

## Conditions and Factors Forming Investment Attractiveness of Eastern Europe Countries

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**ABSTRACT.** In the article, factors of influence and conditions of investment attractiveness in the Eastern European countries and Ukraine are characterized on the basis of the analysis of the relevant statistical factor, the main features of the investment environment. The given metric is widely used by leading international organizations and analytical companies, which, on the one hand, makes it possible to construct long statistical series, and on the other hand, it is a pictorial indicator of the investment attractiveness of the country. The article considers the special aspects of the investment environment in connection with global track records of the world economy and changes in the area of sustainable development. The dynamics of increase of volume of foreign investments in the national economy and structure of volumes of investments made from Ukraine into the economy of other countries of the world are analysed. The article analyses the factors that influence the adoption of investment decisions and determines the quality of the environment in which the subjects of investment act. In order to determine the factors and conditions for the formation of Ukraine's investment attractiveness, the method of SWOT-analysis was used, based on the results of which it was revealed the threats and advantages and opportunities of improving the investment climate in Ukraine. The method of constructing a multifaceted regression model is used to determine the effect of the main factors shaping the investment climate of the country. The research methods are based on general scientific principles and fundamental positions of economics, social philosophy and statistical science. The results of the analysis determined the need for a comprehensive assessment of the state and trends of the investment climate in Ukraine, using statistical tools for analysing and agreeing quantitative and qualitative components of the model of investment attractiveness estimation of Ukraine and other EU member states. The analysis outputs and the empirical analysis may be used to promote further research for making informed decisions in order to improve the investment image of Ukraine and increase the volume of attraction of foreign investments and capital investments into the national economy.

**KEYWORDS.** Investment attractiveness, foreign investments, models of multivariate estimates, international rating agencies, factors of investment attractiveness of the country, SWOT-analysis method, regression analysis, imperatives of investment policy, investment image.

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## Introduction

We live in a globalized world, where the results of human development are determined not only by actions at the national level, but also by structural peculiarities, events and work at the global level<sup>2</sup>. The Eastern Partnership Initiative was launched in 2009 within the framework of the European Neighborhood Policy. The goal of the Initiative is to assist reform processes in partner countries, including Ukraine<sup>3</sup>. The Eastern Partnership aims to strengthen political association and economic integration between the EU and the Eastern European partner countries<sup>4</sup>. The results of this community contribute to improving the investment image of Ukraine and increase the volume of attraction of foreign investments and capital investments into the economy of the country.

The study is based on the fundamental works of the famous economists: J. Bailey,<sup>5</sup> I Blank,<sup>6</sup> A Duka,<sup>7</sup> M. Porter<sup>8</sup> A. Strickland, A. Thompson,<sup>9</sup> Y Sharp and others. Modern problems of methodological framework of statistical estimation of investment attractiveness of the country (region) became the object of research of a wide range of domestic scientists and specialists: A. Yerina<sup>10</sup>, N. Kovtun<sup>11</sup>, G. Korapanova<sup>12</sup>, R. Kulinich<sup>13</sup>, E. Libanova<sup>14</sup>, D. Lukyanenko<sup>15</sup>, O. Mazurenko, I. Mantsurova<sup>16</sup> and others. At the same time, the issues of assessing the factors of influence and the conditions for the formation

<sup>2</sup> Human Development Report 2016: Human Development for Everyone (2016) .Published for the UNDP United Nations Development Programme. [http://hdr.undp.org/sites/default/files/2016\\_human\\_development\\_report.pdf](http://hdr.undp.org/sites/default/files/2016_human_development_report.pdf)

<sup>3</sup> Eastern Partnership. The European External Action Service (EEAS) [https://eeas.europa.eu/topics/eastern-partnership\\_en](https://eeas.europa.eu/topics/eastern-partnership_en)

<sup>4</sup> Horna Maryna. European neighbourhood policy: pensions in national accounts of EU and Ukraine / Maryna Horna // "Statistics of the XXI Century: New Challenges, New Opportunities". The fourth International scientific conference. Kyiv. – 2017.

<sup>5</sup> Sharpe, W., Gordon J. and Alexander, J. *Investments* (6th Edition), 2001.

<sup>6</sup> Blank, I. *Management of financial resources.*- Moscow: Omega-L, Elga. [In Russian].

<sup>7</sup> Duka, A. (2014). *The theory and practice of investment activity. Investment. Tutorial.* – Kyiv: Caravela. [In Ukrainian].

<sup>8</sup> Porter, M. E. *Competitive Strategy: Techniques for Analyzing Industries and Competitors.* — New York: The Free Press, 1980 (2nd ed. — New York: Free Press, 1998.

<sup>9</sup> Thompson, Jr., A. J. Strickland III, and Gamble, J. *Strategic management: concepts and cases* / Fred R. David.—13th ed. p.

<sup>10</sup> Yerina, A. *Economic statistics: textbook: Book 1. Macroeconomic statistics.* – Kyiv: KNEU, 2013. [In Ukrainian].

<sup>11</sup> Kovtun, N. *Statistical research of investment process and investment activity: theory, methodology, practice.* Kyiv, 2005. [In Ukrainian].

