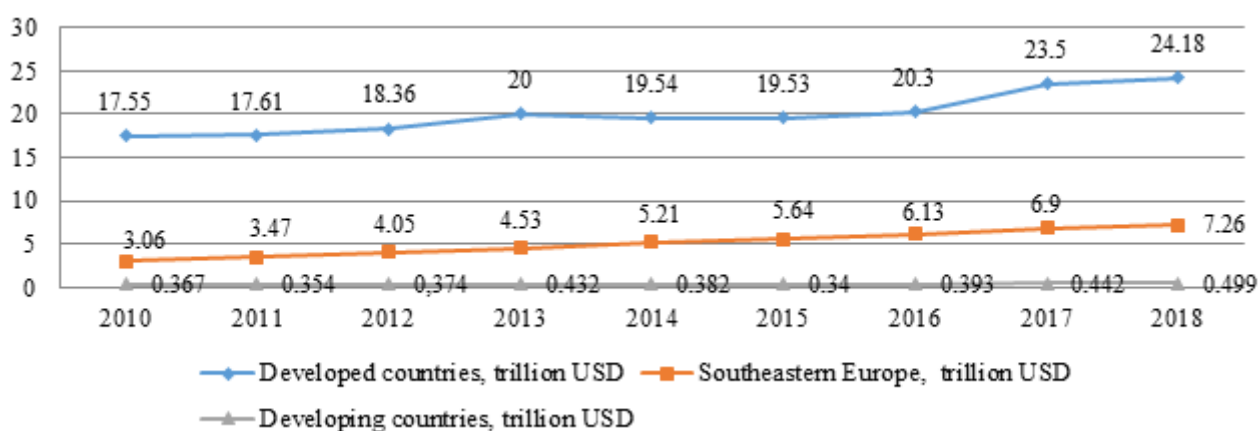


Figure 5. Structure of foreign direct investment by regions of the world countries (external reserves of investment potential), trillion USD

Source: developed by the authors according to data [30].

Overall, the global FDI market over the past five years has continued to be shaped by investment flows from major economic entities such as the G-20, APEC (Asia-Pacific Economic Cooperation), NAFTA, which are exporters of capital, most of the recipients of investment are developing countries. Global FDI declined by 23% to 1.43 trillion USD in 2016-2018. The fall was partly due to a decrease in the value of the volume of cross-border mergers and acquisitions by 22%. It should be noted that foreign direct investment in the country's economy is an important element in the development of foreign economic relations and an indicator of the degree of integration of the country into the world economy. An increase in FDI by 1% leads to an additional increase in income per person by 0.8% [118]. Thus, the investment attractiveness of the Ukrainian economy is characterized by such macroeconomic indicators as economic growth (nominal and real GDP), balance of payments (including exports, imports, international reserves, external debt), the capital market, which is affected by inflation and the labor market (unemployment rate) (Table 2).

Table 2. Indicators of investment attractiveness of the economy of Ukraine for 2012-2018

Indicators	2012	2013	2014	2015	2016	2018	2018
Nominal GDP, billion UAH.	1.405	1.465	1.587	1.989	2.385	2.983	3.428
Real GDP, % change	0.2	0.0	-6.6	-9.8	2.3	2.5	3.5
Consumption, % change	7.4	5.2	-6.2	-9.8	2.3	2.5	3.5
Fixed investment, % change	5.0	-8.4	-24.0	-9.2	2.1	18.1	14.9
Export, % change	-5.6	-8.1	-24.0	-9.2	2.1	18.1	14.9
Imports, % change	3.8	-3.5	-22.1	-17.9	8.4	12.2	14.0
GDP deflator, % change	8.1	3.1	14.8	38.4	17.1	22.0	11.1
Inflation rate (CPI), % change	-0.2	0.5	24.9	43.3	12.4	13.7	9.9
Current account balance, % of GDP	-8.2	-9.2	-3.5	-0.2	-3.8	-3.5	-3.7
External debt, % of GDP	46.6	78.6	97.6	131.5	129.4	104.0	106.3
International reserves, billion USD	24.5	20.4	7.5	13.3	15.5	18.8	20.4
Budget revenues, % of GDP	44.5	43.6	40.3	42.1	38.4	39.2	40.1
Tax revenues, % of GDP	38.9	37.9	35.8	35.5	33.1	34.0	35.4
Budget expenditures, % of GDP	48.9	48.4	44.8	43.2	40.6	41.5	42.6
Current expenditure, % of GDP	45.7	46.2	44.3	41.0	37.4	38.2	39.4
Capital expenditure, % of GDP	2.9	2.0	1.3	2.2	3.1	3.3	3.2

Fiscal balance, % of GDP	-4.4	-4.8	-4.5	-1.2	-2.2	-2.3	-2.5
Government and guaranteed debt, % of GDP	36.6	40.6	70.3	79.7	81.2	72.3	75.1

Source: calculated by the authors according to data [28].

Unfortunately, during 5 years (2014-2018) no significant changes in the volume of attracting foreign direct investment in Ukraine have occurred. During this period, the amount of foreign investment in the country decreased by 14.99 billion US dollars. In 2018 alone, investment inflows compared to 2017 increased by 1.20 billion USD, or by 3.2% (Figure 6).

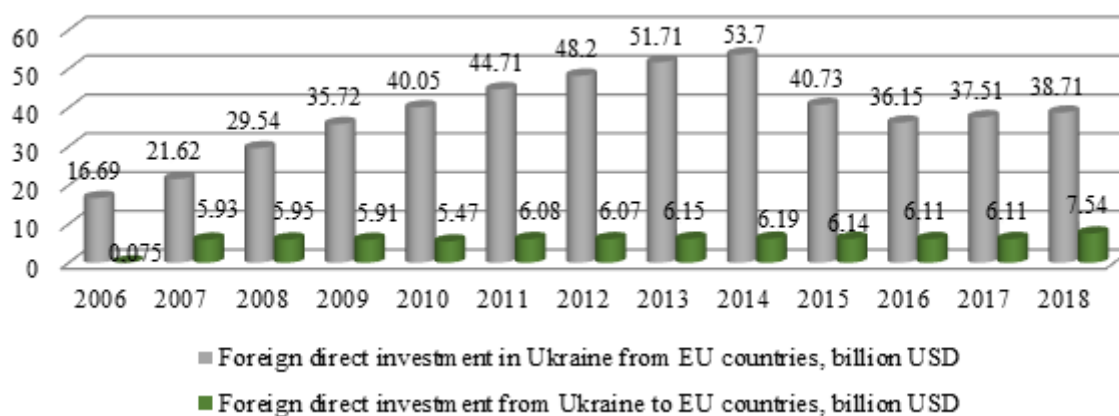


Figure 6. Foreign direct investment movement between Ukraine and EU countries, billion USD

