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ANALYSIS OF INVESTMENT ATTRACTIVENESS OF DNIPROPETROVSK REGION

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АНАЛІЗ ІНВЕСТИЦІЙНОЇ ПРИВАБЛИВОСТІ ДНІПРОПЕТРОВСЬКОЇ ОБЛАСТІ

The article considers the issues of analysis of factors of formation of investment attractiveness of a separate region on the example of Dnipropetrovsk region. Approaches to determining the category of "investment attractiveness of the region" are studied. Methods for assessing the investment attractiveness of the region are described. The results of dynamic analysis and assessment of investment attractiveness of Dnipropetrovsk region, which were obtained using rating methods, are presented. According to the Methodology for Assessing the

Investment Attractiveness of Regions, developed by the Kyiv International Institute of Sociology, the Dnipropetrovsk region ranks fifth in the national ranking according to the general index of investment attractiveness. A significant advantage of Dnipropetrovsk region is the "hard" factors, namely the geographical location of the region and available natural resources. According to the group of "soft" factors, Dnipropetrovsk region ranks only fourteenth. The results of the rating assessment of investment efficiency of Dnipropetrovsk region, obtained using the Methodology for calculating the rating of investment attractiveness of the city (region), developed by the agency "Euro-Rating" are summarized. According to the results of the monitoring of socio-economic development of the regions carried out by the Ministry of Development of Communities and Territories of Ukraine, Dnipropetrovsk region consistently ranks high in the field of "Investment and Innovation Development and Foreign Economic Cooperation". It is concluded that although the rating methods and monitoring of socio-economic development of the regions of Ukraine are based on a different system of indicators, but they allow us to draw almost identical conclusions about the investment attractiveness of Dnipropetrovsk region. The factors of formation of the level of investment attractiveness of Dnipropetrovsk region are generalized. It is emphasized that the investment attractiveness of Dnipropetrovsk region is negatively affected by such factors as almost critical depreciation of fixed assets, low-capacity utilization and unfavorable environmental situation in many respects. The Dnipropetrovsk region also has unsatisfactory positions in the areas of "Availability and quality of services in the field of education" (21st place) and "Availability and quality of services in the field of health care" (18th place).

У статті розглянуто питання аналізу факторів формування інвестиційної привабливості окремого регіону на прикладі Дніпропетровської області. Досліджено підходи до визначення категорії «інвестиційна привабливість регіону». Охарактеризовано методи оцінки

інвестиційної привабливості регіону. Наведено результати динамічного аналізу та оцінки інвестиційної привабливості Дніпропетровської області, які отримані із використанням рейтингових методик. Відповідно до Методики оцінки інвестиційної привабливості регіонів, яка розроблена Київським міжнародним інститутом соціології, за загальним індексом інвестиційної привабливості Дніпропетровська область займає п'яте місце у національному рейтингу. Суттєвою перевагою Дніпропетровської області є «жорсткі» фактори, а саме географічне розташування області та наявні природні ресурси. За групою «м'яких» факторів Дніпропетровська область займає лише чотирнадцяте місце. Узагальнено результатів рейтингового оцінювання інвестиційної ефективності Дніпропетровської області, отримані із використанням Методики розрахунку рейтингу інвестиційної привабливості міста (регіону), яка розроблена агентством „Євро-Рейтинг”. За результатами моніторингу соціально-економічного розвитку регіонів, який здійснює Міністерства розвитку громад та територій України, Дніпропетровська область стабільно посідає високі місця за напрямом «Інвестиційно-інноваційний розвиток та зовнішньоекономічна співпраця». Зроблено висновок, що хоча рейтингові методики та моніторинг соціально-економічного розвитку регіонів України базуються на різній системі показників, але вони дозволяють сформулювати практично однакові висновки щодо інвестиційної привабливості Дніпропетровської області. Узагальнено фактори формування рівня інвестиційної привабливості Дніпропетровської області. Наголошено, що на інвестиційну привабливість Дніпропетровської області негативно впливають такі фактори, як практично критичний знос основних засобів, низький рівень завантаження виробничих потужностей та несприятлива за багатьма показниками екологічна ситуація. Незадовільні позиції Дніпропетровська область також має за напрямками «Доступність та якість послуг у сфері освіти» (21 місце) та «Доступність та якість послуг у сфері охорони здоров'я» (18 місце).

