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INVESTMENT ACTIVITY IN THE UKRAINE: NATIONAL AND REGIONAL DIMENSIONS

Abstract: The article investigates key aspects and issues of investment activity in Ukraine in national and regional dimensions. A detailed analysis is given for the dynamics of capital investments and foreign direct investments in the past decade. Main factors hindering the economic growth, as well as the influence of investment intensity upon the economy, are considered. An econometric analysis is conducted in order to understand the relation between investment activity and GDP growth in Ukraine. Based on results of the analysis a set of necessary measures is given, which are urgently needed in order to improve the economic situation in Ukraine and aid its growth.
Keywords: investment activity, capital investments, foreign direct investments, Cobb-Douglas production function, Ukraine.

Introduction

A necessary condition for a sustainable economic development and quality economic growth is an intense investment activity, which is reflected not only by an increase in the volumes of invested assets, but also through their sectorial specialization and efficient application in key economic areas. The development of investment potential and reduction of investment risks create favorable environment for improvement of economic competitiveness of Ukraine and its regions. This could ensure the quality changes in the structure of national economy, renewal of fixed assets, increase of technological level of production processes, improvement of working conditions and creation of new workplaces, development of necessary infrastructure and more.

Successful implementation of market reforms, assurance of sustainable economic growth and reduction of regional disparities in social and economic development of Ukraine depend to a great extent on the way in which the increase of investment attractiveness of the country as a whole and its regions in particular

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should be influenced. Therefore the purpose of this article is to study the regional aspects of investment activity in Ukraine in the context of current economic reforms, especially in terms of its role in the restructuring of regional economy, ensuring the quality of economic growth and implementation of innovative investment model of the national economy.

Materials and research methods

In order to understand current peculiarities of investment processes in Ukraine the data provided by the State Statistics Service of Ukraine and State Agency for Investment and National Projects of Ukraine was used (concerning capital investments, foreign direct investments and GDP).

The analysis of the relations between the growth of GDP and investment processes were based on Cobb-Douglas production function. In order to receive reliable results four hypotheses have been introduced, which are elaborated later in the text.

Investment issues in the Ukrainian economic development

The intensification of domestic and foreign investments is an important prerequisite for the gradual recovery Ukrainian economy, which could be accelerated through creation of a favorable investment climate providing proper legal guarantees for all investors and clear working environment for business development.

Yet current economic and political situation in the country complicates any investment activities and negatively affects possible attraction of either foreign or domestic investors. The investment process in Ukraine is characterized by a lack of stability and significant dependence of capital investments upon various endogenous and exogenous factors, which, unlike in stable market economies, is

quite unpredictable. These thoughts are supported by numerous Ukrainian researchers[1,2,3].

The direct foreign investment is one of the indicators of the integration level into the world economy. Investment attractiveness is determined by the overall investment climate in the country, the conditions for conduction of exports and imports (including legal requirements, trade and customs rules). Direct foreign investment has the power to intensify the growth of a national economy, aid in the implementation of modern technologies, bring industrial machinery and equipment, and raise employment level, stimulating national and regional economic competitiveness.

The years before the crisis of 2008 promised permanent growth of Ukrainian economy. The 1990s were fluctuating due to transformation of economy, the decline of an old system and slow formation of a new one. Starting the year 2003 a steady growing trend of foreign direct investments in Ukraine was observed. The highest growth of this indicator occurred in 2006 (186,7% compared to the previous year) and in 2007 (149,5% to previous year). Yet the year 2008 has broken the positive development trends[4].

In the 2014 Ukraine ranked 42 out of 196 countries according to the level of attracted direct foreign investments[5], yet at that year they were 17% lower than in 2013, and then in the 2015, the share of direct investments from foreign companies farther decreased by 24,4% (compared to 2014). Meanwhile, in the index of investment attractiveness (the International Business Compass), designed by the international consulting network BDO[6] in 2015, Ukraine ranked

[1] О. Щербань, *Визначення інвестиційної активності українських підприємств*, Науковий журнал "Зовнішня торгівля: економіка, фінанси, право", 2(73), http://zt.knteu.kiev.ua/files/2014/2(73)/uazt_2014_2_26.pdf 2014 (accessed: October 17, 2016).