Source: developed by the authors according to data [12; 24; 27]

In 2018, more than 38.71 billion USD was invested in the economy of Ukraine from over 76 countries of the world. The main investor countries include the Netherlands – 33.2%, the Russian Federation – 17.3%, Cyprus – 16.6%, Austria – 7.1%, France – 3.9%, the United Kingdom – 3.4%, Poland – 3.2%. The largest share in the structure of distribution of foreign direct investment by economic sectors in Ukraine is directed to the financial and insurance spheres – 16.38 billion USD (or 42.3%) from their total volume (additional capitalization of banks with foreign capital led to increase of investments from Austria (Raiffeisen Bank Aval JSC) and Hungary (OTP BANK JSC); trade, repair of motor vehicles and motorcycles – 8.09 billion US dollars (20.9%); industry – 5.93 billion USD (15.3%); real estate transactions – 5.46 billion USD (14.1%); information and telecommunications – 1.63 billion USD (4.2%); professional, scientific and technical activities – 1.24 billion USD (3.2%) [24].

Enhanced free trade between Ukraine and EU countries is an effective tool to improve access to powerful investment resources and improve business conditions in the global investment environment. Foreign direct investment potentially generates a wide range of benefits for both sides of the relationship, both for Ukraine and the EU. European investments in the Ukrainian economy allow investors to: reduce transport costs by placing businesses in close proximity to new markets; avoid tariffs (quotas) for goods and services produced on the Ukrainian market; use cheap (skilled) labor; reduce risks through diversification; generate income, both in profits and dividends. At the same time, Ukraine, as a recipient of European investments, benefits by increasing GDP, increasing employment, reducing imports is stimulating the domestic economy [118].

It should be noted that the largest movement of foreign investments from EU countries is directed within their triad (Figure 7). The US and Japan account for about 40% all European investments. European investors are not at risk of investing in countries that are characterized by economic (political) instability. On the contrary, those countries that provide real economic development (relatively low inflation and interest rates, stable currency, respect for intellectual property rights are the USA, Switzerland, Canada, Japan and others) are more interesting for European investors. Thus, the level of FDI inflows in the EU is at 2-4% GDP (Figure 8). The high degree of intensity in the Netherlands is explained by the existence of substantial benefits for the registration of foreign companies, which indicates a certain element of offshoresness.

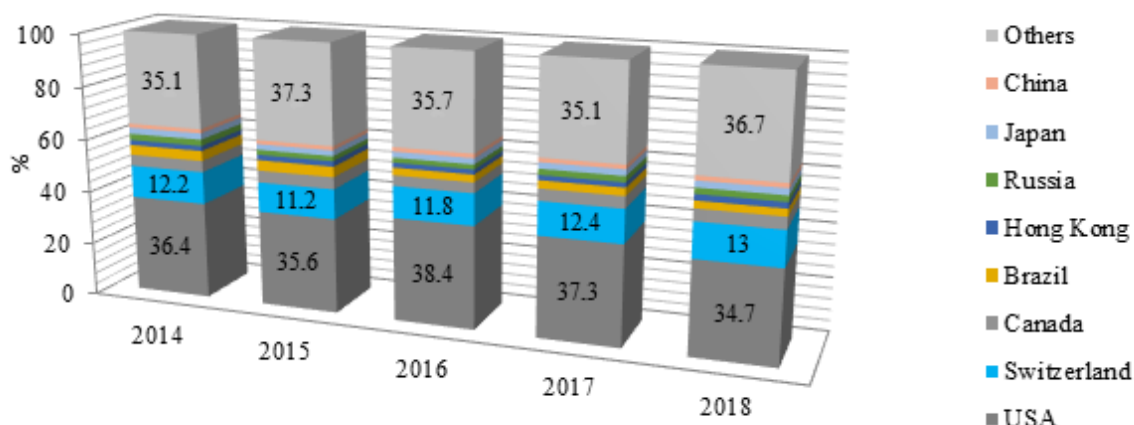


Figure 7. Movement of European foreign direct investment between countries, % to GDP

Source: compiled by authors according to data [25].

The intensity of other EU countries, which are the largest investors in Ukraine, is at an average level. Moreover, in Ukraine the intensity of FDI movement has a degree of globalization of the economy. On the one hand, the Ukrainian economy is more open to attracting FDI, on the other, it is more dependent on investment than the EU-28, since its movement has a significant impact on the country's GDP, productive sector and employment.

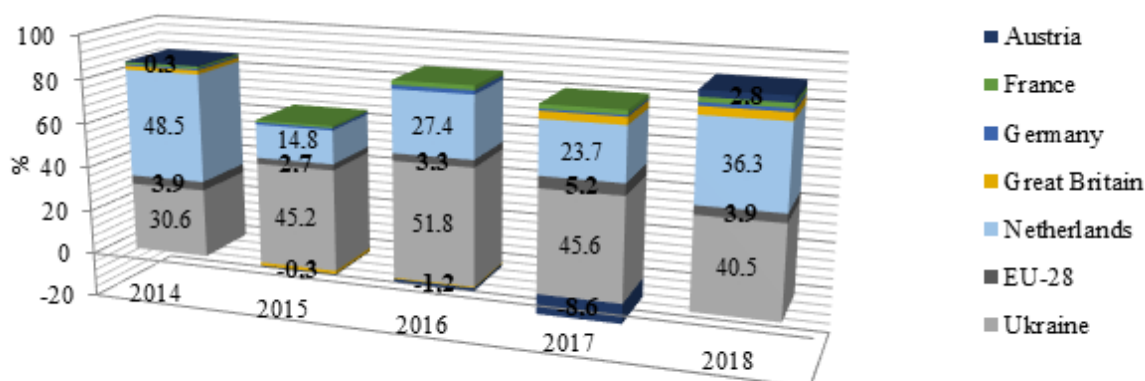


Figure 8. Intensity of foreign direct investment flows in Ukraine and the largest EU investor countries, % of GDP

Note: Flow rate – the average value of foreign direct investment inflows and outflows to GDP.

Source: compiled by authors according to data [25]

At the same time, Ukraine's integration into the European Union allows it to realize its national interests and ensure the economic security of the country. Countering such security is introduced through an indicator of the foreign economic state of the country, which warns of threats against the economic development of the country, taking into account the interests of other entities of foreign economic activity, thus increasing international competitiveness, creating favorable conditions for the development of trade in goods, services, investments. The comparative characteristics of the investment attractiveness indicators of Ukraine and the EU countries are shown in Figure 9-10. The analysis of the data shows that the indicators are low, and this is

not a positive factor, since the economies of the countries require more investment, beyond the current limit of the safe level of their involvement [119].

