

# “Evaluation of investment environment security in Ukraine”

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# EVALUATION OF INVESTMENT ENVIRONMENT SECURITY IN UKRAINE

## Abstract

World economic crises, internal economic and political instability have led to declining the level of investment attractiveness and investment security of Ukraine. The aim of the article is to propose an integral index in order to assess investment environment security and determine factors affecting the investment environment security of Ukraine. The suggested assessment is based on the data of World Bank's indexes with the following blocks of factors: the availability of economic freedom, favorable organizational conditions for doing business, political and legal freedom, supply of resources and infrastructure development. The assessment of Ukrainian investment environment security and its Western neighbors – the European Union member states – has shown that it has lowest rank and highest volatility in Ukraine. The article identifies a direct statistical relation between the volume of foreign direct investment flows in Ukraine and the indicator of political stability and the absence of violence in the country. The main reasons of investment attractiveness reduction in Ukraine were as follows: conservative attitude of investors towards risks due to political instability, manifestations of violence and terrorism; deterioration of the overall financial situation of enterprises, which are the recipients of investments. The article substantiates that conditions for the investment attraction and secure environment in Ukraine have not been formed yet. The system of indicators and criteria for assessing the level of investment environment security should be expanded.

## Keywords

investment security, investment environment, integral index, security factors, investment flows, foreign direct investment

## JEL Classification

F2, O11, P52

## INTRODUCTION

Currently, Ukrainian economy develops through influence of regular acceleration of economic relations at all levels. In addition, interaction of economic entities faces intensified pressure of changes in social, political and ecological environment. In such conditions, the state of investment security is one of the elements of the sustainable development of Ukrainian economy. It is the necessary condition throughout the Ukrainian economic system on the whole, as well as an enterprise. It is also the key element of increasing the level of competitiveness of business entity and a country in modern conditions of unstable world economic development. The goal of investment security in Ukraine is to create a single mechanism, which constantly attracts money, on the one hand, and, on the other hand, ensure constant selection, preparation and implementation of new investment projects.

Ukrainian government has strong interest in both protecting economic security and fostering the economic benefits associated with an open investment environment. In practice, on the one hand, it means the government encourages foreign investment and opens borders for it. On the other hand, political and economic situation in Ukraine

when investments are blocked, politicized, or unnecessarily delayed, leads to companies' decision that the risks are too great to invest in certain sectors in Ukraine, costing Ukraine jobs and economic growth.

Nowadays, the problem of investment security is worsening in Ukraine. Experts recognize the critical increase in the risk of doing business and decrease the level of investment attractiveness of the country. The capital investments amount, as well as foreign direct investments amount, decreased almost twice compared to 2010.

According to the Heritage Foundation's estimations of Economic Freedom Index, Ukrainian Index of Investment Freedom was from 15.0 in 2015 to 20.0 in 2016 and has the lowest rank among all other elements of Economic Freedom Index. During 2015–2016, the Index of Investment Freedom of Ukraine was lower than indexes of property rights, judicial effectiveness and government spending, which constantly are considered as the lowest elements of the total Economic Freedom Index of Ukraine.

Despite the governmental efforts to stabilize economic and political situation in the country, Ukraine still has the lowest integral index of investment environment security compared to other European countries that started economic transition to market conditions at the same period of time.

Therefore, key provisions ensuring investment security should be grounded on understanding its level, indicators of its evaluation and opportunities in investment environment (from the perspective of transformation of the negative factors of the external and internal environments into growth factors). The management of the processes of investment environment security formation should be based on a structured assessment technique and an objective system of its indicators and its criteria.

## 1. LITERATURE REVIEW

A large number of contemporary scientific publications are devoted to identification of investment environment security and its main components, tools for assessing its level and analyzing its status (Volos, 2014; Heyets, 2006; Mishuk, 2005; Moroz, 2017; Luciani, 1988; Cable, 1995; Marsh, 2012; Williams, 1982). The essence of investment environment security is interpreted as a process of ensuring certain status of investment sphere. According to such status, economy faces internal and external threats and it is able to maintain the sufficient level of investment resources. It is necessary to ensure sustainable development, social and economic stability of a country, growth of competitiveness of national economy and welfare of the population (Lipych, 2011). Nedashkivskyi (2012) defines the security of investment environment as the ability of an economic system to attract and use investment resources efficiently. Kyrylenko (2005) describes it as the ability to maintain production accumulation and capital investment at a level which provides the necessary pace for expanded reproduction, restructuring and technological re-equipment of economy.