[2] О. Булик, *Проблеми залучення іноземних інвестицій в економіку України*, Глобальні та національні проблеми економіки, Миколаївський національний університет імені В. О. Сухомлинського, http://global-national.in.ua/archive/6-2015/13.pdf 2015 (accessed: October 10, 2016).

[3] К. Звягіна, *Проблеми іноземного інвестування в Україні*, Вісник НТУУ „КПІ" Політологія, Соціологія, Право, №1(17), http://visnyk-psp.kpi.ua/article/view/37052/33327 2013 (accessed: October 17, 2016).

[4] State Statistics Service of Ukraine, *Operational statistical information*, http://www.ukrstat.gov.ua 2016 (accessed: April 4, 2016).

[5] World development indicators, *Foreign direct investment*, http://gtmarket.ru/research/foreign-direct-investment-index/info 2016 (accessed: March 22, 2016).

[6] BBC Ukraine, *Україна піднялася в рейтингу інвестиційної привабливості*, http://www.bbc.com/ukrainian/business/2015/06/150605_investattaractivness_ukraine_az 2015 (accessed: March 17, 2016).

89th out of 174 countries and improved its rate by 20 positions compared to the previous year (109th rank in 2014).

Despite the improving positions in the international rankings and optimistic Ukrainian government's forecasts, the investment climate in Ukraine remains unfavorable. The reasons for the decline of investment activity in Ukraine starting 2008 were the high financial and political risks, high inflation, unstable and imperfect legislation concerning investment and economic activities, lack of coherent state economic strategy and ignoring the need for institutional transformations by the government, high level of corruption in state institutions and so on. Studying the scientific articles and opinions of the business entities it can be noted that the Ukrainian government uses double standards in relation to foreign companies[7]. Official policy aims at attraction of foreign direct investments, but in practice, foreign companies have to go through numerous difficulties trying to invest in the Ukrainian economy. Ukrainian legislation isn't considered a stable and predictable one and the business is faced with a multitude of artificially created and upheld bureaucratic obstacles. Additionally, a stereotype is being spread throughout some of the media that the main objective of foreign companies is to exploit Ukrainian economy, use the existing resources and leave the country without its industrial potential in the future.

All of this allows the conclusion that the unfavorable investment climate in the Ukraine is mainly caused by the influence of endogenous risks, and not exogenous. Moreover, such barriers for investment activity as corruption, lack of effective reforms of the judiciary system, disputes over property rights and investor protection, excessive tax burden – are all typical issues for Ukraine[8], and are persistently discussed, but not being resolved. These issues are particularly sensitive for foreign investors, which causes their share in the business financing sources to be consistently low for years. Such obstacles do not make it possible for businesses in Ukraine to attract adequate volume of investments to expand their operations, modernize fixed assets and implement new technologies.

For an objective estimation of the investment activity in the Ukraine it is necessary to examine the connections and dependencies between the attracted investments and indicators revealing the economic development. The aggregated indicator that reflects the condition of an economy is gross domestic product (GDP). The larger the investments in the current year, the greater the potential volume of GDP in the future. And today, more than ever, businesses and the

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[7] I. Сазонець, *Посилення ролі ТНК: позитивні та негативні наслідки*, Вісник Дніпропетровського національного університету, 2009, 122-127.