<sup>12</sup> Korepanov, G. *Statistical Estimation of the Investment Attractiveness of Regions of Ukraine.* Manuscript. National Academy of Statistics, Accounting and Audit, Kyiv, 2015. [In Ukrainian].

<sup>13</sup> Kulinich, R. (2007). *Statistical evaluation of social and economic development: Monograph.* – Kharkov.: Znannya. [In Ukrainian]

<sup>14</sup> Libanova, E. (2014). *Human development in Ukraine : the historical dimension of transformation of social policies,* Institute of Demography and Social Studies . National Academy of Sciences of Ukraine, Kyiv.

<sup>15</sup> Lukianenko, O. *International investment activity: textbook.* K.: KNEU, 2003. [In Ukrainian].

<sup>16</sup> Mantsurov, I. *Institutional planning in the system of state regulation of the economy.* – Kyiv: SREI, 2011. [In Ukrainian].

of investment attractiveness of the countries, as well as the use of statistical tools for analysing and agreeing quantitative and qualitative components of the model of investment attractiveness estimation of Ukraine and EU member states remain inadequate. Consequently, urgency of the research is conditioned by the need to identify the main factors of the formation of the investment attractiveness of Ukraine and the countries of Eastern Europe in order to successfully implement the European Neighbourhood Policy (ENP) programs.

The purpose of the article is to identify the main factors in the formation of investment attractiveness and to assess the factors affecting the investment attractiveness of Ukraine and the countries of Eastern Europe.

### ***Global investment development***

According to the United Nations Conference on Trade and Development (UNCTAD) in 2016, global foreign direct investment flows reduced by about 2% (or 1.75 trillion US dollars).<sup>17</sup> Investments in emerging countries decreased even more – by 14%. Despite the estimates of a modest recovery of foreign direct investment flows (hereinafter referred to as FDI) in 2017-2018, it is expected that they will remain well below its peak of 2007. (Fig.1).

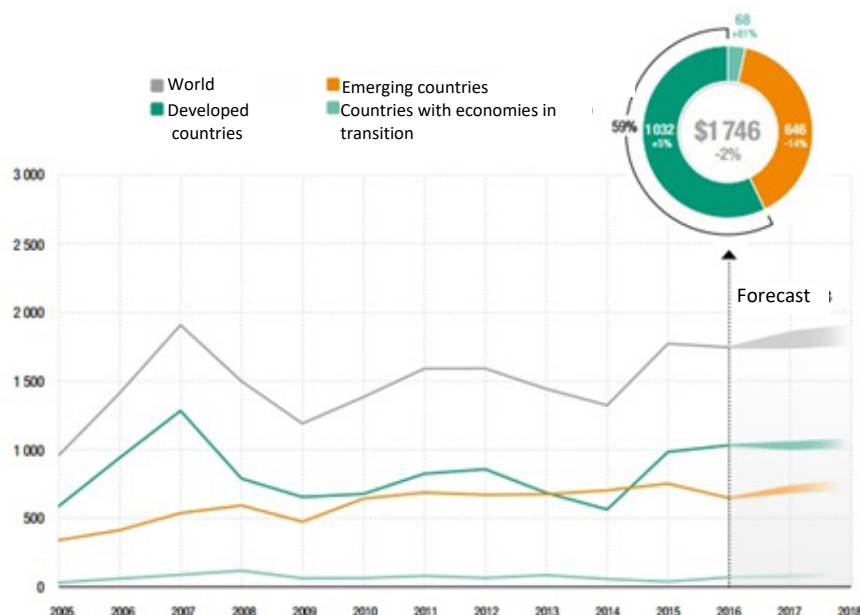
These events are complex, especially taking into account the large investment needs associated with sustainable development goal. Progress with regard to sustainable development requires significant investment in essential infrastructure, energy, water and sanitation, mitigation of climate change, health and education, and investment in industrial potential for job creation and income growth. The report UNCTAD World Investments Report 2017 states that today it is more than ever important to ensure that the global political environment fosters investment to address the challenges of sustainable development. The Roadmap for the reforming of international investment contracts has been used by more than 130 countries to develop a new generation investment policy. It is the volumes of inflow of investments (direct foreign, capital investment) that is the main criterion for determining the investment attractiveness of the country. Thus, according to the UNCTAD methodology, the ranking of investment attractiveness of the countries of the world is based on the following indexes:

✓ Inward FDI Performance Index – the performance of foreign direct investment;

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<sup>17</sup>World Investments Report 2017: Investment and the digital economy  
<http://www.worldinvestmentreport.org/world-investment-report-2017/>

- ✓ Inward FDI Potential Index – the potential of inflow of direct foreign investment;
- ✓ Outward FDI Performance Index – the performance of foreign direct investment abroad;
- ✓ FDI contribution index – index of contribution of direct foreign investments<sup>18</sup>.



