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**ANALYSIS OF THE INVESTMENT ATTRACTIVENESS OF AN
INDUSTRIAL-AGRARIAN REGION**

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Abstract

In modern conditions of market economy, the importance of the investment process at the macro, micro, regional and municipal levels is increasing. Investments have an impact on the development of production, infrastructure and raising the standard of living of the population through the creation of new jobs. Assessment of the investment attractiveness of a region is one of the main conditions for making any investment decision. The consequences for both the investor and the economy of the region and the country as a whole depend on the correctness of the assessment. The paper assesses the investment attractiveness of an industrial-agrarian region on the example of the Voronezh region using the methodology of Smaglyukova, which includes an economic and risk component. The conducted research revealed that the economic component, represented by the ratio of return on investment to invested funds, increased by 0.01 during the analyzed period and amounted to 0.11 in the reporting year. The risk component of the region's investment attractiveness for the analyzed period decreased by 0.07 and amounted to 4.89 at the end of the period. Voronezh region in 2017-2019 had a high level of investment attractiveness.

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Keywords: Investment attractiveness, PEST analysis, Region



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1. Introduction

The investment attractiveness of a region is a generalized characteristic reflecting the benefits, efficiency and minimization of investment risks of regional development at the expense of regional funds and funds of investors. A number of factors contributed to a reduction of resources supply in the investment market, such as the current socio-economic situation in the country, namely the aggravation of relations between countries, the application of sanctions against Russia and the introduction of retaliatory sanctions. Moreover, such factors include the instability of the ruble exchange rate against the US Dollar exchange rate, and the presence of the COVID-19 coronavirus epidemic. This situation puts the regional authorities in front of the need to find new ways to attract investors and develop local businesses that will ensure socio-economic stability in the country and secure an increase in revenues to the regional budget. Business plays an important role in the formation of the innovative economy on a regional and on a state level, as it invests financial resources in high-tech means of production (Temirbolatova, 2020).

[1] Not all subjects of the Russian Federation have a high level of investment attractiveness, and investors prefer to invest financial resources in metropolitan cities and regions with large reserves of natural resources (Burtseva, 2018). Therefore, investments are distributed unevenly across the constituent entities of the Russian Federation, and their deficit is observed in a number of regions (Kiseleva, 2013).

[2] To reduce the leakage of investment resources from the region, the authorities need to systematically analyze its investment attractiveness in order to identify weaknesses and develop a set of measures to eliminate them.

This article presents a study of the level of investment attractiveness of an industrial-agrarian region (Voronezh region) on the basis of economic and risk components.

2. Problem Statement

The main element of the development of regions at the present stage of the economy is a high level of their investment attractiveness. Stable financial flows contribute not only to the development of business in the region, but also have an impact on economic growth and improving the living standards of the population. The decline or absence of investments in the regional economy makes it difficult to increase the level of real incomes of the population, to develop production and infrastructure. Therefore, there is a need for the most objective assessment of the investment potential of the region, which makes it possible to identify opportunities for the growth of investment attractiveness and socio-economic development of the region. (Smagulova, 2010).

3. Research Questions

The subject of the research is the investment attractiveness of the region. There are many approaches to defining the concept of "investment attractiveness of a region". The most general definition is the following: it is a system of various objective factors that together determine the investment potential of the region, taking into account possible investment risks and potential profit from invested funds.

Today, successful and sustainable development of any economic subject of the Russian Federation is impossible without ensuring effective investment activity. Active investment activity of a constituent entity of the Russian Federation is a prerequisite for its development, and attracting investment to the region is a key task of modern society and the state.

The inflow of investments into the region is one of the main problems of modern society. This problem is especially relevant in the context of the financial and economic crisis, when a potential investor does not dare to invest their financial resources in unfamiliar investment objects (Olkhovik, 2019).

4. Purpose of the Study

The purpose of the research is an independent socio-economic assessment of the Voronezh region from the point of view of its investment attractiveness in order to develop recommendations for the implementation of investments and determine measures to increase the level of investment attractiveness of the region.

5. Research Methods

The sources used for writing this article include the official data from the website of The Russian Federal State Statistics Service (www.gks.ru): Russia in figures; Regions of Russia; Socio-economic indicators; The main characteristics of the subjects of the Russian Federation.

The authors used the following research methods: the statistical method applied at the initial stage of quantitative data collection and when identifying general patterns of investment attractiveness of the Voronezh region; the comparison method applied when comparing the indicators of the reporting year with the base one; the coefficient method applied when determining the level of investment attractiveness of the industrial-agrarian region - the Voronezh region.

6. Findings

The investment process plays an important role in the economy of any region. Investment largely determines the economic growth of the region, employment of the population and constitutes an essential element of the base on which the economic development of society is based (Chirikhin, 2019; Kosolapova et al., 2016). Investment attractiveness of a region is an integral characteristic of individual regions of the country from the standpoint of the investment climate, the development level of investment infrastructure, opportunities for attracting investment resources and other factors that significantly affect the formation of investment returns and investment risks (Gurova, 2019). Assessment and forecasting of the investment attractiveness should be directly linked to the state regional policy. The purpose of this policy is to ensure the efficient regional development, considering rational use of various economic opportunities (Karpova & Roznina, 2019).