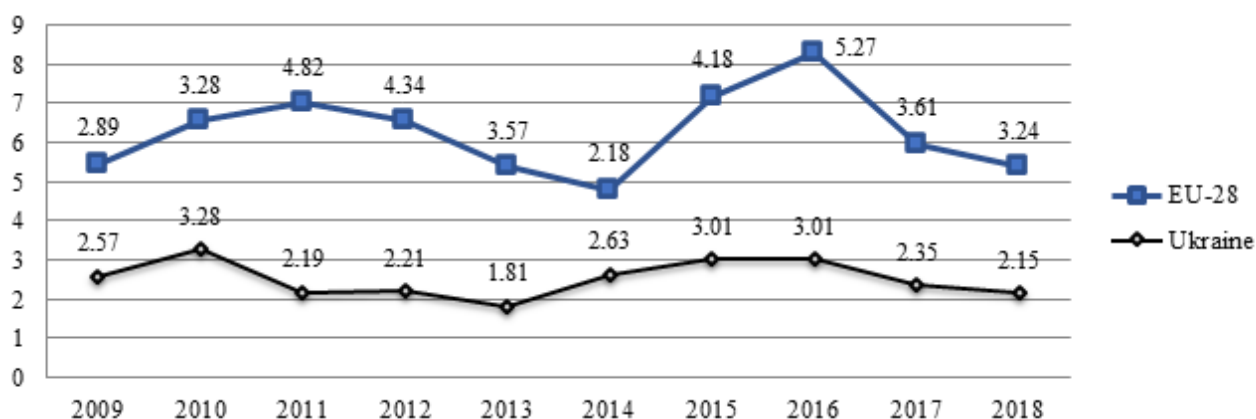


Figure 9. Investment security indicator of Ukraine and EU countries according to the indicator “net FDI inflows in % of GDP”, %

Source: compiled by authors according to data [29].

It must be acknowledged that the amount of government spending on the use of the mechanism of attracting investment resources amounts to more than 0.38 billion US dollars, and the amount of investment resources involved does not meet their minimum needs [25]. We believe that the effectiveness of attracting investment resources to the country depends directly on reducing the impact of international financial institutions on ensuring a stable economic environment and sustainable economic growth, favorable investment infrastructure. At the same time, public-private partnerships for attracting foreign investments should become a vector of priority cooperation.

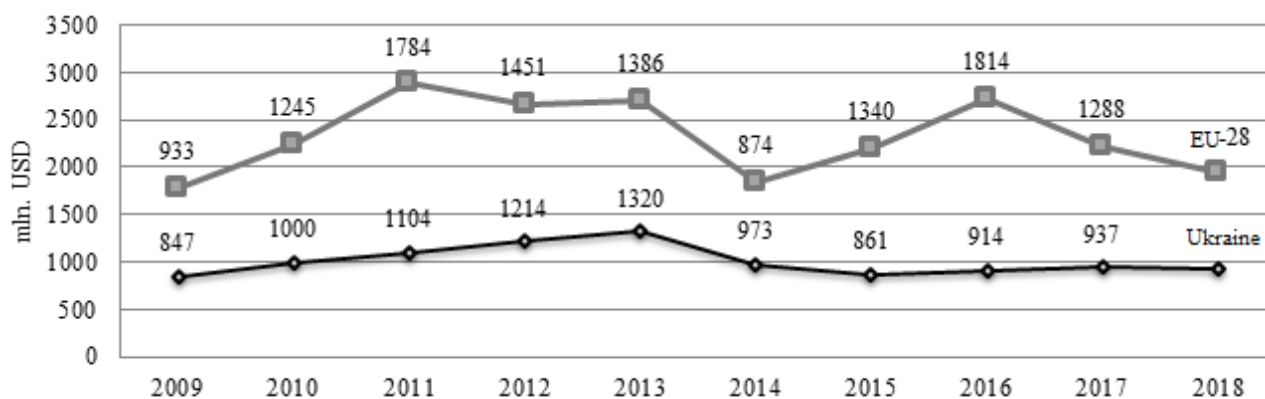


Figure 10. Investment security indicator of Ukraine and the EU countries by indicator “net FDI inflow per capita”, mln. USD

Source: Compiled by authors according to data [29].

The extrapolation forecasting of the change in the polystructural space of foreign direct investment in the countries of the world (Figure 11) and their trajectory in the future are made. This forecasting uses the coefficient of confidence approximation R^2 for the most optimal trend equation, which is divided into three groups: the first one – with the value 0.8-1.0 – the high-quality scenario; second – with value 0.5-0.8 – acceptable quality; the third group – with value 0.0-0.5 – the scenario of poor quality [120].

There are three variants of the forecast. If negative factors influence the global GDP (low growth of the world economy, global financial crises and other global determinants), a pessimistic forecast is possible, which reflects the lower limit of the possible value of the indicator $R^2 = 0.7539$. With the dominance of positive factors (accelerated growth of the world economy, the most favorable investment climate, etc.), an optimistic forecast is possible, which shows the upper bound of the coefficient of determination $R^2 = 0.7669$ (the value of the approximation reliability). The third option is the probable one, which corresponds to the current trends in the development of the world economy and reflects the most optimal scenario with an average indicator $R^2 = 0.5553$.