**Fig.1.** Foreign Direct Investments, Global and by Types of Economy for the Period 2005-2016 and Estimates for 2017-2018, billion dollars and %

Source: UNCTAD, FDI / MNE database ([www.unctad.org/fdistatistics](http://www.unctad.org/fdistatistics))<sup>19</sup>

### *Investments in Ukraine*

In framework of implementation of the Eastern Partnership initiatives, Ukraine is interested in attracting as much investment as possible, in particular, foreign direct investment is an important source of financing for the economy. Almost all countries of the world are making efforts to increase the national investment attractiveness and

<sup>18</sup> World Investments Report 2017. Investment and the digital economy <http://www.worldinvestmentreport.org/world-investment-report-2017/>

<sup>19</sup> Ibid.

increase the volume of foreign investments towards the national economy<sup>20</sup>.

According to official statistics (Table 1), the volume of foreign direct investment in Ukraine over the past decade has increased by 16.1 billion US dollars or by 76.1%, while direct investments from Ukraine into the economies of the countries of the world increased by almost 29 times during the same period (by \$ 6.1 billion US dollars) . Thus, over the specified period the investments from Ukraine grew 16 times faster than in the Ukrainian economy.

**Table 1 Performance Indicators of Direct Investments (authorized capital) of Ukraine for the Period from 01/01/2007 to 01/01/2017<sup>21</sup>**

Direct investment (authorized capital)	As of 01.01.2017, million US dollars	As of 01.01.2017, million USA	Absolute increase, million USA	Growth rate, %
<i>A</i>	<i>1</i>	<i>2</i>	<i>3=1-2</i>	<i>4=(1/2)*100</i>
From the countries across the world to the economy of Ukraine	37,313.3	21,186.0	16,127.3	176.1
From Ukraine to economy of the countries across the world	6,346.3	221.5	6,124.8	2,865.2

<sup>1</sup> Excluding the temporary occupied territory of the Autonomous Republic of Crimea and the city of Sevastopol, also without part of the zone of anti-terrorist operation.

According to the information of State Statistics Service in 2016, the largest volumes of direct investment into the Ukrainian economy were sent to institutions and organizations that carry out financial and insurance activities of 10,324.4 million US dollars and industrial enterprises – 9,550.2 million US dollars. The main investment countries include Cyprus – 9,691.6 million US dollars, the Netherlands – 5,753.9 million US dollars, the Russian Federation – 4,449.8 million US dollars, the United Kingdom – 2,046.3 million US dollars, the Virgin

<sup>20</sup> Lukianenko, D., Burmaka, M. and Halakhova, T. Identification of creative investment in global economy. // *International Economic Policy*. 25 (2016): 7-20.; Bandurka, A. (2011). *Legal regulation of foreign investments in Ukraine: monograph* . – Kyiv: The Golden Mile. [In Russian]; Voytsekhovskaya, V. (2006) Foreign investment in the conditions of Ukraine's integration into the world economy // *Current Issues of Economics*. 8 (2006):55-60. [In Ukrainian].

<sup>21</sup> State Statistics Service of Ukraine: <http://www.ukrstat.gov.ua/>

Islands (Brit.) – 1,766.5 million US dollars, Germany – 1,606.6 million US dollars and Switzerland – 1,467.3 million US dollars.<sup>22</sup>

The largest share of direct investment (authorized capital) in 2016 from Ukraine also belongs to Cyprus – 93.5% to the volume of investment in the economies of the world (Table 2):

**Table 2 Direct Investment (authorized capital) from Ukraine to the Economy of the Countries of the World and Structural Changes for the Period from 01.01.2007 to 01.01.2017<sup>23</sup>**

Country	Volumes of direct investment as of 01.01.2017, million US dollars <sup>1</sup>	% to the volume of investment in the economy of the countries of the world	Volumes of direct investments as of 01.01.2007 million US dollars	% to the volume of investment in the economy of the countries of the world	Structural changes, v.c.
<b>All countries of the world, including</b>	<b>6 346,3</b>	<b>100,0</b>	<b>221,5</b>	<b>100,0</b>	<b>x</b>
<b>In EU countries</b>	6109,4	96,3	66,3	29,9	66,4
<i>of which Cyprus</i>	5,930,5	93,5	4,4	2,0	91,5
Russian Federation	144,1	2,3	93,2	42,1	-39,8

<sup>1</sup>Excluding the temporary occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol and part of the zone of anti-terrorist operation.

Note. The list of countries is determined based on the largest volume of investment made in the economy of other countries of the world.

### ***Integral estimates of investment attractiveness***

Investment attractiveness of a country is a generalizing characteristics of a certain country as an object of effective investment, which manifests itself in the ability to attract investment resources and is formed under the influence of a number of factors. Today there are many investment attractiveness evaluation methods, taking into account

<sup>22</sup> The state of investment activity in Ukraine // Ministry of Economic Development and Trade of Ukraine: <http://www.me.gov.ua/>

<sup>23</sup> State Statistics Service of Ukraine: <http://www.ukrstat.gov.ua/>

the factors affecting the investment environment of countries, and risks appraisal that impend investment attractiveness. Nominally investment attractiveness evaluation methods of the country can be divided into four main groups: upon investment receipt (direct foreign investment, capital investment); expert method; rating method based on various statistical data; rating method based on polled data.<sup>24</sup>

Under globalisation of the economic run-up, process acceleration of international integration and enhancement of interdependence of countries, the application of ratings as analytical tools becomes increasingly important in determining the comparative advantages of subjects of world economic relations<sup>25</sup>.