Keywords: *investment attractiveness, region, quantitative evaluation, methodology, formation factors*

Ключові слова: *інвестиційна привабливість, регіон, кількісна оцінка, методика, фактори формування*

Formulation of the problem. After the victory and the end of martial law in Ukraine, it will be necessary to determine the priority ways to develop the national economy. The solution to this issue depends on many factors, and the investment attractiveness of individual regions must be taken into account. That is why the analysis of investment attractiveness of the region becomes especially relevant.

Analysis of recent research and publications. Such researchers as Blank I., Bondar Y., Brazhko O., Vilchynska O., Davidenko Y., Dyba M., Zavadsky G., Kozachenko G., Mayorova T., Mital O., Onishchenko I., Petrovskaya S., Stetsenko D., Shilo LA and other dealt with the problems of research of investment of economy and optimization of use of investment potential of the region. Particular attention in the research of domestic and foreign scientists was paid to the development of a methodology for comprehensive statistical evaluation of the analysis of the achieved results of regional economic development. Scientists have developed sound approaches to the implementation of regional investment policy, proposed their own methods for assessing the investment attractiveness of the region.

Existing methods of quantifying the investment attractiveness of the region differ both in approaches and in the basic system of indicators. Thus, according to the method proposed by Blank I. the investment attractiveness of the region is calculated as an integrated indicator based on five groups of synthetic indicators, namely: the level of general economic development of the region; the level of development of the investment infrastructure of the region; demographic characteristics of the region; the level of development of market relations and commercial infrastructure of the region; level of criminogenic, environmental and other risks [1]. Adheres to this approach to determining the investment

attractiveness of the region Stechenko D., but he also suggested taking into account the degree of importance of each group of factors [2].

At the same time, the conducted theoretical analysis proved the absence of a single generally accepted definition of the category "investment attractiveness of the region". The economic literature presents different approaches to determining the economic essence of this category. For example, Davydenko N. considers the investment attractiveness of the region as a cumulative characteristic of the conditions of a particular territory of the country, which includes an assessment of the level of regulatory development, investment infrastructure, human capital, financial opportunities that significantly affect the profitability of fixed assets and investment risks [3, p.88].

Zavadsky H. distinguishes the following factors in the formation of investment attractiveness of the region: political, social, institutional, environmental and economic [4, p.153].

Petrovska S. considers the investment attractiveness of the region as its integral assessment from the standpoint of investment climate, level of investment infrastructure development, opportunities to attract investment resources and other factors that significantly affect the formation of investment profitability and investment risks (taking into account environmental status) [5, p.92].

According to Vilchynska O. to assess the investment attractiveness of the region is important indicator of capital investment, which allows to assess the state of real investment [6, p.409]. To determine the place of a particular region in the total number of regions of Ukraine, according to the author, an integrated indicator can be used - "total investment potential", which is the sum of production and financial, socio-economic and natural resource potentials of the region minus factors that negatively affect investment attractiveness of the region [6, p.411]. Based on the obtained evaluation results, all regions of the country can be grouped into several groups: 1) regions of priority investment attractiveness (efficiency is 35-40% higher than in the country as a whole); 2) regions of relatively high investment attractiveness (efficiency is 15-20% higher than in the country as a

whole), 3) regions of medium investment attractiveness (efficiency at the level of the country); regions of low investment attractiveness (efficiency is 20-30% lower than in the country as a whole).

Thus, the lack of a generally accepted definition of the category "investment attractiveness of the region" has led to the fact that there is no single methodological approach to its assessment. A number of issues related to assessing the investment attractiveness of regions remain unresolved. That is why there is a need for further research in this area.

