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Assessment of the Level of Region Investment Security

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Abstract

The purpose of the article is to assess the level of investment security in the region using the example of Crimea. All indicators of investment security must brought into a comparable form to calculate the integral indicator of investment security in the region. This requires standardization and comparison of the obtained numerical values of each indicator with its normative value. We calculate the integrated indicators for each group of indicators, and then we obtain the general integrated indicator of investment security. The resort and tourism sector, agriculture, construction, industry and the fuel and energy sectors are the most attractive for investors. The gross regional product (GRP) and the volume of investments in fixed assets in Crimea increased in 2014-2017. The largest share in the structure of investments in fixed assets occupied by investments in buildings and structures. Relatively small amounts in Crimea invested in housing stock. First, the Crimean economy grows; the debt burden on the region's economy has sharply increased in 2016-2017. Second, crime decreased in 2016-2017. Third, investment in fixed assets is increasing; there is a decrease in the investment potential of the region at its own expense, but the region does not have enough foreign investment and there is a lack of investment in research. Fourth, there is a slowdown in the processes of capacity building and expansion of production, since the coefficients of renewal and retirement of fixed assets have decreased, while the fixed assets of the Crimea worn out and require updating.

Keywords: Investment security of the region, Crimea, investments, Public administration

1 Introduction

Relevance. The topic of this study is of particular interest in managing the region, and it is relevant for any region. Investment security is a component of the economic security of the region as a whole; scientists and experts pay more attention to the components of the country's economic security, as well as the economic security of the region.

This is reflected in the works: on potential risks to national security and methods of their minimization associated with electronic currency [1], financial and economic security of business entities [2], institutional deformations in the economy associated with raiding, corruption, shadow economy [3], on the assessment of risks in the business environment [4], the activation of investment processes [5], on the innovative component in ensuring the security of the region, taking into account the theories and concepts of the formation of intellectual capital in an innovative society [6], on the criteria for identifying potential "growth points" within the framework of regional economic policy [7], about breakthrough technologies in sectors of the economy [8], about the sustainability of the development of the regional economy taking into account indicators, analysis and systematization [9].

However, insufficient attention paid to assessments of investment security indicators in the region.

The purpose of the article is to assess the level of investment security in the region using the example of the

Republic of Crimea.

Achieving the goal requires:

- Analyze the investment activity of the Republic of Crimea;
- Assess the level of investment security of the Republic of Crimea

2 Methodology

Indicators of investment security in the region include general indicators of the investment environment; indicators of investment resources; indicators of the results of using investment resources. All indicators of investment security must brought into a comparable form to calculate the integral indicator of investment security in the region. It is required to carry out standardization, to compare the obtained numerical value of each indicator with its normative value. The calculation of integral indicators carried out for each group of indicators, and then the total integral indicator of investment security is calculated. We will identify if any factors have changed. And how these factors affected the investment opportunities of the region. We will use a correlation analysis, a factor analysis. To do this, analyze the investment activity of the Republic of Crimea, assess the level of investment security of the Republic of Crimea. Accordingly, we used, first of all, literature sources to select and expand the recommended indicators and standard values.

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3 Results and discussion

General characteristics of the investment environment of the Republic of Crimea. The Republic of Crimea established as part of the Russian Federation on March 18, 2014. The capital of the Republic of Crimea is the city of Simferopol. The area of the Republic of Crimea is 26081 square km.; the population is 2 million people. Ten cities of the Republic are in the ranking of the best resorts in Russia. Crimea has five large seaports, 600 industrial enterprises, and 700 thousand hectares of sown area. Today Crimea is a popular tourist destination that attracts guests with a wonderful climate, warm sea, and variety of natural landscapes, which create many of opportunities for active pastime and recreation. Crimea is the most multinational region; more than a hundred nationalities live on the peninsula. The Republic of Crimea has a favorable economic and geographical position, washed by the waters of two seas - Black and Azov. The length of the coastline of the peninsula is 2500 thousand km. Free economic zone (SEZ) operates in the Crimea, its benefits include exemption from tax on property of organizations for 10 years, lower tariffs on insurance premiums (7.6% in total), free customs zone, exemption from payment of land tax for organizations on 3 years, reduced income tax rates (from 2%), and accelerated depreciation (with a coefficient of up to 2) [10]. FEZ participants carry out activities in industry (106 investment projects); agriculture, including fishing (28 projects); in the social sphere and medicine (13 projects); construction (61 projects); transport (22 projects); fuel and energy industry (9 projects); in trade (51 projects); in the service sector (124 projects) [11]. The Republic of Crimea and Sevastopol entered the category of moderate investment attractiveness (IC9) according to the annual rating of investment attractiveness of the regions of Russia; the rating compiled by the National Rating Agency in 2017. These regions participated first time in the ranking. This result obtained due to infrastructure and institutional problems, as well as significant investment risks generated by international sanctions [12].