Since the properties of such a complex socio-economic phenomenon as the investment attractiveness of the countries is characterized by a variety of factors, it objectively arises the need to combine the factors into the one integral estimate. Integral estimates are determined for each country, and their value points to the position of the country in a multidimensional space. Such integral estimates (ratings) are used to assess the attractiveness of countries as well as regions in international and regional comparisons<sup>26</sup>.

The estimating of the investment attractiveness of the countries has been widely distributed internationally since the last century. The international rating database captures almost all aspects of global transformations<sup>27</sup>. Dozens of international institutions (the United Nations, the World Bank, The World Economic Forum, International Monetary Fund, etc.) and analytical companies (Fitch IBCA, Standard & Poor's, IMD World Competitiveness Yearbook, Moody's Investors Service, etc.) compile the ranking of the countries by special techniques, determine the position of each of them, depending on the valuation of investment climate and attractiveness. On the basis of official statistics, active studies are conducted on the investment attractiveness of certain regions in many countries of the world. Information about the state of national and regional investment objects is systematically monitored by economical publications<sup>28</sup>.

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<sup>24</sup> Lisa, O. (2017) Methods of assessing the investment attractiveness of the region. *XIII International Scientific Internet Conference "Socium. Science. Culture"*: <http://intkonf.org/lisa-oi-metodi-otsinyuvannya-investitsiynoyi-privablivosti-regionu/> [In Ukrainian].

<sup>25</sup> Yerina, A. (2016) International ratings: statistical aspects of calculation and application. Part II. Indices of innovation and human development // *Statistics of Ukraine*. 4(2016):66-75. [In Ukrainian].

<sup>26</sup> Yerina, A. *Statistics: textbook*. – Kyiv: KNEU, 2010. [In Ukrainian].

<sup>27</sup> Lukianenko, D., Burmaka, M. and Halakhova, T. Identification of creative investment in global economy. // *International Economic Policy*. 25 (2016): 7-20

<sup>28</sup> Korepanov, G. *Statistical Estimation of the Investment Attractiveness of Regions of Ukraine*. Manuscript. National Academy of Statistics, Accounting and Audit, Kyiv, 2015. [In Ukrainian].

### ***Factors and conditions of investment attractiveness formation***

Investment attractiveness of the country is formed under the influence of a variety of factors and the law of development of mass socio-economic phenomena and processes. Part of these factors can be described by means of statistical indicators that also characterize various aspects of socio-economic development of the country<sup>29</sup>. The countries of the European Union are quite heterogeneous population towards the geographical conditions as well as in terms of socio-economic development. In our opinion, it is useful to make a comparison of the factors of formation of investment attractiveness of Ukraine with the countries of Eastern Europe. This totality is sufficiently homogeneous on the basis of the investment attractiveness and selected factor characteristics, and the value of the variation factors allows to conduct further regression analysis.

Specific conditions of the development of the economies of Eastern European countries allow us to offer a variety of “packages” of investment conditions that can be used by a wide range of potential investors, since each investor is geared to certain characteristics of the countries that are definitive for it. And the geographical and socio-economic multiplicity of Eastern European countries creates a significant potential for the efficiency of realization of investment<sup>30</sup>. According to the UNCTAD methodology, improved and complemented since 2012, the following factors of investment attractiveness of territories (countries, regions) are determined: attractiveness of the market; price, quality and availability of labour power, necessary infrastructure, natural resources<sup>31</sup>.

Certainly, UNCTAD resolutions have the character of recommendations and a sample of global experience. The report UNCTAD World Investments Report 2017 (Fig. 2) states that direct foreign investment in Ukraine, the country, most affected by the conflict, is unlikely to be able to engage in the short run.

Despite the fact that such industries as agribusiness and information processing technology have good potential, the risk of investing in the country remains high. At the same time, it is emphasized that Ukraine has restored the privatization program in 2016, and within the framework of this program, the chemical and power industry can attract foreign investors<sup>32</sup>.