Formulation of the goals of the article (task setting). The aim of the article is to analyze the investment attractiveness of Dnipropetrovsk region. To this end, the following tasks were solved: generalization of approaches to determining the category of "investment attractiveness of the region"; analysis of the existing methodological support for assessing the investment attractiveness of the region and its improvement; analysis of factors of formation of investment attractiveness of Dnipropetrovsk region with the use of rating methods.

Presentation of the main material of the study. The economic literature presents various methodological approaches to assessing the investment attractiveness of individual regions. In this case, the defining classification features are the following: data processing methods and system of indicators. Thus, the main methods of data processing are descriptive and rating. The descriptive method is to describe the absolute indicators, structure and dynamics of indicators of regional development. The expert independently selects the most significant indicators and draws conclusions based on them on the investment climate in the region. Mostly this method is based on the study of socio-economic development of the region [7, p.293]. The rating approach is based on a survey of economic entities in the region, in the process of which determine the degree and direction of influence of certain factors. These surveys are grouped, and the overall ranking of the region is built on the basis of an integrated indicator. This technique is widely implemented in the practice of leading global consulting and analytical agencies [4, p.153].

We summarized the results of assessing the investment attractiveness of the Dnipropetrovsk region, which were obtained using the Methodology for assessing the investment attractiveness of the Kyiv International Institute of Sociology, the Methodology for calculating the investment attractiveness rating of a city (region), developed by the Euro-Rating and monitoring of socio-economic development, which is carried out by the Ministry of Community Development and territories of Ukraine.

The methodology for assessing the investment attractiveness of the regions of the Kyiv International Institute of Sociology (hereinafter - the AIA Methodology) was developed in partnership with the Institute for Economic Research and Policy Consulting commissioned by the State Agency for Investment and National Project Management of Ukraine. characteristics of the investment environment of the regions of Ukraine; analysis of investment risks in the regions of Ukraine; analysis of opportunities and obstacles for investment activities in the regions of Ukraine. According to the AIA Methodology, the investment attractiveness of an individual region is determined by a set of factors that can be divided into "hard" and "soft" according to the criterion of invariability or variability over time. Thus, the "hard" factors include factors whose effects cannot be changed in the short term. The group of "soft" factors includes factors that can change in a relatively short period of time and can create barriers to the implementation of investment projects [8].

The analysis of the results obtained in accordance with the AIA Methodology allowed us to draw the following conclusions. The general index of investment attractiveness of Dnipropetrovsk region is 1.449991 points (fifth place in the ranking of regions). Characteristics of some "hard" and "soft" factors of investment attractiveness of Dnipropetrovsk region are given in Table 1.

Table 1. Results of estimating the factors of investment attractiveness index of Dnipropetrovsk region

"Hard" factors			"Soft" factors		
	Score in points	Rating		Score in points	Rating
Geographical location of the region			Business climate	1,484801	10
Natural resources (water, land)	1,804776	2	Efficiency of state bodies	1,441666	15
Labor resources (health)	1,448385	21	Administrative procedures	1,390229	21
Labor resources (education)	1,425723	8	Observance of property rights	1,363883	19
Innovative potential	1,325525	13	Corruption	1,450608	9
Consumer segment	1,300669	2	Taxes and fees	1,584239	8
Business segment	1,452382	2	Openness of government	1,660555	9
Infrastructure	1,451804	11	Business optimism	1,395972	16
<i>Total by group</i>	1,556339	2	<i>Total by group</i>	1,35091	14

Source: Constructed by the author according to [8]