We define security of investment environment as an integral part of economic security system, which characterizes the state and prospects of economic development indirectly, reflects the strategic aspect of immunity formation against real and potential, internal and external threats.

The definitions of the essential characteristics of investment environment security vary greatly. The main characteristic is explained through effective use and return on invested funds (Baranovskyi, 2004; Moscal, 2013); through the capacity of investment and innovation development of economic system (Shkarlet, 2007); through the relation between economic security and private investment (Poirson, 1998) and through the influence enterprise's value by changes in status of economic and investment security (Inglehart, 1994).

Murdoch (1997) highlights economic (including investment) factors among the security factors, while Volos (2014) points out that state security is directly dependent on investment mechanisms, foreign investment and public debt. Investment security is also determined by the level of return on investment; presence or absence of insurance

of investment risks; degree of investor awareness; way of receiving investment income; exchange rate regime and interest rate established in the country (Baranovskyi, 2014).

Specific features of modern investment security assessment investigations are the following:

- vast majority of studies based on the assessment of such key components of security environment as investment and innovation (Fedulova, 2016; Nedashkivskyi, 2012; Varnaliy, 2016; Asheim, 1996; Cooke, 2004; Stein, 2004);
- depending on differentiation of methodological approaches to the assessment of investment environment security on the object of evaluation: state, region, enterprise (Savluk, 2013; Zablodska, 2009; Blank, 2004);
- main methodological approaches to the assessment of the level of security based on the use of weighting indexes. They are usually chosen by expert assessments as a part of the integral valuation indicator (Borys, 2013; Kharlamova, 2014).
- non-permission to carry out a comparative characteristics of investment environment security in different countries of some methodological approaches of national scientists (Shevchenko, 2009; Baranovskyi, 2014).

Therefore, there is theoretical and practical necessity of further investigations of investment environment security and its integral concept, which provides valuation tools for the management system of investment environment security in order to create the target level of economic security in general.

## 2. RESEARCH GOAL

The aim of the research is to offer integral index for assessing investment environment security of a country, to apply it for the evaluation of Ukrainian investment environment security in comparison with its Western neighbors – the European Union member states – and to verify the reliability of the

assessment model taking into consideration current factors of investment environment security in Ukraine.

## 3. METHODS

The security status of investment environment is one of the most important components of investment attractiveness of separate sectors and of the national economy on the whole. This status is a complex concept, its valuation involves the use of specific methodological approaches. It should be pointed out that it is impossible to consider all factors affecting the security of investment environment. It is feasible to use a simplified model of an integral index based on publicly available data, the World Bank's indexes calculated according to generally accepted methods for the purposes of valuation and comparative analysis of the security status of investment environment. The justification for the possibility and feasibility of using such a simplified model is described in a number of modern researches (Oliynyk et al., 2015; Matusova et al., 2018).

Currently, the most common and official approach for estimating economic security in Ukraine is used by the Ministry of Economic Development and Trade.

In our opinion, however, the situation regarding the economic security of investment environment reflects the position of Ukraine in international ratings quite clearly. In order to assess the security status of investment environment of a separate country, it is proposed to build an integral index by generalizing 4 indexes. Each of them characterizes a separate block of key determinants: the existence of basic economic freedoms (index of economic freedom), favorable organizational conditions for doing business (business ranking), resources supply and development of infrastructure (global competitiveness index), the state of the political and legal system. In order to assess the first three key determinants, the indicators are presented exactly original. While assessing the state of the political and legal system, preliminary transformation into the index is made on the basis of initial estimates of such indexes as the index of the fight against corruption; the index of politi-

cal stability and absence of violence or terrorism; quality of regulation and the rule of law.