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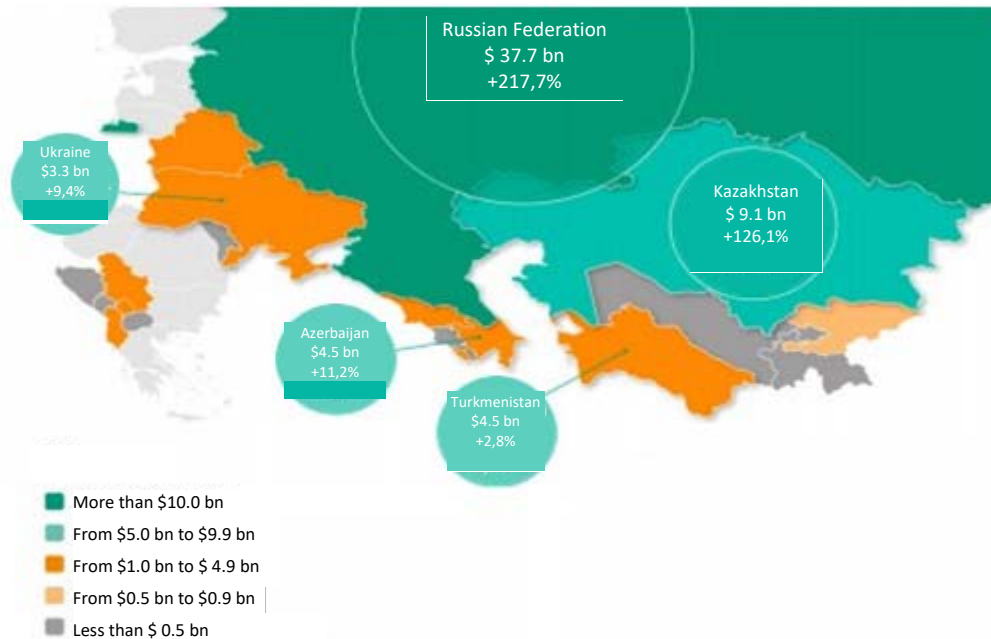
<sup>29</sup> *Horna M.* Statistical analysis of the social insurance fund of Ukraine / Maryna Horna // “Statistics of the XXI Century: New Challenges, New Opportunities”. The third International scientific conference. Kyiv. – 2015.

<sup>30</sup> Investment attractiveness of the regions. The Kyiv International Institute of Sociology and the Institute for Economic Research and Policy Consulting at the request of the State Agency for Investment and National Projects of Ukraine. – Kyiv, 2014. [In Ukrainian].

<sup>31</sup> World Investment Report 2012: Towards a New Generation of Investment Policies [http://unctad.org/en/PublicationsLibrary/wir2012\\_embargoed\\_en.pdf](http://unctad.org/en/PublicationsLibrary/wir2012_embargoed_en.pdf)

<sup>32</sup> Ibid.





**Fig. 2.** Foreign Direct Investment in Emerging Market Country in 2016 (billion dollars and rates of additions %) <sup>33</sup>

One of the most prominent international indicators of the investment climate is the International Business Compass Index, which is calculated by the international company BDO from 2012 in cooperation with the Hamburg Institute of the World Economy. BDO Business Compass appraises the investment attractiveness of the country, presenting information in three dimensions: economic factors, political and legal environment and sociocultural conditions. On the one hand, the attractiveness of a particular country regarding potential investment decisions is at the forefront, which clearly expresses the economic prospect. On the other hand, economic factors can only partly reflect the situation in the country, as political, legal, social and cultural aspects also play certain role and ultimately affect the country's position in the ranking. These three dimensions are correlated with each other and statistically completely independent. According to the statistical point of view, the attractiveness of the

<sup>33</sup> World Investments Report 2017. Investment and the digital economy <http://www.worldinvestmentreport.org/world-investment-report-2017/>

country is a variable level as a result of the interaction of a number of factors. The selected indicators can have either a positive or a negative effect on the country's position in the rating, and thus increase or decrease the investment attractiveness of the country. In the ranking of investment attractiveness of the countries of the world International Business Compass for 2016, Ukraine's place has decreased by 41 position in comparison with the previous period and Ukraine has occupied 130 place (in 2015 – 89). The deterioration occurred at all categories. Particularly prominent is the decrease with regard to economical indicators. Primarily, similar results are stipulated by the political crisis and events in the eastern part of the country. BDO analysts commented the rating downgrade: «Not surprisingly, the Ukraine represents the biggest loser in this year's ranking. This country has dropped 41 places compared to last year, due to a worsening in all categories. This is primarily a result of the political crisis and continuing civil war in the Eastern part of the country. For the economic indicators, the drop is observed to be especially significant»<sup>34</sup>.

In order to determine the factors and conditions of formation of investment attractiveness of Ukraine, the method of SWOT-analysis was used, based on the results of which it was identified the threats as well as advantages and improvement opportunity of the investment attractiveness of Ukraine (Table 3).

Identifying the strengths and weaknesses that affect the investment attractiveness of the country serves as an indicator of the need for measures implementation oriented to slope of enlightenment and creating wider opportunities for increasing the competitive advantages and investment attractiveness of the country<sup>35</sup>. *And the use of existing opportunities* will allow to realize the existing innovative and human potential and will become a prerequisite for the gradual strengthening of Ukraine's competitive positions and the adaptation of the national economics to global transformations<sup>36</sup>.

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<sup>34</sup> BDO International Business Compass 2016. The winners and losers 2016 <https://www.bdo-ibc.com/index/global-comparison/overall-index/>

<sup>35</sup> Karminsky, A. *Rivaling in Economics: Methodology and Practice*. – Moscow: Finance and Statistics, 2005. [In Russian].

<sup>36</sup> Investment climate of Ukraine. Ministry of Foreign Affairs of Ukraine. <http://mfa.gov.ua/en/about-ukraine/economic-cooperation/invest-climat>.