Thus, from the point of view of assessing investment attractiveness, a significant advantage of Dnipropetrovsk region is the "hard" factors, namely the geographical location of the region and available natural resources. Together with a group of "hard" factors, Dnipropetrovsk region ranks second in the ranking. Dnipropetrovsk region is one of the regions with the largest area and ranks second. The total area of the region is 3192 thousand hectares, of which 78.7% are agricultural lands. Dnipropetrovsk region has seven neighbors-regions and belongs to the internal territory of Ukraine, because it has no common borders with other states. An important factor in investment attractiveness is the availability of natural resources, the intensity of their extraction and use. Thus, Ukraine is among the eleven countries with the largest reserves of iron ore in the world. The subsoil of the state contains ore deposits, from which it is possible to obtain 140 million tons of manganese, which is 22.2% of world reserves. At the same time, the main reserves of these ores are concentrated in the Dnipropetrovsk region. Nickel ore deposits are also located in the Dnipropetrovsk region [8]. It is important that the

largest waterway in Ukraine – Dnipro city - flows through the territory of Dnipropetrovsk region.

According to the group of "soft" factors, Dnipropetrovsk region ranks only fourteenth. Therefore, to increase the overall rating of investment attractiveness of the region, first of all, it is necessary to pay attention to these factors by updating the analysis of expectations of economic agents who make investment decisions.

The investment attractiveness of Dnipropetrovsk region was also analyzed using the Methodology for calculating the investment attractiveness rating of the city (region), which was developed by the Euro-Rating Agency (hereinafter - the AER Methodology).

The AER methodology allows assessing the investment attractiveness of the region and determining the practical results of the territories after attracting investment. Euro-Rating surveys have been conducted quarterly since 2015 in 22 regions of Ukraine (excluding Donetsk and Luhansk regions and Autonomous Republic of Crimea). The evaluation is carried out according to two groups of indicators: 1) criteria that determine the investment activity of the city (region), namely capital investments, foreign investment, the volume of construction work performed; 2) criteria that determine the socio-economic effect of investment for the city (region), namely the amount of wages, the commissioning of housing, employment of the unemployed, the volume of services [9].

According to the AER Methodology, Dnipropetrovsk region consistently ranks high in the national ranking. According to the evaluation scale, the obtained points correspond to the levels of "maximum, more than 200 points" (2016, 2017, 2019), "high, 181-200 points" (2018) and "above average, 161-180 points" (2015). Generalizations of the results of the rating assessment of investment efficiency of Dnipropetrovsk region are shown in Fig. 1.

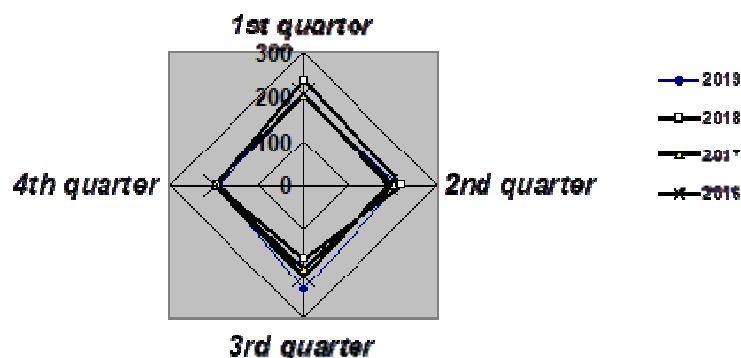


Fig. 1 Results of rating assessment of investment attractiveness of Dnipropetrovsk region according to the methodology of the agency "Euro-Rating"

Source: Constructed by the author according to [9]

It should be noted that in accordance with the AER Methodology, the assessment of investment attractiveness of the region is carried out on two groups of indicators: 1) criteria that determine the investment activity of the region; 2) criteria that determine the socio-economic effect of investment for the region. In this case, the first group includes only three indicators (capital investment, foreign investment, the volume of construction work), and the second four (wages, housing, commissioning of the unemployed, the volume of services). In our opinion, the system of evaluation indicators should be expanded.

In addition to the above methods to assess the investment attractiveness of a region can also be used the results of monitoring the socio-economic development of regions, which is published on its website by the Ministry of Community Development and Territories of Ukraine [10]. Thus, according to the monitoring results for 2015-2020, it can be stated that Dnipropetrovsk region consistently held high positions in the national ranking (except for 2020). In 2019, the region took the highest third place (see Figure 2).