In the process of calculating the integral index, the significance of each of the four indexes is considered to be the same. It enables to avoid distortions of the result associated with subjective judgments of assigning ranks of significance. This way the integral index of the security status of investment environment of a separate country is calculated as the area of a quadrilateral. The vertices of it are deposited in a coordinate system with four axes. Each of the axes corresponds to one of the above-mentioned indexes. The resulting value of the quadrilateral area correlates with the maximum possible area for it; all vertices are at the level of the coordinate 1 (that is, maximum possible size for the quadrilateral) and are expressed in decimal fraction (part per unit) according to the formula 1:

$$I_{inv} = \frac{I_1 \cdot I_2 + I_2 \cdot I_3 + I_3 \cdot I_4 + I_4 \cdot I_1}{4}, \quad (1)$$

where  $I_{inv}$  – the integral index of investment environment security status,  $I_1$  – index of basic economic freedoms,  $I_2$  – index of favorable organizational conditions for doing business,  $I_3$  – index of resources supply and development of infrastructure,  $I_4$  – index of the state of the political and legal system.

In addition to simplicity and accessibility, one of the significant advantages of the proposed model is the possibility of interpreting the results of its application in the form of a petal diagram.

## 4. RESULTS

The security of investment environment indirectly characterizes the conditions and prospects of economic development, reflects the strategic aspect of the economic immunity formation against real and potential threats of internal and external nature. Furthermore, forecasting future proportions of the macroeconomic environment and its implementation in microeconomic constituents define the content and technological component of investment at all levels of national economy, provide certain requirements for the guarantees of the formation and management of those processes in the focus of security.

Efficient activity of enterprises in the long-term perspective, ensuring their high rates of development and increasing competitiveness are largely determined by the level of their investment activity and the level of investment environment security. We consider that the investment environment security depends primarily on economic conditions. However, economic factors cannot fully reflect the situation in the country regarding the investment environment security. Therefore, political, legal and social factors ultimately affect an attractiveness of a country for investors. The investment environment security plays a significant role in the mechanism of investment activity of enterprises and foreign investors.

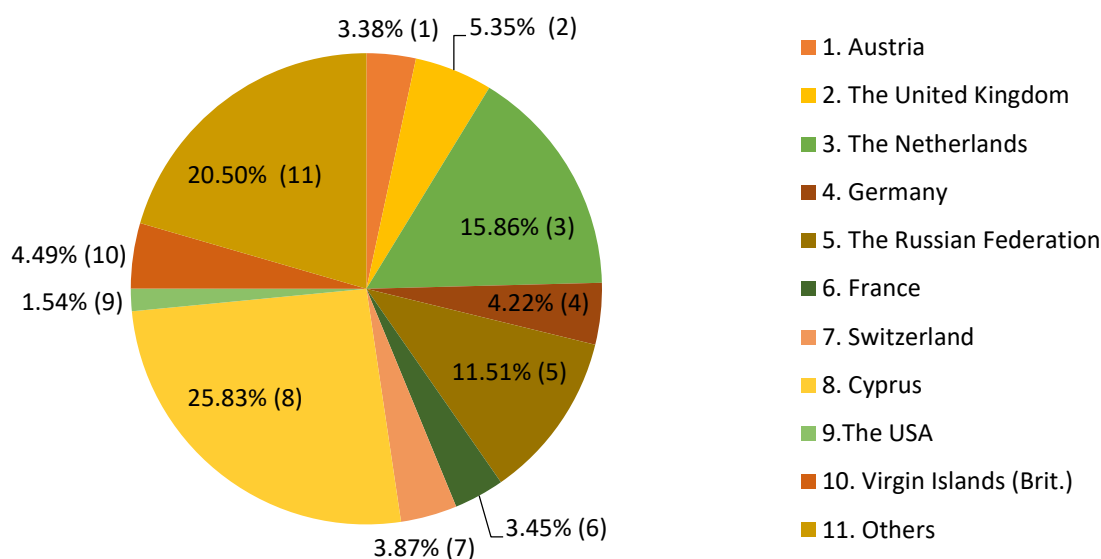
Low level of investment environment security is one of the reasons of stable fall trend of direct investment inflow in Ukraine, the volume of which decreases throughout the investigated period. The volume of direct investment in 2016 is 37.6 billion US dollars, which is 10.5 billion US dollars less than in 2012 and it is the lowest value for the whole period under study.