**Table 3 Results of SWOT-analysis of Factors and Conditions of Investment Attractiveness Formation in Ukraine<sup>37</sup>**

<i>Strengths</i>	<i>Weaknesses</i>
<ul style="list-style-type: none"> <li>✓ Ratification of the Association Agreement with the EU</li> <li>✓ Legislative changes and reforms</li> <li>✓ Investment and Economic Forums</li> <li>✓ Simplification of company registration procedures</li> <li>✓ Human capital</li> <li>✓ Geographical location</li> <li>✓ Natural resources</li> <li>✓ Conducting international business events, business conferences</li> <li>✓ Education system</li> <li>✓ The extent of the internal market</li> <li>✓ High potential of agribusiness, information technology, chemical and energy industries (in the estimation of international specialists)</li> </ul>	<ul style="list-style-type: none"> <li>✓ Low financial solvency of the population</li> <li>✓ A large portion of the shadow economy</li> <li>✓ Opacity of government and corruption</li> <li>✓ Deficit of the state budget</li> <li>✓ Complexity and duration of construction and landed property procedures</li> <li>✓ Institutional environment</li> <li>✓ Decisions in economic policy, ascribable by the tendencies towards populism and the desire to earn votes of voters</li> <li>✓ Macro economic uncertainty</li> <li>✓ Low efficiency of financial and product markets,</li> <li>✓ The quality of the national business climate</li> <li>✓ Low level of technological development</li> </ul>
<i>Opportunities</i>	<i>Threats</i>
<ul style="list-style-type: none"> <li>✓ Improvement and no breach of laws</li> <li>✓ Development of international relations</li> <li>✓ Transparency and equitableness of legal proceedings</li> <li>✓ Protection of property rights</li> <li>✓ Economic growth</li> <li>✓ Disinflation and decline in unemployment, decrease in shadow economy level</li> <li>✓ Deregulation</li> <li>✓ Stabilization of state finances,</li> <li>✓ Recovery of banking system,</li> <li>✓ Formation of a hospitable business environment</li> </ul>	<ul style="list-style-type: none"> <li>✓ Corruptness of society</li> <li>✓ Political instability</li> <li>✓ High levels of inflation and unemployment</li> <li>✓ Ageing of population</li> <li>✓ Slowdown in human development and military aggression threaten national security</li> <li>✓ Illegal takeover</li> <li>✓ The deterioration of the economic situation</li> <li>✓ Inhibited access to finance</li> </ul>

<sup>37</sup> Compiled by authors: Lukjanenko, D., Kolesov, V., Kolot, A. (2013). *The Global Economic Development: trends, asymmetries, regulation: monograph*. – Kyiv: KNEU, 466 p. [In Russian].; Ishchuk, Y. and Horna, M. (2016). The threats of food security of Ukraine in modern conditions // *Modeling and information systems in economics: Scientific and analytical journal* / – Kyiv, KNEU, 92 (2016):105-113. [In Ukrainian]; Convergence and Divergence in Europe: Polish and Ukrainian Cases Monograph / scientific editors Dmytro Lukianenko, Viktor Chuzhykov, Machal Gabriel Woznaniak. — Kiev: KNEU, 2013. — 687 p.; Regional Policy of the European Union [Electronic resource]: textbook / [ed. Viktor Chuzhykov]. – Kyiv: KNEU, 2016 – 495 p.; Mazurenko, O. and Horna, M. Methodological approaches to the formation of development strategy in the social services system// *Science Works Journal "Ekonomichnyy analiz"*. 19 (2015): 69-75. [In Ukrainian].; Ishchuk, Y. (2015). Statistical Assessment of Food Safety of Ukraine // *Scientific Bulletin of the National Academy of Statistics, Accounting and Audit*. Kyiv: 2 (2015):7-15. [In Ukrainian]. Ishchuk, Y. (2016). Statistical monitoring of sustainable development // *The system of state statistics in Ukraine: the current state, problems, perspectives: materials XIV International science-practice conf. on the occasion of the Day of Statistics*. – Kyiv: Inform.-analyte. agency, 2016: 69-72. [In Ukrainian].

***Regression model of the dependence of the country's investment attractiveness on economic, political, legal and sociocultural factors.***

The done SWOT-analysis made it possible to provide insight into the need to include any factor in a regression model. The logic of determining the factors of the regression model is also related to the BDO International Business Compass methodology for estimation the investment attractiveness of the countries of the world. The calculation of the index BDO International Business Compass takes into account the influence of economic, politico-legal and sociocultural factors. The regression equation also takes into account three factors and is written as:

$$Y = b_0 + b_1x_1 + b_2x_2 + b_3x_3, \quad (1)$$

where  $Y$  – investment attractiveness index BDO International Business Compass;

$b_0$  – absolute term of an equation;  $b_1, b_2, b_3$  – regression coefficients;

$x_1$  – Global Peace Index. Defines the security level, the degree of internal or international conflicts, and the degree of militarization;

$x_2$  – Corruption Perceptions Index (CPI), rating is compiled by Transparency International Company, an indicator reflects the level of corruption based on the assessments of entrepreneurs and analysts;

$x_3$  – Legatum Prosperity Index, an indicator from the British analytical organization The Legatum Institute, measures the prosperity of countries according to 9 parameters: economy, business, management, education, health, safety, individual freedom, social capital, ecology (table 4).