From the point of view of the issue under consideration, it is important that the Ministry of Development of Communities and Territories of Ukraine conducts monitoring in certain areas: "1- Economic and social cohesion"; "2 - Economic efficiency"; "3 - Investment and innovation development and foreign economic cooperation"; "4 - Financial self-sufficiency"; "5 - Development of small and

medium enterprises"; "6 - Labor market efficiency"; "7 - Infrastructure Development"; "8 - Renewable energy and energy efficiency"; "9 - Availability and quality of services in the field of education"; "10 - Availability and quality of health services"; "11 - Social protection and security"; "12 - Rational use of nature and environmental quality". In this case, each area is evaluated by a certain list of indicators. This makes it possible to use monitoring results to assess the investment attractiveness of the region.

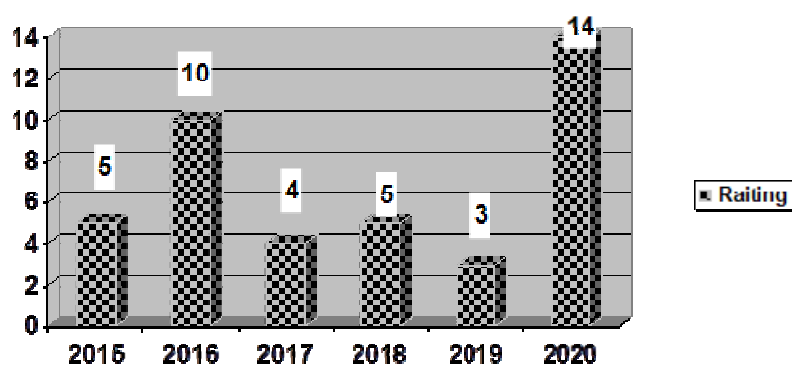


Fig. 2. The place of Dnipropetrovsk region according to the results of monitoring the socio-economic development of the regions in 2015-2020

Source: Constructed by the author according to [10]

Thus, according to the analysis, Dnipropetrovsk region consistently ranks high in the ranking of socio-economic development of regions in the direction of "3- Investment and innovation development and foreign economic cooperation." This direction of development is estimated by means of six indicators. In 2020, Dnipropetrovsk region ranked second in two indicators, namely the volume of capital investment (excluding investment from the state budget) per capita since the beginning of the year (UAH 15,208.9) and the volume of exports per capita per capita (\$ 2,403.0). The share of sold innovative products of Dnipropetrovsk region in the total volume of sold industrial products is only 0.2%. That is why, according to this indicator, the region ranks penultimate in the ranking. In 2020, the capital investment index for all regions of Ukraine was less than 100%, including 65.9% for Dnipropetrovsk region by 2019.

Four components, which determine the place of Dnipropetrovsk region in the national ranking of socio-economic development of regions, are consistently

important, significantly deviating from its overall level in the direction of increase. Thus, the lowest (penultimate in 2020) place in the ranking of regions is observed in the direction of "5- Development of small and medium enterprises." During the analyzed period, Dnipropetrovsk region occupied 22-24 places in this area. Dnipropetrovsk region also has consistently low positions in the direction of "12- Rational nature management and environmental quality" (16-23 places).

For example, air quality can be determined by the Air Pollution Index (API), which takes into account the degree of air pollution in the five priority pollutants. Analyzing the dynamics of API in the cities of Dnipropetrovsk region, it should be noted the following: API of the main cities that pollute the air of the region is quite high, which consistently exceeds its average level; During the last three years, the API of Kamianske and Kryvyi Rih has tended to increase. In 2020, the city of Kamianske changed its position in the ratings for the level of air pollution in accordance with the ISA indicator. Thus, in the national ranking, Kamianske rose from the fourth position to the second, and in the regional - rose from second to first. It should be emphasized that this situation is no exception. Unfortunately, in the national ranking of Kamianske has recently consistently held high positions, and in 2014, even first place [11].