It should be pointed out that in 2016, 25.83% of direct investment is revenues from Cyprus (9.6 billion US dollars). According to the State Statistics Service of Ukraine, it was the largest share among the countries investors. Such inflows can be considered as conventional foreign to the origin of offshore territory. The Netherlands (15.86%) has been ranked the second in terms of direct investment in Ukraine (Figure 1).

The Russian Federation with an investment of 4.3 billion US dollars (11.51%) is on the third place by the volume of direct investment. The United Kingdom with its Virgin Islands also influenced Ukrainian economy greatly (9.84% totally). Germany is also among big investors to Ukraine (4.22%). The investment inflow impulses to Ukraine are approximately the same from Switzerland (1.5 billion US dollars), France (1.3 billion US dollars) and Austria (1.3 billion US dollars), which are 3.87%, 3.45% and 3.38%, respectively. The volume of direct investments to Ukraine from the USA is 1.54% of their total volume; from other countries – 20.5%.

In the context of assessing the integral index for Ukraine (Table 1), it is evident that the investment environment security is unsatisfactory in com-

Source: Developed by the authors on the basis of the State Statistics Service of Ukraine.



**Figure 1.** Direct investments from countries into Ukrainian economy in 2016

parison with the nearest neighboring countries, which are members of the EU.

There can be noted the highest growth rate of the integral index of investment environment security compared with neighboring countries as a positive achievement of Ukraine. For the period from 2010 to 2016, the average annual growth rate was 4.2%. It is higher than the rate in Poland (3.6%) and the Czech Republic (3.3%) who are the leaders in terms of increasing investment attractiveness among neighboring countries (in other countries, this index was lower, and in Hungary, it was even negative).

In spite of some positive trends in dynamics of the integral index of investment environment security in Ukraine (from 0.152 in 2010 to 0.195 in 2016), its value is more than twice less compared to the

worst value for the neighboring countries (0.438 in 2016) and is more than three times less compared to the best value for the neighboring countries (0.566 in 2016) throughout the analytical period.

In addition to gap from the overall level of the integral index of investment environment security, Ukraine has shown the highest volatility of this level compared to its Western neighbors in recent years. It is seen from variation coefficients values of the integral indexes of different countries (Figure 2).

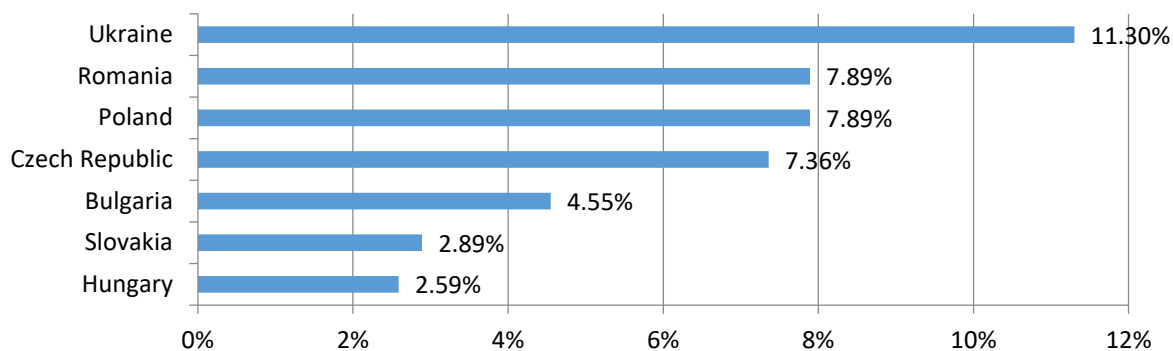
The high variation coefficients of the integral indexes in certain countries (Poland, Czech Republic, Romania and Ukraine) can be explained by increased vulnerability of the economies of these countries to the impact of global crisis phenomena and their weak security potential during the

**Table 1.** Integral index of investment environment security of Ukraine and its Western neighbors (EU members) during 2010–2016

Source: Developed by the authors on the basis of the World Bank data.