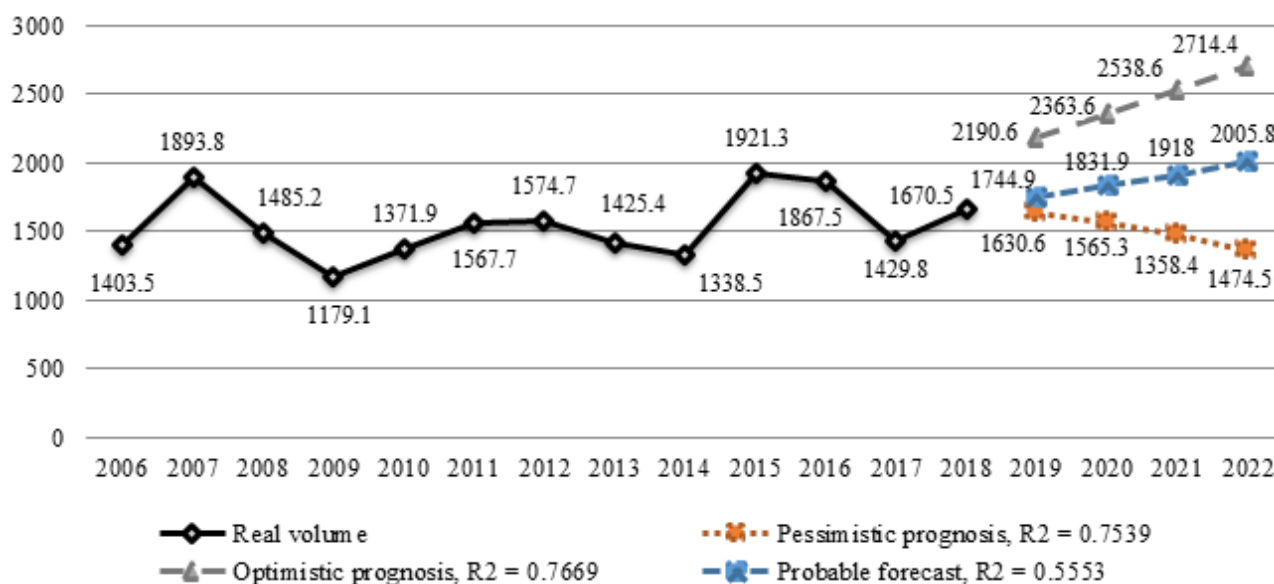


Figure 11. Global FDI growth scenario, billion USD

Source: authors' own calculations

According to the forecast of changes in the polystructural polarization of the world foreign direct investment volume, it is determined that by 2022 its value in the most probable scenario will exceed 2005 billion US dollars; under the optimistic scenario, FDI growth can be reached at 2714 billion USD; in the context of a pessimistic forecast – there will be a slowdown in the global economy, cataclysms and shocks will occur in the global financial market for FDI, there will be a dynamic reduction in the number of mergers and acquisitions, restrictions will be introduced in attractive areas for FDI, and the decline in world FDI may continue until the level of 2010.

4. Conclusion

Thus, the EU countries are one of the largest investors (the share 65-90% of all investments) in the polystructural space of international investment. We believe that European integration of the world countries will allow to secure a safe flow of foreign investments and investment attractiveness for the developing countries on the basis of: creation of consortia and alliances of domestic companies with leading European companies, taking into account the means of economic diplomacy; introduction of modern forms of international joint financing of strategic investment projects (we should note that in Ukraine, during 2016-2018 only 45-48% projects were implemented in the medium-term budgetary period); ensuring the investment needs of the manufacturing sector, taking into account the agricultural sector; increasing interaction and practical cooperation in the context of the EU 2020 Strategy; the introduction of monitoring pricing within transnational companies (TNCs), to prevent tax evasion and the territory of developing countries; formation of a system of mutual protection of investments, minimization of geopolitical, macroeconomic, as well as military threats.

In the context of deepening cooperation and realizing the unique capabilities of the states in shaping the global investment climate, it is necessary to ensure a high level of employment of the population by creating new

jobs, updating the transfer and introducing the latest technologies, solving social problems at the general level; to carry out an investment modernization of the economy to increase the fixed assets of enterprises; to implement a more effective investment policy.

References

- [1] M.J. Oseia and J. Kim, "Foreign Direct Investment and Economic Growth: Is More Financial Development Better?" *Economic Modelling*, 93, pp. 154-161, 2020.
- [2] M. Liu A. Marshall and P. McColgan, "Foreign Direct Investments: The Role of Corporate Social Responsibility," *Journal of Multinational Financial Management*, Article number: 100663, 2020.
- [3] A. Dhrifi, R. Jaziri and S. Alnahdi, "Does Foreign Direct Investment and Environmental Degradation Matter for Poverty? Evidence from Developing Countries," *Structural Change and Economic Dynamics*, 52, pp. 13-21, 2020.
- [4] S. Saidi, V. Mani, H. Mefteh, M. Shahbaz and P. Akhtar, "Dynamic Linkages Between Transport, Logistics, Foreign Direct Investment, and Economic Growth: Empirical Evidence from Developing Countries," *Transportation Research Part A: Policy and Practice*, 141, pp. 277-293, 2020.
- [5] M.W.Zafar, Q. Qin, M. Nasir malik and S.A.H. Zaidi, "Foreign Direct Investment and Education as Determinants of Environmental Quality: The Importance of Post Paris Agreement (COP21)," *Journal of Environmental Management*, 270, Article number: 110827, 2020.
- [6] O. Golubeva, "Maximising International Returns: Impact of IFRS on Foreign Direct Investments," *Journal of Contemporary Accounting & Economics*, 16(2), Article number: 100200, 2020.
- [7] E.E.O. Opoku and M.K. Boachie, "The Environmental Impact of Industrialization and Foreign Direct Investment," *Energy Policy*, 137, Article number: 111178, 2020.
- [8] A.T.N. Nguyen, A.A. Haug, P.D. Owen and M. Genç, "What Drives Bilateral Foreign Direct Investment Among Asian Economies?" *Economic Modelling*, 93, pp. 125-141, 2020.
- [9] S. Tiba and F. Belaid, "The Pollution Concern in the Era of Globalization: Do the Contribution of Foreign Direct Investment and Trade Openness Matter?" *Energy Economics*, 92, Article number: 104966, 2020
- [10] Y. Zhaoa, Sh. Xunpeng and F. Song, "Has Chinese Outward Foreign Direct Investment in Energy Enhanced China's Energy Security?" *Energy Policy*, 146, Article number: 111803, 2020.
- [11] J. Chena, Y. Liu and W. Liu, "Investment Facilitation and China's Outward Foreign Direct Investment Along the Belt and Road," *China Economic Review*, 61, Article number: 101458, 2020.
- [12] J. Eyvazov, "Geopolitics and National Security in the Globalizing World," *International Law and Integration Problems*, 2(54), pp. 4-8, 2018.
- [13] J. Heavilin and H. Songur, "Institutional Distance and Turkey's Outward Foreign Direct Investment," *Research in International Business and Finance*, Article number: 101299, 2020.
- [14] R. Mahadevan and Y. Sun, "Effects of Foreign Direct Investment on Carbon Emissions: Evidence from China and Its Belt and Road Countries," *Journal of Environmental Management*, 276, Article number: 111321, 2020.
- [15] F. Fagbemi and T.T. Osinubi, "Leveraging Foreign Direct Investment for Sustainability: An Approach to Sustainable Human Development in Nigeria," *Resources, Environment and Sustainability*, 2, Article number: 100005, 2020.
- [16] R. Ramachandran, S. Sasidharana and N. Doytch, "Foreign Direct Investment and Industrial Agglomeration: Evidence from India," *Economic Systems*, 44(4), Article number: 100777, 2020.
- [17] F.J. Contractor, R. Dangol, N. Nuruzzaman and S. Raghunath, "How Do Country Regulations and Business Environment Impact Foreign Direct Investment (FDI) Inflows?" *International Business Review*, 29(2), Article number: 101640, 2020.