[8] С. Ткач, *Ключові ризики та можливості для інвесторів України з країн Європейського Союзу в умовах зони вільної торгівлі*, http://ird.gov.ua/irdp/e201506 05.pdf, 2015 (accessed: April 9, 2016).

country need a quick recuperation rate of investments in order to hasten the end of the economic crisis. This idea is proven by the data analysis, which shows that the dynamics of GDP growth were close to synchronous with the dynamics of capital investment growth in Ukraine during the years 2002-2014 (Fig. 1).
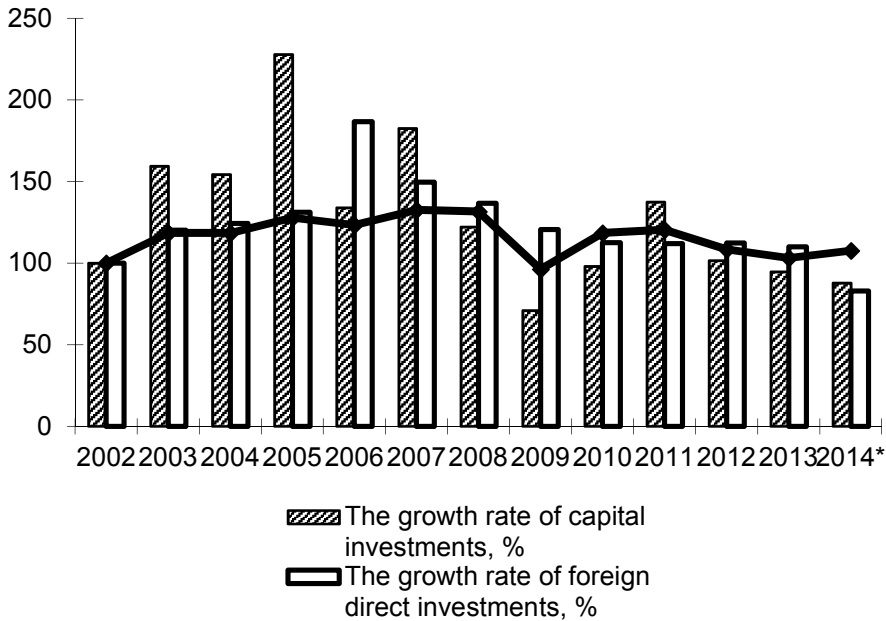

Figure 1. Dynamics of the growth rates of capital investments, foreign direct investments and GDP in Ukraine during 2002-2014*
*excluding the temporarily occupied territory of the Autonomous Republic of Crimea, and the area of the ongoing antiterrorist operation (parts of Donetska and Luhanska oblasts)
Source: Calculated based on data of State Statistics Service of Ukraine.

Analysis of investment activity on the national level

The analysis of indicators characterizing the investment processes and economic development in Ukraine allows to conclude that the investment dynamics have the same trend as GDP and are directly related to the general economic processes in the country; the rate of investment increase (or decrease) are on average higher than the same rate of GDP; and more investments lead to faster renewal processes and stimulate the economy.

For the mathematical description of the multiplicative relation between the GDP and the investments the Cobb-Douglas production function can be applied, since it objectively reflects the development of socio-economic systems, without the direct influence of the subjective factor, thus the pure nature of the development processes is revealed[9].

In order to understand the existing forms of regressive relation four hypotheses were used. Assumption is made that the production regression is continuous and is differentiated twice.

It is also assumed that the GDP of Ukraine (Y) depends on two factors: capital investments (X_1) and foreign direct investments (X_2):

$$Y = F(X_1, X_2) \tag{1}$$

Hypothesis 1. If one of the factors (either X_1 or X_2) increases, while the other factor is constant, the GDP increases (and vice versa).

Change of the GDP due to a change of one of the factors (X_1, X_2) is mathematically expressed as partial to this factor, as follows:

$$\frac{\partial F}{\partial X_1} \rangle 0; \frac{\partial F}{\partial X_2} \rangle 0. \tag{2}$$

Hypothesis 2. GDP grows at a slower rate than the costs of each of the factors. In other words, an increase of utilized factors by one unit causes an increase of GDP by less than one unit.