Country	2010	2011	2012	2013	2014	2015	2016
Czech Republic	0.465	0.493	0.481	0.480	0.471	0.548	0.566
Poland	0.440	0.447	0.465	0.482	0.511	0.534	0.545
Slovakia	0.498	0.494	0.470	0.476	0.466	0.489	0.507
Hungary	0.475	0.480	0.462	0.454	0.451	0.446	0.455
Romania	0.398	0.396	0.359	0.372	0.384	0.438	0.453
Bulgaria	0.415	0.406	0.398	0.382	0.407	0.436	0.438
Ukraine	0.152	0.147	0.142	0.146	0.171	0.176	0.195





**Figure 2.** Variation coefficient of the integral index in Ukraine and its Western neighbors (EU members) for 2010–2016

research period. However, a high variation is traditionally considered as a sign of additional risk.

The high growth rates of the integral index of investment environment security did not ensure the corresponding increase in the volume of capital investments in the Ukrainian economy and on the contrary they were accompanied by significant decrease of those volumes (Table 2).

The data in Table 2 show very low volumes of capital investments. Their volumes in 2016 (14.1 billion US dollars) are much lower than the volumes during 2010–2013 (from 22.8 to 34.2 billion US dollars). By the end of the research period, there were no sufficient capital investments at the necessary level to ensure the extended reproduction of fixed assets. It creates preconditions for sustainable economic growth. It also should be noted that in 2016, there was the lowest volume of capital investments into intangible assets (0.46 billion US dollars). Such kind of investments is a criterion of innovative develop-

ment of a country and this factor directly shows the trend of changes in investment environment security.

The data in Table 2 indicate strong inverse statistical dependence between the integral index of investment environment security in Ukraine and all (without exception) indicators, which characterize the volume of capital investments in terms of their main types and sources of financing.

A similar pattern with lower modular values of coefficients of pair correlation is observed considering the volume of foreign direct investment inflows in Ukraine.

Lack of foreign direct investments into the Ukrainian economy is the manifestation of uncertainty of foreign investors in the sufficient level of investment environment security. Foreign direct investments were half less in 2016 (3.28 billion US dollars) than in 2010 (6.5 billion US dollars) (Table 3).

**Table 2.** Correlation between the integral index of investment environment security and capital investments in Ukraine for 2010–2016

Source: Calculated by the authors on the basis of the data of the State Statistics Service of Ukraine.

Indicator	2010	2011	2012	2013	2014	2015	2016	Coefficient of pair correlation
<b>Capital investments, billion US dollars</b>								
Total	22.76	30.28	34.20	30.66	18.30	12.51	14.06	-0.912
Machines, equipment and inventory	6.81	9.01	9.64	9.70	5.75	3.87	4.82	-0.882
Other tangible assets	15.07	20.10	23.51	19.68	11.93	7.80	8.78	-0.912
Intangible assets	0.87	1.18	1.05	1.29	0.62	0.84	0.46	-0.876
Integral index of investment environment security status	0.152	0.147	0.142	0.146	0.171	0.176	0.195	1

**Table 3.** Correlation between the integral index of investment environment security and indicators of foreign direct investment into the economy and external debt of Ukraine for 2010–2016

Source: Calculated by the authors on the basis of the data of the National Bank of Ukraine.

Indicator	2010	2011	2012	2013	2014	2015	2016	Coefficient of pair correlation
<b>Foreign direct investments into economy, billion US dollars</b>								
Total	6.50	7.21	8.40	4.50	0.41	2.96	3.28	-0.709
Equity swaps	5.55	6.12	6.25	3.67	0.71	4.00	3.55	-0.560
Debt investments	0.95	1.09	2.15	0.83	-0.30	-1.04	-0.27	-0.826
<b>External debt (year-end surplus), billion US dollars</b>								
Total external debt	117.35	126.24	134.63	142.08	126.31	118.73	113.64	-0.717
External sovereign debt	32.49	33.37	32.20	31.70	35.06	42.67	42.74	0.910
Integral index of investment environment security	0.152	0.147	0.142	0.146	0.171	0.176	0.195	1

Improvement of the investment climate in the country contributes to an increase in the volume of invested foreign capital and is accompanied by an intensification of investment activity. The attraction of foreign investments will enable Ukraine to solve the problems of completing the structural reform of the economy, increasing the competitiveness of products and enterprises and moving to an innovative development model.