- [18] H. Liu, M.A. Islam, M.A. Khan, I. Hossain and K. Pervaiz, "Does Financial Deepening Attract Foreign Direct Investment? Fresh Evidence from Panel Threshold Analysis," *Research in International Business and Finance*, 53(1), Article number: 101198, 2020.
- [19] B.A. Blonigen, A. Cristea and D. Lee, "Evidence for the Effect of Monitoring Costs on Foreign Direct Investment," *Journal of Economic Behavior & Organization*, 177, pp. 601-617. 2020.
- [20] A.V. Kuznetsov, "Foreign Direct Investment," *International Encyclopedia of Human Geography (Second Edition)* (pp. 219-227). Amsterdam: Elsevir, 2020.
- [21] Y. Huang, E. Xie and Zh. Wu, "Portfolio Characteristics of Outward Foreign Direct Investment and Dynamic Performance of Emerging Economy Firms: An Option Portfolio Perspective," *International Business Review*, Article number: 101750, 2020.
- [22] L. Slesman, Y.A. Abubakar and J. Mitra, "Foreign Direct Investment and Entrepreneurship: Does the Role of Institutions Matter?" *International Business Review*, Article number: 101774, 2020.
- [23] K. DeGhetto, B.T. Lamont and R.M. Holmes Jr., "Safety Risk and International Investment Decisions," *Journal of World Business*, 55(6), Article number: 101129, 2020.
- [24] National Bank of Ukraine. URL: <https://bank.gov.ua/doccatalog/document?id=29318281>.
- [25] Eurostat. URL: https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=bop_fdi6_ind&lang=en, <https://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&pcode=tec00107&language=en>.
- [26] Global Investment Trend Monitor, 2019. URL: <https://investmentpolicy.unctad.org/news/hub/1626/20191025-global-investment-trend-monitor-no-32>
- [27] Statistical publication of the Regions of Ukraine. (2018). Kyiv: State Statistics Service of Ukraine. URL: http://www.ukrstat.gov.ua/druk/publicat/kat_u/2018/zb/11/zb_ru1ch2018.pdf.
- [28] Ukraine Economic Update, 2018. Worldbank. URL: <http://pubdocs.worldbank.org/en/684631523347829626/Ukraine-Economic-Update-April-2018-Eng.pdf>.
- [29] UNCTAD. URL: <http://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx>.
- [30] World Investment Report 2018: Investment and New Industrial Policies Geneva: UNCTAD. URL: https://unctad.org/en/PublicationsLibrary/wir2018_en.pdf.
- [31] V.Z. Kutsova, M.A. Kovzel, A.V. Grebeneva, I.V. Ratnikova and O.A. Velichko, "The Influence of Alloying Elements on Structure Formation, Phase Composition and Properties of Chromium-Manganese Iron in the Cast State," *Metallurgical and Mining Industry*, 7(9), pp. 1090-1095, 2015.
- [32] V.Z. Kutsova, M.A. Kovzel, A.V. Grebeneva and A.S. Myrgorodskaya, "Structure, Phases and Alloying Elements Distribution of Nikorim (High-Temperature Strength Ni-Cr Alloy) in Its Cast Form," *Metallurgical and Mining Industry*, 4(1), pp. 40-44, 2012.
- [33] M.K. Haliantych, A.V. Kostruba and N.I. Maydanyk, "Legal Aspects of the Implementation of a Pledge of a Bill of Lading as a Security: National Legal Realities," *International Journal of Criminology and Sociology*, 10, pp. 363-367, 2021.
- [34] A. Bayekeyeva, S. Tazhibayeva, Z. Beisenova, A. Shaheen and A. Bayekeyeva, "Controlled Multilingual Thesauri for Kazakh Industry-Specific Terms," *Social Inclusion*, 9(1), pp. 35-44, 2021.
- [35] I.A. Kapitonov, "Transformation of Social Environment in the Application of Alternative Energy Sources," *Environment, Development and Sustainability*, 22(8), pp. 7683-7700, 2020.
- [36] S. Mishchenko S. Naumenkova, V. Mishchenko and D. Dorofiev, "Innovation Risk Management in Financial Institutions," *Investment Management and Financial Innovations*, 18(1), pp. 191-203, 2021.
- [37] Z. Beisenova, K. Kanafiyeva, S. Moldakhmetova and Z. Kuandykova, "Questions of Development of Students' Functional Literacy," *Journal of Intellectual Disability - Diagnosis and Treatment*, 8(3), pp. 263-269, 2020.
- [38] B. Dong, I. Ikonnikova, R. Rogulin, T. Sakulyeva and A. Mikhaylov, "Environmental-Economic Approach to Optimization of Transport Communication in Megacities," *Journal of Environmental*

Science and Health - Part A Toxic/Hazardous Substances and Environmental Engineering, 56(6), pp. 660-666, 2021.

- [39] A.V. Kostruba and O.S. Hyliaka, "Designing of Legal Model of Legal Relations Cessations," *Astra Salvensis*, 1, pp. 69-86, 2020.
- [40] S.V. Naumenkova, "Financial Inclusivity: Economic Contents and the Approaches to Its Assessment," *Actual Problems of Economics*, 166(4), pp. 363-371, 2015.
- [41] A.V. Kostruba and O.S. Hyliaka, "Theoretical Substantiation of the Model of Borrowing Rights-Terminating Facts," *Rivista di Studi sulla Sostenibilita*, 2020(2), pp. 189-203, 2020.
- [42] A.V. Bobrova, E.A. Stepanov, T. Sakulyeva, G.Z. Zhumabekova and A.I. Yesturliyeva, "The Influence of Alternative Fuels on the Development of Large-Scale Production," *Journal of Environmental Accounting and Management*, 8(4), pp. 335-349, 2020.
- [43] N.I. Dorogov, I.A. Kapitonov and N.T. Batyrova, "The Role of National Plans in Developing the Competitiveness of the State Economy," *Entrepreneurship and Sustainability Issues*, 8(1), pp. 672-686, 2020.
- [44] G.M. Karasayev, Z.N. Zhaxygeldinov, K.A. Yensenov, B.R. Naimanbayev and Z.S. Bakirova, "The Place and History of the Activities of Kazakhstan in the United Nations Organization (1991 – 2016)," *Journal of Advanced Research in Law and Economics*, 10(7), pp. 2008-2016, 2019.
- [45] A.V. Kostruba and D. Lukianov, "Multivariability of Rights in the Structure Of Corporate Legal Relations," *Journal of Advanced Research in Law and Economics*, 10(7): pp.2035-2039, 2019.
- [46] A.V. Kostruba and P.F. Kulynych, "Improvement of Public Control Over the Use of Land Resources as an Important Aspect of Modernisation of the Ukrainian State in the XXI Century," *International Journal of Criminology and Sociology*, 9, pp. 3095-3103, 2020.
- [47] I.A. Kapitonov, "Low-Carbon Economy as the Main Factor of Sustainable Development of Energy Security," *Industrial Engineering and Management Systems*, 19(1), pp. 3-13, 2020.
- [48] V. Mishchenko, S. Naumenkova and S. Mishchenko, "Assessing the Efficiency of the Monetary Transmission Mechanism Channels in Ukraine," *Banks and Bank Systems*, 16(3), pp. 48-62, 2021.
- [49] A. Tokarskiy and D. Topchiy, "State Construction Supervision During Repurposing Project Implementation in the Urban Areas," *IOP Conference Series: Materials Science and Engineering*, 698(6), 066061, 2019.
- [50] Y. Buribayev, Z. Khamzina, D. Belkhozhayeva, G. Meirbekova, G. Kadirkulova and L. Bogatyreva, "Human Dignity – the Basis of Human Rights to Social Protection," *Wisdom*, 16(3), 143-155, 2020.
- [51] A. Tkachenko, "The Importance of the ILO in International Processes the Centenary of the International Organization," *Mezhdunarodnye Protsessy*, 17(3), pp. 36–50, 2019.
- [52] M.N. Rudenko, "Entrepreneurship Development Trends in Perm and Sverdlovsk Region," *Journal of Advanced Research in Law and Economics*, 11(3), pp. 993-1008, 2020.
- [53] I.A. Kapitonov, V.G. Korolev, A.A. Shadrin and A.A. Shulus, "The Role of Small and Medium-Sized Innovative Enterprises in the Solution of the Import Substitution Task in Oil and Gas-Sector Segment of the Russian Fuel and Energy Complex," *International Journal of Energy Economics and Policy*, 7(3), pp. 137-145, 2017.
- [54] I.A. Kapitonov, "Legal Support for Integration of Renewable Energy Sources in the Energy Law of the Countries from the International Legal Position," *Kuwait Journal of Science*, 46(1), pp. 68-75, 2019.
- [55] G.M. Karasayev, K.A. Yensenov, K.M. Aldabergenov, B.S. Zhumagulov and T.M. Aminov, "From the History of International Economic, Industrial and Political Relations Between Kazakhstan and Russian Federation (1991-1998)," *Journal of Advanced Research in Law and Economics*, 10(5), pp. 1434-1437, 2019.