Hypothesis 3. The production function $f(X_1, X_2)$ is homogenous function relatively to factors X_1 and X_2, with an *a* being the index of homogeneity. This means that with simultaneous increase of factors by λ times (λ being a constant number), the GDP will increase by λ^a times:

$$f(\lambda X_1, \lambda X_2) = \lambda^a f(X_1, X_2,). \tag{3}$$

Hypothesis 4. In the trend of a constant GDP, the elasticity of investments is a constant positive value.

Based on these hypotheses the following equation of the Cobb-Douglas production regression is obtained:

$$Y = a_0 X_1^{a1} X_2^{a2} \tag{4}$$

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[9] Г. Клейнер, *Производственные функции: теория, методы, применение*, Финансы и статистика, Москва, 1986.

Afterwards the parameters of the Cobb-Douglas production function are calculated in order to solve our problem of GDP's growth forecasting.

Graphically the production regression can be represented as a surface in a three-dimensional space with coordinates X_1, X_2, Y.

In order to estimate the parameters of the regression line we create a logarithm and perform a replacement of values as follows:

$$\ln Y = \ln a_0 + a_1 \ln X_1 + a_2 \ln X_2, \tag{5}$$
$$a_{01} = \ln a_0,\ Y_1 = \ln Y,\ Z_1 = \ln X_1,\ Z_2 = \ln X_2.$$

After these changes a linear model is obtained:

$$Y_1 = a_{01} + a_1 Z_1 + a_2 Z_2. \tag{6}$$

It should be convenient to use Excel spreadsheets to calculate the coefficients a_{01}, a_1, and a_2, and so the estimation of parameters of regression trends are presented in the Table 1.

Table 1. The calculations for estimation of the regression trend parameters

Years	Y	X_1	X_2	$Y_1=\ln(Y)$	$Z_1=\ln(X1)$	$Z_2=\ln(X2)$	Y_1r	Y_1min	Y_1max
2002	225 810	19 838,9	2 4136,3	12,33	9,90	10,09	12,33	12,10	12,55
2003	267 344	31 625,2	29 177,8	12,50	10,36	10,28	12,50	12,28	12,73
2004	345 113	48 792,9	36 224,3	12,75	10,80	10,50	12,69	12,47	12,91
2005	441 452	111 174,1	47 998	13,00	11,62	10,78	12,98	12,76	13,20
2006	544 153	148 972,3	85 294,5	13,21	11,91	11,35	13,31	13,09	13,53
2007	720 731	222 678,9	109 116,9	13,49	12,31	11,60	13,50	13,28	13,72
2008	948 056	272 074,1	149 190,6	13,76	12,51	11,91	13,69	13,47	13,91
2009	913 345	192 878	274 246,3	13,72	12,17	12,52	13,90	13,68	14,13
2010	1 082 569	189 060,6	319 823,2	13,89	12,15	12,68	13,97	13,75	14,19
2011	1 302 079	259 932,3	356 731,9	14,08	12,47	12,78	14,09	13,86	14,31
2012	1 411 238	263 727,7	402 157,8	14,16	12,48	12,90	14,14	13,92	14,36
2013	1 454 931	249 873,4	441 987,3	14,19	12,43	13,00	14,18	13,96	14,40
2014	1 566 728	219 419,9	367 006,6	14,26	12,30	12,81	14,07	13,84	14,29
Total	11 223 549	22 30 048,3	2 643 091,5	175,3445	153,408	153,215	175,345		

Source: Own authors' estimation based on the statistical data of State Statistics Service of Ukraine.

After the necessary calculations in Excel we obtain:

$$a_1 = 0{,}194,\ a_2 = 0{,}468,\ a_0 = 293{,}18. \tag{7}$$

The production function is:

$$Y = 293{,}18\ X_1^{0,194} X_2^{0,468}. \tag{8}$$

The obtained factual and forecasted results, as well as the confidence intervals are given in the Table 2.