The obtained results testify the insufficient growth of investment attractiveness of Ukraine in recent years for investors. We consider that the possible reasons of this situation are:

- increase of unfavorable (conservative) attitude of investors to the risks associated with political instability, manifestations of violence and terrorism;
- deterioration of the overall financial condition of the enterprises which are recipients of investments (resulting from devaluation of the national currency as well).

The exception is the situation with the formation of the external sovereign debt of Ukraine, which is also an integral part of the investment process. There is a significant direct statistical relationship between the integral index of investment environment security and the volume of external sovereign debt; the corresponding value of the coefficient of pair correlation is 0.91.

The success of the market transformation of Ukrainian economy depends on volumes of for-

eign direct investment. The most important factors determining the volume of attraction of foreign direct investment are the state policy on foreign direct investment; economic, political and social stability; availability of regulatory investment framework; state measures aimed at overcoming corruption. Governmental measures are being taken to ensure favorable conditions for attraction of foreign direct investment in Ukraine through creation of effective mechanisms for stimulating investors, improvement of the legal framework and of the investment image of Ukraine in the world.

The peculiarities of dynamics of foreign direct investment flows into Ukrainian economy may be explained through using one of the elements of integral index of the investment environment condition. The volume of foreign direct investment flows into Ukrainian has a direct statistical relation to the indicator of political stability and the absence of violence in the country according to the World Bank data (Table 4).

The highest coefficient of pair correlation is between the volume of foreign direct investment flows into the economy and the indicator of political stability and the absence of violence in the country – 0.92. There is also a significant relation between foreign direct investment flows and the indicator of rating of doing business (the coefficient of pair correlation is 0.766). It shows close connection of business environment security and investment environment security.

The revealed statistical relationship between the indicator of political stability and the volume of



**Table 4.** Correlation between the volume of foreign direct investment flows into the economy and individual indicators characterizing investment attractiveness of Ukraine for 2010–2016

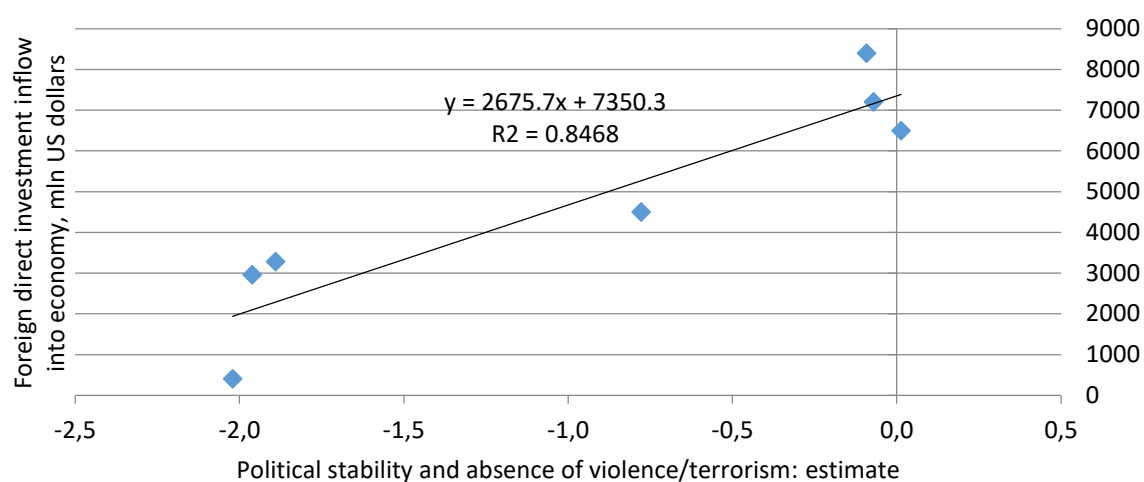
Source: Calculated by the authors on the basis of the data of the World Bank and the National Bank of Ukraine.