- [56] I.A. Kapitonov, T.G. Filosofova and V.G. Korolev, "Development of Digital Economy in the Energy Industry-Specific Modernization," *International Journal of Energy Economics and Policy*, 9(4), pp. 273-282, 2019.
- [57] Y. Barabanshchikov, T. Belkina, A. Muratova and A. Bieliatynskiy, "Heat Liberation of Barium Cements as a Background of Their Application in Mass Concrete Structures," *Solid State Phenomena*, 871, pp. 9-15, 2016.
- [58] G.E. Adygezalova, R.M. Allalyev, A.V. Kiseleva and N.A. Grigorieva, "Copyright Violation and Distribution of Prohibited Content on the Internet: Analysis of Legal Arrangements in the Legislation of the Russian Federation," *Journal of Advanced Research in Law and Economics*, 9(1), pp. 6-14, 2018.
- [59] G.M. Karasayev, S.T. Nabiyeu, K.A. Yensenov, B.S. Zhumagulov and A.A. Oskembay, "Stalin's Agricultural Collectivization Activities in Kazakhstan (XX C. 20-30)," *Opcion*, 36(Special Edition 27), pp. 169-187, 2020.
- [60] E.L. Kuznetsova, G.V. Fedotenkov and E.I. Starovoitov, "Methods of Diagnostic of Pipe Mechanical Damage Using Functional Analysis, Neural Networks and Method of Finite Elements," *INCAS Bulletin*, 12(Special Issue), pp. 79-90, 2020.
- [61] D.I. Bayanov, L.Y. Novitskaya, S.A. Panina, Z.I. Paznikova, E.V. Martynenko, K.B. Ilkevich, V.L. Karpenko and R.M. Allalyev, "Digital Technology: Risks or Benefits in Student Training?" *Journal of Environmental Treatment Techniques*, 7(4), pp. 659-663, 2019.
- [62] Y.A. Buribayev, Z.K. Oryntayev, Z.A. Khamzina, S.Z. Kussainov and A.T. Yermekov, "Evaluation of the Reform Efficiency in Public Social Sector Management of the Republic of Kazakhstan," *Mediterranean Journal of Social Sciences*, 6(3), pp. 191-198, 2015.
- [63] V. Pukhkal, A. Bieliatynskiy and V. Murgul, "Designing Energy Efficiency Glazed Structures with Comfortable Microclimate in Northern Region," *Journal of Applied Engineering Science*, 14(1), pp. 93-101, 2016.
- [64] I.A. Kapitonov, "Development of Low-Carbon Economy as the Base of Sustainable Improvement of Energy Security," *Environment, Development and Sustainability*, 23(3), pp. 3077-3096, 2021.
- [65] A.M. Zatsepin, M.N. Zatsepin, O.V. Filippova, R.M. Allalyev and A.A. Fatkullina, "The Influence of Addiction to Gambling on the Civil Capacity of Citizens," *European Research Studies Journal*, 21(4), pp. 588-599, 2018.
- [66] G.M. Grigorenko, L.I. Adeeva, A.Y. Tunik, V.N. Korzhik and M.V. Karpets, "Plasma arc Coatings Produced from Powder-Cored Wires with Steel Sheaths," *Powder Metallurgy and Metal Ceramics*, 59(5-6), pp. 318-329, 2020.
- [67] G.M. Karasayev, K.A. Yensenov, B.S. Zhumagulov, K.M. Aldabergenov and B.T. Batkeeva, "The Historical Aspects of Economic and Legal International Relations of Independent Kazakhstan and China (1991-1997)," *Journal of Advanced Research in Law and Economics*, 10(5), pp. 1444-1451, 2019.
- [68] O.A. Zhdanova, T.G. Bondarenko and T.P. Maksimova, "Peer-to-Peer Lending in the Modern Financial System," *Journal of Advanced Research in Dynamical and Control Systems*, 11(11 Special Issue), pp. 116-124, 2019.
- [69] Y. Haydanka, "Urgent Decentralization Problems in the Czech Republic at a Regional Level: Political, Administrative and Sociological Dimensions," *Public Policy and Administration*, 19(2), pp. 253-265, 2020.
- [70] O. Stepanchuk, A. Bieliatynskiy, O. Pylypenko and S. Stepanchuk, "Surveying of Traffic Congestions on Arterial Roads of Kyiv City," *Procedia Engineering*, 187, pp. 14-21, 2017.
- [71] M.M. Ihnatenko, L.O. Marmul, D.S. Ushakov and S.P. Kuchyn, "Transformation of Approaches to Determine Influence Factors in the Economic Development Models," *International Journal of Economics and Business Administration*, 7(2), pp. 290-301, 2019.