Table 2. Factual and forecasted values and confidence intervals

Years	Parameters					
	Y	X_1	X_2	$Yr=\exp(Y_1 r)$	Ymin	Ymax
2002	225 810	19 838,9	24 136,3	225 276,9	180 615,7	280 981,5
2003	267 344	31 625,2	29 177,8	269 545,0	216 107,6	336 195,8
2004	345 113	48 792,9	36 224,3	324 485,4	260 156,1	404 721,5
2005	441 452	111 174,1	47 998	434 422,7	348 298,4	541 843,2
2006	544 153	148 972,3	85 294,5	601 752,1	482 454,7	750 548,4
2007	720 731	222 678,9	109 116,9	730 128,0	585 380,0	910 668,0
2008	948 056	272 074,1	149 190,6	878 735,9	704 526,4	1 096 022,5
2009	913 345	192 878	274 246,3	1 092 615,4	876 004,3	1 362 788,4
2010	1 082 569	189 060,6	319 823,2	1 169 520,9	937 663,3	1 458 710,4
2011	1 302 079	259 932,3	356 731,9	1 309 423,0	1 049 829,8	1 633 206,3
2012	1 411 238	263 727,7	402 157,8	1 388 836,0	1 113 499,1	1 732 256,0
2013	1 454 931	249 873,4	441 987,3	1 436 402,0	1 151 635,1	1 791 583,6
2014	1 566 728	219 419,9	367 006,6	1 283 919,7	1 029 382,5	1 601 396,8
2015 (forecast)		194 424,2	348 286,1	1 223 737,9	981 131,7	1 526 333,7
2016 (forecast)		154 825,5	264 823,8	1 029 924,5	825 741,8	1 284 595,7

Source: Own authors' estimation based on the statistical data of State Statistics Service of Ukraine.

For multifactor regression the partial elasticity coefficient shows the percentage change if one of the factor changes by one percent at constant values of the other factors. If the regression line has the form of $Y = f(X_1, X_2...X_m)$, the partial elasticity coefficient for factor X_i is calculated with the help of the following formula:

$$k_{x_i} = \frac{\partial f}{\partial X_i} \cdot \frac{X_i}{f}, \text{ (i=1, m).} \tag{9}$$

Then the partial elasticity coefficients for the Cobb-Douglas production regression is found $Y = a_0 X_1^{a1} X_2^{a2}$.

$$k_{x_1} = \frac{\partial f}{\partial X_i} \cdot \frac{X_i}{f} = \frac{\partial (a_0 X_1^{a_1} X_2^{a_2})}{\partial X_1} \cdot \frac{X_1}{a_0 X_1^{a_1} X_2^{a_2}} = \frac{a_0 a_1 X_1^{a_1 - 1} X_2^{a_2} X_1}{a_0 X_1^{a_1} X_2^{a_2}} = a_1 \tag{10}$$

Thus, the parameter a_1 is a partial elasticity coefficient of factor X_1 for the Cobb-Douglas production regression, which shows that the GDP changes by 0,194%, if the capital investment factor changes by 1% at constant values of the factor (foreign direct investments). As the elasticity coefficient is positive, the

increase (or decrease) of the factor causes, accordingly, the increase (or decrease) of the indicator.

Similarly, we find that a partial elasticity coefficient for the second factor equals the second parameter ($kx_2 = a_2$), therefore it shows that the change of foreign direct investments by 1% causes the change in GDP by 0,468% (with the constant values of the capital investment factor).

Let us consider the hypothesis 3 of homogeneity of production regression from an economic point of view. Increasing the volume of factors by any constant number λ, it will be possible to track the response to changes in GDP according to the changes in factors.

It is assumed that at a particular time the factors and indicators have values of x_{10}, x_{20}, y_0, therefore $Y_0 = a_0 X_{10}^{a1} X_{20}^{a2}$.