Year	Rating of doing business	Control of corruption	Regulatory quality	Rule of law	Political stability and absence of violence/terrorism	Foreign direct investment in Ukraine
2010	142	-1.027	-0.516	-0.808	0.013	6495
2011	145	-1.050	-0.603	-0.819	-0.070	7207
2012	152	-1.077	-0.595	-0.783	-0.092	8401
2013	137	-1.132	-0.624	-0.804	-0.777	4499
2014	112	-0.994	-0.629	-0.791	-2.021	410
2015	96	-0.980	-0.595	-0.814	-1.962	2961
2016	83	-0.841	-0.430	-0.765	-1.891	3284
Coefficient of pair correlation	0.766	-0.464	0.023	-0.195	0.920	1

foreign direct investment flows into Ukrainian economy is essential and enables to construct a regression model (Figure 2). The constructed simple linear regression model is statistically reliable and adequate, it is confirmed by the high value of the determination coefficient and low (significantly lower than critical)  $p$ -values of the regression coefficients (gradient and  $y$ -intercept in the straight line equation) as the results of regression analysis, as well as random distribution of the remainders of the regression model and the absence of the effect of heteroscedasticity.

It should be mentioned that rating of doing business in contradistinction to the indicator of political stability and lack of violence has a kind of paradoxical statistical relationship with the volume of foreign direct investment flows into

Ukrainian economy. According to the data of Table 4, the higher this rating was, the less foreign direct investment came to Ukraine during the period from 2010 to 2016. There is insufficient speed of economic reforms implementation, which may contribute to the growth of investment attractiveness and economic security of the state. There is also a weak statistical interrelation between the volume of foreign direct investment flows and the indicators of corruption control, quality of regulation and the rule of law in the country (the coefficients of pair correlation are 0.464, 0.023 and 0.195, respectively). It is probable that investors do not pay attention to all those indicators (except the indicator of political stability and lack of violence in the country), but additional in-depth studies to test this assumption are needed.

**Figure 3.** Regression model of dependence of the foreign direct investment flows into the economy upon the indicator of political stability and the absence of violence in Ukraine for 2010–2016

## CONCLUSION

The investigation of separate factors influences the investment environment security and is important in the context of the processes of globalization and internationalization. We define the security of the investment environment as an integral part of system of economic security. It indirectly characterizes the conditions and prospects for economic development, reflects the strategic aspect for immunity acquiring against real and potential, internal and external threats. It is proposed the methodological approach to assessing the security status of the investment environment of a certain country based on the integral indicator. On the basis of the integral indicator the assessment of the security status of the investment environment of Ukraine and its Western neighbors (member states of the European Union) was made. The security status of the investment environment in Ukraine is significantly lower than in all other countries under study.

The obtained results testify the insufficiency of the growth of the investment environment security in Ukraine during the recent years in order to motivate the investment activity of capital owners. Capital investment volumes in Ukraine in 2016 are significantly lower than the investment volumes during 2010–2014. By the end of the research period, sufficient capital investment was not attained at the level necessary to ensure the extended reproduction of the fixed assets, and hence for formation of preconditions for sustainable economic growth.

Lack of foreign direct investments in Ukrainian economy is manifestation of uncertainty of foreign investors in the sufficient level of investment environment security (in 2016, the volume of foreign direct investment was twice less than in 2010). Among the possible reasons for such a situation are the following: strengthening the conservative attitude of investors towards risks, due to the pressure of political instability, manifestations of violence and terrorism; deterioration of the overall financial status of enterprises which are recipients of investments (significant devaluation of the national currency as well).

Thus, Ukraine has not yet formed the secured investment environment and it is not favourable for attracting investment. The system of indicators and criteria for assessing the security status of the investment environment needs to be expanded. It should enrich and update the tools for managing this process. The application of the proposed model for assessing the security investment environment will enable to create real possibilities to diagnose its status; to substantiate managerial influence on optimization processes; to make reserves against threats of internal and external origin in the objective process of the development of the global economic environment.

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