To assess the investment attractiveness of the Voronezh region, we will use the methodology of Smaglyukova, including economic and risk components (Vasiliev, 2018). The economic component represents the return on investment ratio to invested funds and is calculated using formula 1:

$$K1 = (GRP * (1 - D) * (1 - T) - I) / I \quad (1)$$

where GRP is the gross regional product; D is the budget deficit (the ratio of the state budget deficit to the GRP), in unit shares; T is the average tax rate; I is the volume of investments.

Table 01 presents the results of an analysis of the investment attractiveness 'factors of the Voronezh region (Voronezhstat, 2019).

Table 1. Factors of the economic component of the investment attractiveness of the region

Index	2017	2018	2019	Deviation 2019 from 2017, (+ ; -)
Gross regional product, million rubles	868290.6	943595.6	916112.2	47821.6
Consolidated budget revenues, million rubles	114195.0	135777.4	124325.9	10130.9
Consolidated budget expenditures, million rubles	108403.9	123568.8	115978.5	7574.6
Budget deficit, million rubles	-	-	-	-
Budget surplus, million roubles	5791.1	12208.6	8347.4	2556.3
Ratio of the state budget deficit to GRP, share	-	-	-	-
Average tax rate, coefficient	0.64	0.64	0.64	-
Investment volume, million rubles	283652.3	279212.5	298032.0	14379.7
K1	0.10	0.22	0.11	0.01

During 2017-2019 there was an annual increase in income and expenses of the consolidated budget of the Voronezh region. In 2019, the revenues of the region's consolidated budget amounted to 124325.9 million rubles, which is 10130.9 million rubles above the level of 2017. Consolidated budget expenditures increased in 2017-2019 to 7574.6 million rubles and amounted to 115978.5 million rubles in 2019. In the analyzed period, the budget of the Voronezh region got a surplus of 5791.1 million rubles in 2017; 12208.6 million rubles in 2018 and 8347.4 million rubles in 2019 (Official site of the Federal State Statistics Service of the Russian Federation). The economic component, represented by the return on investment ratio to invested funds, in 2019 was 0.11, which is 0.01 higher than the level of 2017.

The initial data for calculating the risk component of the investment attractiveness of the Voronezh region will be considered in Table 02.

Table 2. Initial data for calculating the risk component of the investment attractiveness of the region

Index	2017	2018	2019	Deviation 2019 from 2017, (+;-)
Investment in fixed assets, billion rubles	283.7	279.2	298.0	14.3
Investments in fixed assets of Russia, billion rubles	16027.3	17595.0	17894.1	1866.8
The growth rate of investments in fixed assets, coefficient	1.05	0.98	1.07	0.02
Share of investments in fixed assets in investments of the country, coefficient	0.02	0.02	0.02	-
Fixed capital investment per capita, rub.	121478.12	119633.22	128017.87	6539.75
The share of investments in fixed capital of enterprises-residents of the country, coefficient	0.82	0.86	0.89	0.07
Total enterprises and organizations, units	60358	59831	58495	-1863
Income of organizations - total, million rubles	1824901	32778.1	29853.5	11604,40
Income per organization, thousand rubles	302.35	547.84	510.36	208.01
Growth rate of income per organization, coefficient	1.23	1.81	0.93	-0.30
Commissioning of fixed assets, mln.	299243	190794	244851	-54392
The main production assets put into operation are accounted for per organization, mln.	4.96	3.19	4.19	-0.77
The growth rate of the fixed assets put into operation, coefficient	0.95	0.64	1.31	0.36

The amount of investments in fixed assets of the Voronezh region increased over the analyzed period by 14.3 billion rubles. and amounted to 298 billion rubles in 2019. The amount of investments in fixed assets of Russia increased over the analyzed period to 1866.8 billion rubles and reached the level of 17894.1 billion rubles in 2019. Fixed capital investment share ratio of the Voronezh Region in the country in the analyzed period was 0.02. The amount of investments per capita in 2019 amounted to 128,017.87 rubles, which is 6539.7 rubles above the 2017 level.

The total number of enterprises and organizations in the Voronezh region decreased over the analyzed period by 1863 units and amounted to 58495 units in 2019. The total amount of organizations' income increased in 2017-2019 by 11604 million rubles, and the income per organization increased by 208.01 thousand rubles. The growth rate of income per organization decreased by 0.30 and amounted to 0.93 in 2019.

The commissioning of fixed assets decreased during the analyzed period by 54392 million rubles and amounted to 244851 million rubles in 2019. One organization accounted for 4.19 million rubles in 2019 commissioned fixed assets, which is 0.77 million rubles below the 2017 level.

Table 03 shows the factors of the risk component of the Voronezh Region investment attractiveness.