According to the results of the analysis, a regression model is constructed that has the form:

$$Y = 32,23 - 5,3x_1 + 0,15x_2 + 0,46x_3. \quad (2)$$

The comprehensive interpretation of the regression coefficients is the following:

✓ under otherwise equal conditions, the more war events, war dead and the percentage of refugees (which characterizes the Global Peace Index), the lower the value of the BDO investment attractiveness index – an average of 5.3 units of measurement;

✓ the higher the position of the country in the rating on Corruption Perceptions Index (0 – the maximum level of corruption, 100 – the lack of corruption), the higher the investment attractiveness for the subjects of investment;

✓ the value of the investment attractiveness index increases by a mean of 0.46 units of its own scale of measurement with a change in the Legatum Prosperity Index per unit of measurement with the invariance of other factors included in the regression model and under otherwise equal conditions.

**Table 4 Rating of the Countries of Eastern Europe of Index of Investment Attractiveness in 2016<sup>38</sup>**

The countries of Eastern Europe, the Baltic States and the Balkans	Index of investment attractiveness BDO International Business Compass <b>Y</b>	Global Peace Index <b>X1</b>	Corruption Perceptions Index, CPI <b>X2</b>	Legatum Prosperity Index <b>X3</b>
Czech Republic	66,85	1,360	55	68.34
Estonia	66.49	1.732	70	68.53
Slovenia	64.33	1.408	61	71.22
Poland	62.80	1.557	62	65.96
Lithuania	61.67	1.735	59	63.64
Latvia	61.59	1.680	57	65.02
Slovak Republic	61.54	1.603	51	65.10
Hungary	61.26	1.534	48	62.56
Romania	58.69	1.649	48	61.67
Bulgaria	56.96	1.646	41	60.23
Croatia	56.29	1.633	49	63.50
Kosovo	56.06	2.022	36	...
Albania	52.64	1.867	18	58.03
Macedonia	52.41	2.092	37	...
Serbia	52.24	1.834	42	58.61
Bosnia and Herzegovina	51.14	1.915	39	...
Moldova	50.31	1.953	30	54.72
Belarus	49.63	2.202	40	54.62
Ukraine	43.15	3.287	29	52.59

<sup>38</sup> Compiled by authors: BDO International Business Compass 2016. The winners and losers. <https://www.bdo-ibc.com/index/global-comparison/overall-index/>; The Global Peace Index 2016. Report. Institute for Economics and Peace. [http://economicsandpeace.org/wp-content/uploads/2016/06/GPI-2016-Report\\_2.pdf](http://economicsandpeace.org/wp-content/uploads/2016/06/GPI-2016-Report_2.pdf); Corruption Perceptions Index 2016 [https://www.transparency.org/news/feature/corruption\\_perceptions\\_index\\_2016](https://www.transparency.org/news/feature/corruption_perceptions_index_2016); The Legatum Prosperity Index 2016 <http://www.prosperity.com/>

The indicators of the standard regression analysis table (contains all the correlational relationship characteristics), calculated by the Excel environment in the Data Analysis package, indicate a significant and substantial connection between the reported characteristics. The factors included in the regression model explain 90.7% of the variation of the investment attractiveness index BDO International Business Compass. It was checked the significance of determination coefficient: for the investigated series, the actual value far exceeds the critical value:  $RI = 0,907 > R_{0,95}^2(2;15) = 0,232$ , which with probability 0,95 confirms the sufficiency of the equation to the real process. The value of t-statistics for all factors exceeds the critical value  $t_{0,95}(15) = 2,131$ , which, with a probability of 0.95, confirms the significance of the influence of these factors.

To compare the effect influences on each factor included in the model, standardized rates of regression are calculated – beta coefficients  $\beta_i$ . On the basis of the calculated  $\beta_i$  – coefficients, it may be concluded that among the impact factors on the investment attractiveness of the country, included in the model, the level of prosperity and human progress (0x1) are the most important ( $\beta_3 = 0,411$ ). The difference between the influence of other factors is insignificant: The next effect of influence is the level of perception of corruption ( $\beta_1 = -0,344$ ), and the last – the level of peace ( $\beta_2 = 0,298$ ).

Taking into account the conclusions of UNCTAD regarding the investment attractiveness of Ukraine, which was the most affected by the conflict, it is evidently that the continued aggressive policy of Russian Federation, the occupation of Crimea and military operations in the east of Ukraine has a significant impact on the national investment climate. However, from the viewpoint of the statistical aggregate of Eastern European countries, which do not have military conflicts, the impact of such events is insignificant, as among the impact factors on the investment attractiveness of the country included into the regression model the most important is the level of prosperity and human progress (economy, business, management, education, health, safety, personal liberty, social capital, ecology). Except the observance of national security, the investment attractiveness of the country depends on socio-economic processes, including economic growth, welfare of citizens, prosperity of human potential. Otherwise, the threat of overgrowing of social instability in the political crisis increases.