- [72] V. Sydorets, V. Korzhyk, V. Khaskin, O. Babych and O. Berdnikova, "On the Thermal and Electrical Characteristics of the Hybrid Plasma-MIG Welding Process," *Materials Science Forum*, 906, pp. 63-71, 2017.
- [73] A.Z. Skorokhod, I.S. Sviridova and V.N. Korzhik, "Structural and Mechanical Properties of Polyethylene Terephthalate Coatings as Affected by Mechanical Pretreatment of Powder in the Course of Preparation," *Mekhanika Kompozitnykh Materialov*, 30(4), pp. 455-463, 1994.
- [74] S.S. Tashpulatov, I.V. Cherunova, M.K. Rasulova, D.D. Inogamdjanov, M.Yu. Umarova, A.D. Daminov, U.R. Uzakova and S.G. Jurayeva, "Development of the Calculation Method of Polymer Compound Mass to Be Applied onto the Textile Garment Pieces," *IOP Conference Series: Materials Science and Engineering*, 459(1), 012067, 2018.
- [75] K.N. Mursalova, B.A. Ainakanova, A.S. Kazkenova, N. Zhalelkanova and O. Ozpence, "Analysis of Problems of Kazakhstan's Economic Integration in the EAEU," *Journal of Advanced Research in Law and Economics*, 11(4), pp. 1218-1232, 2020.
- [76] A.N. Dunets, I.B. Vakhrushev, M.G. Sukhova, M.S. Sokolov, K.M. Utkina and R.A. Shichiyakh, "Selection of Strategic Priorities for Sustainable Development of Tourism in a Mountain Region: Concentration of Tourist Infrastructure or Nature-Oriented Tourism," *Entrepreneurship and Sustainability Issues*, 7(2), pp. 1217-1229, 2019.
- [77] A.V. Kostruba, "Corporate Responsibility in the Environmental Protection as an Element of Public-Private Partnership in Ukraine," *Public Policy and Administration*, 20(1), pp. 118-126, 2021.
- [78] A.V. Kostruba, "Right Deprivation in the Legal Regulation Mechanism of Civil Property Relations: Comparative Analysis of International Legislation," *Asia Life Sciences*, 22(2), pp. 143-156, 2020.
- [79] Y. Sun, M.Y. Kuprikov and E.L. Kuznetsova, "Effect of Flight Range on the Dimension of the Main Aircraft," *INCAS Bulletin*, 12(Special Issue), pp. 201-209, 2020.
- [80] D. Ushakov and S. Chich-Jen, "Global Economy Urbanization and Urban Economy Globalization: Forms, Factors, Results," *E-Planning and Collaboration: Concepts, Methodologies, Tools, and Applications*, 2-3, pp. 1096-1119, 2018.
- [81] A. Onishchenko, L. Stolyarova and A. Bieliatynskiy, "Evaluation of the Durability of Asphalt Concrete on Polymer Modified Bitumen," *E3S Web of Conferences*, 157, 06005, 2020.
- [82] L.N. Nutfullaeva, A.F. Plekhanov, I.G. Shin, S.S.H. Tashpulatov, I.V. Cherunova, S.H.N. Nutfullaeva and E.A. Bogomolov, "Research of Conditions of Formation Package and Ensure the Safety of the Pillows from Composite Nonwoven Fibers Materials," *Izvestiya Vysshikh Uchebnykh Zavedenii, Seriya Tekhnologiya Tekstil'noi Promyshlennosti*, 380(2), pp. 95-101, 2019.
- [83] O. Stepanchuk, A. Bieliatynskiy, O. Pylypenko and S. Stepanchuk, "Peculiarities of City Street-Road Network Modelling," *Procedia Engineering*, 134, pp. 276-283, 2016.
- [84] K. Krayushkina T. Khymeryk and A. Bieliatynskiy, "Basalt Fiber Concrete as a New Construction Material for Roads and Airfields," *IOP Conference Series: Materials Science and Engineering*, 708(1), 012088, 2019.
- [85] M.Y. Kharlamov, I.V. Krivtsun, V.N. Korzhyk, V.V. Ryabovolyk and O.I. Demyanov, "Simulation of Motion, Heating, and Breakup of Molten Metal Droplets in the Plasma Jet at Plasma-Arc Spraying," *Journal of Thermal Spray Technology*, 24(4), pp. 659-670, 2015.
- [86] I.V. Cherunova, S.S. Tashpulatov and S.V. Kurenova, "Treated Textile Electrostatic Properties Study," *Materials Science Forum*, 992, pp. 439-444, 2020.
- [87] Y.A. Buribayev, G. Mukaldyeva, G.G. Nurahmetova, B. Uteyev, Y. Nessipbekov and Z.A. Khamzina, "Pension Reform in the Republic of Kazakhstan: Main Directions, Conditions for Implementation and Development Prospects," *International Journal of Environmental and Science Education*, 11(18), pp. 11611-11619, 2016.