After increasing the factors by λ times:

$$Y = a_0 X_1^{a1} X_2^{a2} = a_0 (\lambda X_{10})^{a1} (\lambda X_{20})^{a2} = \lambda^{a1+a2} a_0 X_{10}^{a1} X_{20}^{a2} = \lambda^{a1+a2} Y_0. \tag{11}$$

In this case, the homogeneity index is equal to the total value of the partial elasticity coefficients:

$$a = a_1 + a_2. \tag{12}$$

This homogeneity indicator is called a general (total) coefficient of elasticity. Since the total value of the elasticity coefficient is less than 1, the increase in investments by λ (any constant number larger than 1) causes the GDP to increase by the number of times less than the λ, meaning λ^{a1+a2}, where $a_1 + a_2 < 1$.

For better understanding of the production regression a demonstration of an isoquant regression based on the constant GDP of 2002 is possible (Fig. 2).
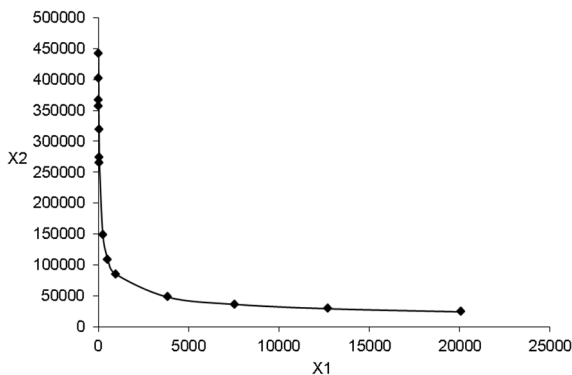

Figure 2. The isoquant

In order to build an isoquant, it is necessary to express one of the factors of production regression through another factor and a constant value of regression:

$$X_1 = \frac{Y_0^{1/a_1}}{a_0^{1/a_1} X_2^{a_2/a_1}} \qquad (13)$$

Similarly, it is possible to analyze a set of factors combination, which corresponds to another constant GDP value. It will be a different isoquant.

The final stage of forecasting is the verification, which is the procedure of estimation of reliability, accuracy and validity.

For evaluation of our econometric model the calculated value of Fisher criterion was compared with the tabulated value.

For a reliable probability of p=0,95 (with a significance level of a=1-p=0,05) and the number of random degrees $k_1=m=2$, $k_2=n–m-1=10$ the tabulated value of F (a, k_1, k_2) is:

$$\text{Ftab } (0,05;2;10) = 4,1. \qquad (14)$$

The calculated result of Fcal = 268,83 can be compared with the tabulated value. As Fcal > Ftab, taking into consideration the level of reliability being 0,95, we can assume that the econometric model is adequate with the basic data.

As a result of conducted factor analysis of GDP, capital investments and foreign direct investments, we have obtained the following results:

1. the GDP elasticity for capital investments during the period of 2002-2014 equaled 0,194. This means that with the increase of capital investments by 1% (all other factors being constant), the GDP could increase by 0,194%. Accordingly, with reduction of investments by 1% (all other factors being constant), we would observe a GDP reduction by 0,194%;

2. the elasticity of GDP for foreign direct investments during the 2002-2014 was 0,468. This means that with the foreign direct investments increase by 1% (all other factors being constant), the GDP could increase by 0,468%. Accordingly, with FDI decreasing by 1% (all other factors being constant), we would observe a GDP reduction by 0,468%;

3. simultaneous decrease of both factors by 1% would have caused the decline in GDP by 0,662%;

4. the examined econometric model of the Cobb-Douglas production function is adequate to basic data, as the calculated value of Fisher criterion with a probability level of 0,95 is significantly higher than the tabular value;

5. the forecasted values of GDP, obtained by trend models, in 2015 could be 1 604 923 million UAH, in 2016 – 1 615 437 million UAH, and with the application of Cobb-Douglas production function, which takes into account the impact of investment resources, it could equal 1 223 737,9 million UAH in 2015 and 1 029 924,5 million UAH in 2016.