Table 3. Factors of the risk component of the region's investment attractiveness

Index	weight ^{Ji}	2017	2018	2019
Investment growth rate in fixed assets,%	0.30	0.31	0.30	0.32
Share of investments in fixed assets in investments of the country as a whole,%	0.15	0.003	0.002	0.002
Share of investments in fixed assets of enterprises-residents of the country,%	0.20	0.16	0.17	0.18
Income per organization, million rubles	0.30	0.09	0.16	0.15
Established OPFs per organization, mln.	0,05	0,25	0,16	0,21
Total	1.00	0.82	0.79	0.86

The risk component, which makes it possible to assess the level of the aggregate indicator, is calculated using the following formula:

$$K2 = \frac{\sum_{i=1}^n P_i * j_i}{\sum_{i=1}^n j_i}$$

where n is the number of indicators; Pi - characteristic of the indicator; Ji- indicator weight.

The calculation the risk component of the region's investment attractiveness is carried out in Table 04.

Table 4. Calculation of the risk component of the region's investment attractiveness (PxJ)

Index	2017	2018	2019	Deviation 2019 from 2017, (+ ; -)
The growth rate of investments in fixed assets, coefficient	1.05	0.98	1.07	0.02
Share of investments in fixed assets in investments of the country, coefficient	0.02	0.02	0.02	-
The share of investments in fixed capital of enterprises-residents of the country, coefficient	0.82	0.86	0.89	0.07
Growth rate of income per organization, coefficient	1.23	1.81	0.93	-0.30
The growth rate of the fixed assets put into operation,	0.95	0.64	1.31	0.36

coefficient				
Total	4.06	4.32	4.22	0.15
K2	4.96	5.44	4.89	-0.07

The risk component of the investment attractiveness of the Voronezh Region for 2017-2019 decreased by 0.07 and amounted to 4.89 in 2019, which was caused by a decrease in the rate of income growth per organization.

The assessment of the aggregate indicator of the investment attractiveness of the region is carried out according to the following formula:

$$K = K1 \times K2 \quad (4)$$

where K is an indicator of the investment attractiveness of the region, in units; K1 - economic component, in units; K2 - risk component, in units.

Regions, depending on the value of the indicator of investment attractiveness, are classified as follows: $K > 0.4$ - high level of investment attractiveness; $0.2 < K < 0.4$ - the level of investment attractiveness is above average; $0.1 < K < 0.2$ - average level of investment attractiveness; $0.05 < K < 0.1$ - investment attractiveness is below average; $K < 0.05$ - low level of investment attractiveness.

The assessment of the aggregate indicator of the investment attractiveness of the Voronezh region is carried out in Table 05.

Table 5. Assessment of the aggregate indicator of investment attractiveness of the Voronezh region

Index	2017	2018	2019	Deviation 2019 from 2017, (+;-)
K1	0.10	0.22	0.11	0,01
K2	4.96	5.44	4.89	-0.07
K	0.50	1.20	0.54	0.04

The results obtained indicate that the investment attractiveness of the Voronezh region was high in 2017-2019 and had a positive dynamic of change.

Using the PEST analysis, we will consider the influence of factors on the investment attractiveness of the Voronezh region (Table 06).

Table 6. Calculation of PEST factors influencing the investment attractiveness of the Voronezh region

Factors	Content and assessment of factors
Political	Favorable economic and geographical location. Voronezh region is in an extremely advantageous strategic location, it is located in the junction of transport communications going to the industrial regions of the Russian Federation and the CIS countries (+) In recent years, the region is close to the regions with a stable, competent government and a good financial reputation (+) The region has a rich natural resource base (+) Increase in the growth rate of investments in fixed assets of the region for 2017-2019 by 105% (+)
Economic	Increase in agricultural production (+) Increase in the volume of shipped goods of own production by type of economic activity: mining and manufacturing (+) Increase in retail turnover (+)
Social	Decline in population and population density (-) Decrease in fertility rate (-)

	Reduction of unemployment rate (+)
	Reduction in mortality (+)
	Increase in average per capita monetary income, subsistence minimum, average monthly wages, average pensions (+)
	Well-established communication routes (+)
Technological	Increase in investments in fixed assets of the Voronezh region (+)
	Decrease in commissioning of fixed assets (-)

Thus, the PEST analysis testifies to the positive impact of most external factors - political, economic, social and technological - on the development of the Voronezh region.

7. Conclusion

After the study of the investment attractiveness of the Voronezh Region, it can be noted that during the analysed period, the investment attractiveness of the region increased, and the highest value of the investment attractiveness aggregate indicator of the Voronezh Region was noted in 2018. The increase in investment attractiveness is caused by the improvement of the regional economy, since the risk component has negative dynamics.

To increase the investment attractiveness of the region, it is necessary to use the following mechanisms (Gladkaya, 2013; Gurova, 2019): creation of equal competitive conditions for economic activity for all investors, improvement of antimonopoly policy, implementation of effective legal and practical mechanisms to protect the interests and rights of investors in the implementation of investment projects, elimination of contradictions in the regulatory framework investment activity, state support of regions (Medvedeva et al., 2019), simplification of procedures for approval and obtaining permits for their development and implementation.

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