- [88] T.G. Bondarenko, O.A. Zhdanova, N.E. Bondarenko, L.V. Goryainova and T.P. Maksimova, "Improvement of the Mechanism for Financing the Agro-Industrial Sector in the Russian Federation," *International Journal of Mechanical Engineering and Technology*, 9(9), pp. 1419-1426, 2018.
- [89] Y. Haydanka, "Electoral and Citizen's View on Euroscepticism in Transitional Society: The Case of the Czech Republic," *Online Journal Modelling the New Europe*, 33, pp. 111-133, 2020.
- [90] D.U. Ryskaliyev, A. Mirzaliyeva, G. Tursynbayeva, E.M. Muratova, Y.A. Buribayev and Z.A. Khamzina, "Gender Inequality Among Employees in Kazakhstan," *Lawyer Quarterly*, 9(4), pp. 319-332, 2019.
- [91] Y.V. Lyandau and M.G. Umnova, "Development of Management System of Public Procurement Participation in Supplier Companies," *Quality - Access to Success*, 22(182), pp. 95-101, 2021.
- [92] I. Kotenko, A. Krasov, I. Ushakov and K. Izrailov, "An Approach for Stego-Insider Detection Based on a Hybrid Nosql Database," *Journal of Sensor and Actuator Networks*, 10(2), 25, 2021.
- [93] M. Demiral, O. Demiral, A. Khoich and A. Maidyrova, "Empirical Links Between Global Value Chains, Trade and Unemployment," *Montenegrin Journal of Economics*, 16(4), pp. 95-107, 2020.
- [94] A.S. Zinchenko, "Project-Focused Personnel Management Approach of Higher Educational Institutions," *Asia Life Sciences*, 22(2), pp. 243-256, 2020.
- [95] D.Y. Savon, E.V. Shkarupeta, A.E. Safronov, A.Y. Anisimov and N.O. Vichrova, "Digital Transformation of Production Processes and Mining Business Models in the Conditions of Market Instability," *Ugol*, 2, pp. 32-37, 2021.
- [96] Y. Li, A.M. Arutiunian, E.L. Kuznetsova and G.V. Fedotenkov, "Method for Solving Plane Unsteady Contact Problems for Rigid Stamp and Elastic Half-Space with a Cavity of Arbitrary Geometry and Location," *INCAS Bulletin*, 12(Special Issue), pp. 99-113, 2020.
- [97] I.V. Babenko, A.Y. Anisimov, V.Y. Melnikov, I.A. Kubrak, I.I. Golubov and V.L. Boyko, "Sustainable Supply Chain Management in City Logistics Solutions," *International Journal of Supply Chain Management*, 9(2), pp. 1081-1085, 2020.
- [98] I.S. Lukasevych-Krutnyk, "The Concept and Methods of Harmonisation of the Private Law Legislation of Ukraine in the Field of Provision of Transport Services with the Legislation of the European Union," *Journal of the National Academy of Legal Sciences of Ukraine*, 27(2), pp. 91-106, 2020.
- [99] H.A. Hevorhyan and S.O. Kushnir, "Investment in IT as a Priority Area of Economic Development in Ukraine," *Scientific Bulletin of Mukachevo State University. Series "Economics"*, 8(2), pp. 25-34, 2021.
- [100] V. Maslennikov, O. Grishina, Y. Lyandau and I. Kalinina, "The Strategy of Universities: Are They Increasing Their Competitiveness?" *Proceedings of the 30th International Business Information Management Association Conference, IBIMA 2017 - Vision 2020: Sustainable Economic development, Innovation Management, and Global Growth*, 1, pp. 4376-4384, 2017.
- [101] M.V. Hobrei, "Attracting Direct Investments in the Regions of Ukraine and Their Impact on the Economic Development of the Transcarpathian Region," *Scientific Bulletin of Mukachevo State University. Series "Economics"*, 1(13), pp. 147-151, 2020.
- [102] B.M. Nurgaliyev, G.M. Rysmagambetova, K.S. Lackbayev and A.A. Shulanbayev, "Problems and Conflicts of the Intelligence and Criminal Procedure Legislation of the Republic of Kazakhstan," *Rivista di Studi sulla Sostenibilita*, 2020(1), pp. 391-402, 2020.
- [103] G.S. Isayeva, A.V. Martynenko, O.A. Beloded, T.A. Struk, M.V. Vovchenko and T.A. Bondar, "Effect of Age, Sex Hormones and Aldosterone on SCORE in Perimenopausal Women," *Life Science Journal*, 12(1), pp. 44-49, 2015.
- [104] M.M. Velykanova, "Distribution of Risk of Harm in Delictual Responsibility from the Standpoint of Economic Analysis of Law," *Journal of the National Academy of Legal Sciences of Ukraine*, 27(2), pp. 119-130, 2020.

- [105] D. Shakirova, E. Ivanova, A.Y. Abaidilda and A.B. Maidyrova, "Management of University Innovation Potential in the Modern Reality of Kazakhstan," *International Journal on Emerging Technologies*, 10(2), pp. 141-144, 2019.
- [106] K.S. Lakbayev, G.M. Rysmagambetova, A.U. Umetov and A.K. Sysoyev, "The Crimes in the Field of High Technology: Concept, Problems and Methods of Counteraction in Kazakhstan," *International Journal of Electronic Security and Digital Forensics*, 12(4), pp. 386-396, 2020.
- [107] N. Kuzhel, A. Bieliatynskiy, O. Prentkovskis, I. Klymenko, S. Mikaliunas, O. Kolganova, S. Kornienko and V. Shutko, "Methods for Numerical Calculation of Parameters Pertaining to the Microscopic Following-The-Leader Model of Traffic Flow: Using the Fast Spline Transformation," *Transport*, 28(4), pp. 413-419, 2013.
- [108] A.N. Oboladze and I.A. Nechayeva, "Multifactor Model of Evaluation of Investment Attractiveness of the Enterprise," *Scientific Bulletin of Mukachevo State University. Series "Economics"*, 7(2), pp. 8-21, 2020.
- [109] V.P. Bratyuk and H.T. Mykhalchynets, "Gold in Ukraine: Investment or Business. Modern View," *Scientific Bulletin of Mukachevo State University. Series "Economics"*, 1(13), pp. 191-197, 2020.
- [110] T.M. Mishchenko, "The Threat of Penetration of Corrupt Connections of Organised Crime to the Authorities and Management: Current Realities in Ukraine," *Legal Horizons*, 14(2), pp.9-15, 2021.
- [111] K.S. Kosinova, "The Problem of the Objectivity of Outsourcing Relationship in the System of the Economic and Business-Legal Policy of the State," *Journal of the National Academy of Legal Sciences of Ukraine*, 26(2), pp. 146-160, 2019.
- [112] T. Dziuba, "Information Model for Improving Accounting and Analytical Support for Economic Potential Management," *Scientific Horizons*, 24(2), pp. 108-119, 2021.
- [113] E. Biryukov, O. Elina, Y. Lyandau and N. Mrochkovskiy, "Russian SMEs in Achieving Sustainable Development Goals," *E3S Web of Conferences*, 258, 06021, 2021.
- [114] B. Kovačič, R. Kamnik and A. Bieliatynskiy, "The Different Methods of Displacement Monitoring at Loading Tests of Bridges or Different Structures," *MATEC Web of Conferences*, 53, 01048, 2016.
- [115] O.I. Kulyk, "Economic Regime of Mining," *Legal Horizons*, 14(2), pp. 98-104, 2021.
- [116] A. Markovska and A. Isaeva, "Public Sector Corruption: Lessons to Be Learned from the Ukrainian Experience," *Crime Prevention and Community Safety*, 9(2), pp. 118-129, 2007.
- [117] A.B. Maydirova, R.A. Baizholova, L.K. Sanaliev, G.T. Akhmetova and A.A. Kocherbaeva, "Strategic Priorities of Kazakhstan Innovative Economy Development," *Opción*, 36(Special Edition 27), pp. 779-793, 2020.
- [118] V.V. Rudenko, "Origin and Development of the Fiscal Mechanism of Regulation of Investment Processes in the Ukrainian Lands in Princely Times," *Scientific Bulletin of Mukachevo State University. Series "Economics"*, 7(2), pp. 96-107, 2020.
- [119] O.P. Podtserkovny, "The Experience of Specialization of Economic (Commercial) Jurisdiction in Ukraine and Western Countries," *Journal of the National Academy of Legal Sciences of Ukraine*, 25(1), pp. 146-161, 2018.
- [120] S. Oleksandra, K. Krayushkina, T. Khymerik and B. Andrii, "Method of Increasing the Roughness of the Existing Road," *Procedia Engineering*, 165, pp. 1766-1770, 2016.