Regional aspects of investment activity

The efficiency of the investment process in the nation depends on the economic development of regions and the level of their convergence. The persistent economic crisis in Ukraine has embraced all aspects of life and led to the deterioration of the socio-economic development and deepening of regional disparities. The process of economic renewal and growth are determined by the size and the structure of investments. Due to the inflow of additional capital into a region it is possible to ensure economic growth through the introduction of new technologies, renewal of the assets, forming of the optimal structural proportions in the regional economy and, as a result, ensure proper functioning of economic entities, increase the competitiveness of regional production and services. As Ukrainian researcher, dealing with the regional aspects of investment processes, states[10] "there's an acute need for the development of systemic state investment policy in Ukraine, which should focus, among others, on introduction of regional programs for attraction of private domestic and foreign investments, based on particular regional peculiarities and needs, as well as current regional experience in investment activity".

Recovery of investment activity in the post-crisis period began with a significant lag comparing with the economic growth dynamics. According to the State Statistics Service of Ukraine[11], only in the year 2011 it was possible to end the persistent decline of capital investing and see its growth at a 37,5% rate compared to 2010. However, in the 2013, the national downward trend in the capital investing renewed with the drop by 5,3% (compared to year 2012). Yet the growth of capital investing was observed in 6 regions (or an oblast – an administrative-territorial unit of Ukraine): Vynnytska, Zhytomyrska, Luhanska, Mykolayivska and Chernihivska oblasts, cities of Kyiv and Sevastopol. In the year 2014 the volume of capital investments continued to decrease by the rate of 12,2% compared to the previous year and the growth was observed only in

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[10] O. Шевченко, *Інвестиційна активність регіонів України: вплив на економічне зростання*, Стратегічні пріоритети, №1(10), http://www.nbuv.gov.ua/ old_jrn/soc_gum/sp/2009_1/22.pdf, 2009 (accessed: October 15, 2016).
[11] State Statistics Service of Ukraine, *Operational statistical information*, http://www.ukrstat.gov.ua, 2016 (accessed: April 4, 2016).

5 regions: Zakarpatska, Zaporizka, Ivano-Frankivska, Sumska and Khmelnytska oblasts. In the year 2015 the decrease compared to the previous year equaled 26,8%, so the downward tendency has been intensifying. During the year 2015 the volumes of capital investments increased only in Volynska and Khmelnytska regions. In the Donetska and Luganska oblasts during the years 2013-2015, due to ongoing military conflict and destabilization of the political and socio-economic conditions, the capital investments declined by 83,7% and 89,7% respectively. If the situation does not stabilize in the nearest future and the military activity will not discontinue in these regions, a farther drastic decline of investments is forecasted[12]. Both domestic and foreign investors over there are expected to freeze their current investment projects, and may be withdrawing their investments in order to salvage at least parts of their assets.

In general, the distribution of capital investments by regions of the country remains highly differentiated. Investments are mainly concentrated in those regions, where there is a high probability of fast recoupment. These are the regions characterized by either dense concentration of various (primarily heavy) industries or the availability of recreational potential (such as the city of Kyiv and Dnipropetrovska, Donetska, Lvivska, Kharkivska, Odeska, Zaporizka regions). Regional distribution of investments shows that these regions in the 2014 accounted for 70,0% of the nationwide total. In the 2015 this figure slightly decreased and amounted 68,6%. A drastic decline of investments during this time was observed in Donetska and Luganska regions, what's important to note though is that these two regions were all the way until the beginning of military activity ones of the most industrious and constantly attracting high volumes of investments. There are, at the same time, regions that consistently attracted the least amount of capital investments, all throughout the independence years of Ukraine. These are the Chernivetska, Chernihivska, Ternopilska, Rivnenska and Khersonska oblasts.