Dnipropetrovsk region also has unsatisfactory positions in the areas of "9- Availability and quality of services in the field of education" and "10- Availability and quality of services in the field of health care". For example, in 2020 the region ranked 21st and 18th in these areas, respectively. Thus, the growing dynamics of these factors leads to a corresponding decrease in the position of Dnipropetrovsk region in the overall rating (see Fig. 3).

It should be noted that although the AER Methodology and monitoring of socio-economic development of the regions of Ukraine are based on a different system of indicators, but they allow us to draw almost identical conclusions about the investment attractiveness of Dnipropetrovsk region. For example, in 2017-2019, the "high" scores according to the AER Methodology correspond to a high place in the ranking of regions according to the monitoring results.

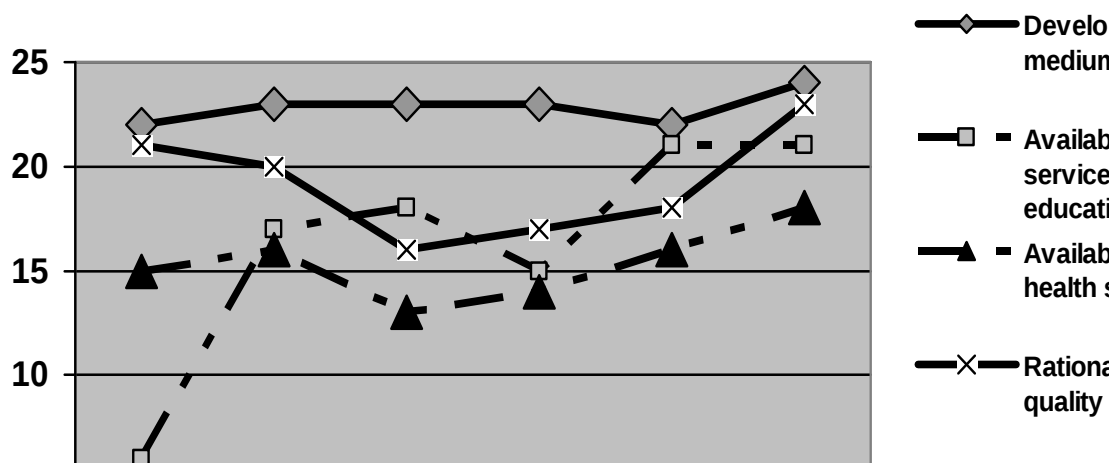


Fig. 3. Dynamics of individual components of the rating of socio-economic development of Dnipropetrovsk region

Source: Constructed by the author according to [10]

The high level of investment attractiveness of Dnipropetrovsk region explains the fact that among the regions of Ukraine Dnipropetrovsk region has consistently been a leader in attracting foreign investment. Thus, in the first half of 2021, the volume of foreign direct investment amounted to 5.4 billion dollars. (12.7% of Ukraine), which were distributed by type of economic activity as follows: 71.3% - industry; 14.7% - trade; 13.4% - services; 0.4% - agro-industrial complex; 0.2% - construction. The largest investor countries are: the Netherlands (40.8%), Cyprus (39.3%), Germany (11.4%). During this period, the foreign trade turnover amounted to 8.5 billion dollars (13.9% of the total foreign trade turnover of Ukraine): exports - 5.9 billion dollars; imports - 2.7 billion dollars. [12].

Conclusions. The investment attractiveness of individual regions is formed under the influence of a number of factors. Some of these factors can be characterized by statistical indicators that characterize various aspects of the socio-economic environment of the region. This takes into account both indicators of general economic development, indicators of the region's potential and risk factors. The investment attractiveness of Dnipropetrovsk region is due to the following factors: favorable geographical location; developed and diversified industrial sector of the economy; high development of agro-industrial complex; high scientific potential; availability of natural resources, etc. Among the factors that negatively affect the investment attractiveness of Dnipropetrovsk region, first of

all, should be noted the significant depreciation of fixed assets, low-capacity utilization, unfavorable environmental situation.

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