### *Imperatives of investment policy*

The UNCTAD formulates the primary objective of the investment policy of the country to ensure that investments serve the interests of sustainable development, maximizing its benefits and mitigating its negative effects. One of the major obstacles that militate against the improvement of the investment climate, experts call troubled property relations. A comparative analysis of property relations in Ukraine and developed countries in the world testifies that the institution of property in our country requires significant transformations: separation of ownership from the government, diversification of forms of ownership, formation of plural property rights, updating of the method and forms of conversion. Such transformations can create an effective framework for further socio-economic development in accordance with the logic of the modern civilization process, the real modernization of Ukrainian society<sup>39</sup>.

Despite the high potential of the Ukrainian agricultural sector, one of the reasons retarding the investment flows is the uncertainty of the land reform. According to many experts, the land reform in Ukraine has become imminent and it is worthwhile to activate it. In particular, Polish economist L. Balcerowicz<sup>40</sup> points out that the foreign debt and the effects of Russian aggression had significant impact on Ukraine economically. Such a combination of facts in any country would bring over a partial economic collapse. "However, important reforms have already begun in Ukraine, which are step by step improving this situation," said L. Balcerowicz. The expert noted that the land sales project is being prepared by experts from the World Bank and has positive feedback in the expert field. And in Europe, except Ukraine, only in Belarus the land sale is prohibited. Balcerowicz also notes that reforms in the areas of privatization and demonopolization are impetuses for the economic growth of Ukraine<sup>41</sup>.

According to experts from the Ukrainian office of the BDO network, in order to reverse the trend of deterioration of investment attractiveness of the country, thoroughgoing reforms are needed to ensure GDP growth of at least 10% annually. It is impossible without the unshadowing of the economy and the formation of a hospitable regulatory environment. This implies the pressing need for such measures:

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<sup>39</sup> World Investments Report 2017: Investment and the digital economy. UNCTAD, 2017. Режим доступу: <http://www.worldinvestmentreport.org/world-investment-report-2017/>

<sup>40</sup> Balcerowicz, Leszek. I was disappointed with the moratorium on land sales in Ukraine [http://zik.ua/news/2017/04/17/ya\\_buv\\_rozcharovanny\\_moratoriem\\_na\\_prodazh\\_zemli\\_v\\_ukraini\\_baltserovych\\_1\\_081091](http://zik.ua/news/2017/04/17/ya_buv_rozcharovanny_moratoriem_na_prodazh_zemli_v_ukraini_baltserovych_1_081091) [In Ukrainian].

<sup>41</sup> Ibid.

- real anticorruption efforts, loud criminal cases and further bringing to responsibility of high government officials and large shadow businessmen;
- clearing the judicial, law enforcement and tax systems by real and not decorative lustration;
- the formation of national market institutions needed to support exports, such as the Export Credit Agency and the Development Bank;
- the maximum possible deregulation and tax burden deduction for small and medium-sized businesses, the fraction of which should increase from the current 10-15% to a minimum of 50-60% within the nearest 10 years<sup>42</sup>.

### Conclusions

In the course of the done analysis of the factors and conditions of formation of the investment attractiveness of Ukraine, the method of SWOT-analysis was used, the results of which identified the threats as well as advantages and opportunities of improving the investment climate in Ukraine. The done analysis allowed to estimate the influence of key factors on the investment attractiveness of the country and to establish regularities. In particular, the construction of a relevant multivariate regression model of the dependence of the country's investment attractiveness upon economic, political and legal, sociocultural factors allowed to define the following conclusions:

✓ the increase in war events, war dead and the percentage of refugees (which characterizes the Global Peace Index), reduces the value of the BDO's investment attractiveness index – an average of 5.3 units of measurement;

✓ the higher the country is placed in the Corruption Perceptions Index ranking, the more attractive the investment prospects for investors are;

✓ among the factors included in the model of influence on the investment attractiveness of the country the most important is the level of prosperity and human progress. The difference between the influence of other factors is insignificant: Next to the treatment impact is the corruption perception level, and the last – the level of peace.

Taking into account the UNCTAD's estimation of the investment attractiveness of Ukraine, which has been most affected by the conflict, it is evidently that the continuation of military conflict continues to have a significant influence on the national investment climate. In addition to observance of the national security, the country's investment

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<sup>42</sup> BDO in Ukraine offers a rating of investment attractiveness of International Business Compass. <http://www.eba.com.ua/uk/press-and-media/news-from-members/item/34509-2016-7-11-1125> [In Ukrainian].



attractiveness depends on social and economic processes such as economic growth, welfare of citizens, and prosperity of human potential. Otherwise, the threat of overgrowing of social instability in the political crisis increases.

The results of the analysis determined the need for a comprehensive estimation of the state and trends of the investment climate in Ukraine, using statistical tools for analysing and agreeing quantitative and qualitative components of the model of investment attractiveness estimation of Ukraine and other EU member states. The data obtained during the analysis and the empirical analysis carried out may promote to further research for making informed decisions in order to improve the investment image of Ukraine and increase the volume of attraction of foreign investments and capital investments into the state economy.

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