Region-wise, the largest foreign direct investments in 2014 were recorded in the city of Kyiv – 49,5% and the following oblasts: Dnipropetrovska (16,9%), Donetska (5,6%), Kharkivska (3,8%), Kyivska (3,6%), Odeska (3,1%), Lvivska (3,0%), Poltavska (2,2%) and Ivano-Frankivska (2,0%). These regions accounted for 89,7% of all foreign direct investments in the nation and these are the regions that currently are the most economically developed, and therefore – most attractive to foreign investors. The lowest investment rates were observed in

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[12] *State Agency for Investment and National Projects of Ukraine*, http://www.ukrproject.gov.ua, 2016 (accessed: March 17, 2016).

Ternopilska (0,12%), Chernivetska (0,15%), Kirovohradska (0,18%) and Chernihivska (0,22%) oblasts[13].

Thus, foreign direct investments serve the economically developed regions of Ukraine, leaving aside the less developed regions. Such situation with the foreign direct investments in the regional context is not supporting an equitable social and economic development and deepens further regional disparities. In order to solve these problems it is necessary to create effective state investment policy to increase the investment attractiveness of Ukrainian regions.

Conclusions and recommendations

The analysis has proven that a prerequisite for sustainable economic development of Ukraine and its regions, as well as for ensuring of the quality economic growth in the country, is an intense investment activity, which could be achieved not only by an increase of volumes of attracted investments, but also by their efficient allocation in particular economic sectors. In order to improve the national and regional investment climate and investing efficiency, the following should be implemented:

- increase the efficiency of regional management through the application of advanced management approaches;
- coordinate the activities of local self-governments, enterprises, institutions and organizations in the regions to enhance complex economic development and ensure the dissemination of information concerning the regional investment climate and image;
- intensify the implementation of public-private partnership programs, expand the circle of participants (attract organizations and businesses from foreign, primarily EU, countries);
- provide quality extension services and organizational support to business entities in order to improve the efficiency of their participation in international and national development programs and grants;
- inform foreign investors on the possibilities of investing in attractive regional industries and promote national investors to intensify their activity on the European market using the opportunities created by the DCFTA between the EU and Ukraine;
- support the development of investment infrastructure, creation and development of innovative industrial centers and hubs;

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[13] State Statistics Service of Ukraine, *Operational statistical information*, http://www.ukrstat.gov.ua, 2016 (accessed: April 4, 2016).

- promote cooperation between education institutions and investors in terms of staff training;
- assess the risks of regional investment activity and determine the ratings of regions in terms of existing risk levels and investment attractiveness;
- monitor the investment projects that were successful (and unsuccessful) in the particular region in order to prevent or minimize risks for future investors.

These measures should stimulate investment intensification in Ukraine and its regions and aid in attraction of necessary investments in order to overcome the effects of economic and political crisis, as well as to set a path for sustainable economic growth in future.

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DZIAŁALNOŚĆ INWESTYCYJNA W UKRAINIE: KRAJOWY I REGIONALNE WYMIARY

W artykule zbadane są kluczowe aspekty i zagadnienia działalności inwestycyjnej w Ukrainie w wymiarze krajowym i regionalnym. Wykonana jest szczegółowa analiza dynamiki inwestycji kapitałowych oraz bezpośrednich inwestycji zagranicznych w ciągu ostatniej dekady. Rozpatrzone są główne czynniki hamujące wzrost gospodarczy, jak również wpływ intensywności inwestycji na gospodarkę. Przeprowadzona została analiza ekonometryczna celem wyjaśnienia relacji pomiędzy aktywnością inwestycyjną oraz wzrostem PKB w Ukrainie. Na podstawie wyników analizy został zaproponowany zestaw niezbędnych działań, wprowadzenie których jest potrzebne w celu poprawy sytuacji gospodarczej w Ukrainie i wsparcia dalszego rozwoju.

Słowa kluczowe: działalność inwestycyjna, inwestycje kapitalne, bezpośrednie inwestycje zagraniczne, funkcja produkcji Cobba-Douglasa, Ukraina.