The leadership of the Republic of Crimea contributes to the investment attractiveness of the peninsula. The Republic of Crimea has a Procedure for considering investors 'appeals and concluding agreements on the implementation of investment projects in the Republic of Crimea. The Procedure approved by the Decree of the Council of Ministers of the Republic of Crimea dated 07.10.2014 No. 368 and provided for a 30-day period for considering an investor's appeal and concluding an investment agreement with him. There are 182 investment projects implemented in accordance with the Procedure within the framework of the signed Agreements (taking into account the terminated and suspended agreements); total investment is 190.5 billion rubles. A result of these projects, about 15.6 thousand jobs created. The resort and tourism sector, agriculture, construction, industry and the fuel and energy sector are the most attractive for investors. The following major investment projects implemented. Investment project "Construction of a new airport complex at Simferopol Airport" with an investment volume of about 22.7 billion rubles. This is one of the largest investment projects in the recent history of Crimea. Investment project "Construction of the "Belogorsky" greenhouse plant in the Republic of Crimea", initiated by "Belogorsky" Greenhouse Plant LLC, with an investment volume of 3.9 billion rubles; Investment project "Multifunctional Sports and Recreation Complex", initiated by "Ecological and Tourist Center in Parkovoy" LLC, with a total investment of 9.7 billion rubles; Investment project "Construction of a residential complex in the city of

Yevpatoriya", initiated by Petrokomplekt LLC, with a total investment of 2.5 billion rubles, including capital investments of 2.0 billion rubles, etc. Investment projects are the supervision of members of the Council of Ministers of the Republic of Crimea, depending on the volume of investments. The purpose of supervision is to improve the quality and speed of preparation of documents, their interagency coordination and the practical implementation of investment projects in the Republic of Crimea. Support for investment projects concluded in accordance with the Procedure, with an investment volume of 5 billion rubles or more, is assigned to the Head of the Republic of Crimea.

On July 2, 2019, the Law on Investment Policy and State Support for Investors in the Republic of Crimea and on Amending Certain Laws of the Republic of Crimea adopted. The best practices of the National Investment Climate Rating, as well as the Standards for the activities of executive authorities of the constituent entities of the Russian Federation to ensure a favorable investment climate in the region are in the process of implementation. The Republic of Crimea rose by 20 points and took 64th place following the results of the St. Petersburg International Economic Forum in 2017 compared to 2016. The "Center for Investment and Regional Development" operates in the Republic of Crimea, on its basis the Center for Cluster Development and JSC "Development Corporation of the Republic of Crimea" created. The tasks of the Centers are consulting support of investors, project support, provision of services to subjects of investment activities related to the preparation and implementation of projects on a "one-stopshop" basis. The geography of investors is expanding. Currently, in the Republic of Crimea, about 2,930 legal entities registered the founders of which are foreign organizations (595) and individuals (2335) from 33 countries. These are companies and individuals from Ukraine, Cyprus, the Virgin Islands, Great Britain, Austria, Belize, Panama, Seychelles, Turkey, etc.

Currently, work with investors implementing projects on the territory of the Republic of Crimea built using the project management system, which reduce the time for approval of investment projects, simplify the process of monitoring their implementation, and enable the investor to track the process of approval of the project in the "personal account". The automatic information system for project management successfully operates on the site pm.rk.gov.ru. According the Decree of the Council of Ministers of the Republic of Crimea "On approval of the Regulation on the project management system in the executive bodies of state power of the Republic of Crimea and local authorities of municipalities in Republic of Crimea" (dated July 25, 2017 No. 371) the main regulatory framework was developed and approved. It regulates project activities in the territory of the Republic of Crimea. The Project Committee of the Republic of Crimea and the Central Project Office worked from 2017. Functional and municipal project offices, respectively, created in the executive bodies of state power and municipalities. A motivation system for participants in project activities was developed, which approved by Decree of the Council of Ministers of the Republic of Crimea dated 05.12.2017 No. 654 "On approval of the Regulation on motivation for participants in project activities in the executive bodies of state power of the Republic of Crimea". According to the results of evaluating the implementation of project management, the Republic of Crimea took the third prize in the annual competition for professional project management in the public sector "Project Olympus", held by the Analytical Center under the Government of the Russian Federation. The Regional Certification Center registered in the Center for Investment and Regional Development. Currently, work is underway to

organize training and certification, a training schedule formed, lists of future participants in certification tests are compiling [13]. In the Republic of Crimea, the economic potential is growing and the gross regional product is increasing (Figure 1).

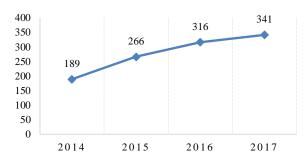


Figure 1: Dynamics of the gross regional product of the Republic of Crimea in 2014-2017, billion rubles (Source: compiled by the authors based on [14])

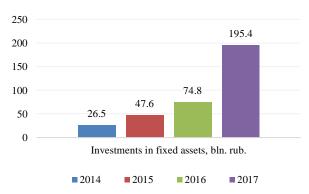


Figure 2: Dynamics of investments in fixed assets of the Republic of Crimea in 2014-2017 (Source: compiled by the authors based on [15])

The physical volume of the gross regional product (GRP) of Crimea increased by 8.5% in 2015; according to this indicator, Crimea took the 2nd place among the regions of Russia. GRP of Crimea grew by 6.0% in 2016. Crimea's economy grew by 10% in 2017 (record growth over the past decade). At the same time, the volume of investments is also

increasing in the economy of the Republic of Crimea (Figure 2). During the analyzed period, the volume of investments in fixed assets of the Republic of Crimea increased by an average of 35%, but investments increased 2.3 times in 2017 compared to 2016. The structure of investments in fixed assets of the Republic of Crimea by sources of financing is in Figure 3.

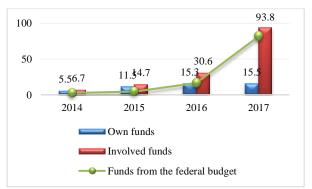


Figure 3: Structure of investments in fixed assets of the Republic of Crimea by sources of financing in 2014-2017, billion rubles (Source: compiled by the authors based on [15])

As the diagram in Figure 3, the amount of borrowed funds in fixed assets increases significantly during the analyzed period, while the growth rate of own invested funds is low. Thus, the structure of investments is greatly changing, and borrowed funds occupy an increasing share than their own. In the structure of attracted investments, the largest share occupied by budget funds, namely, revenues from the federal budget, which occupy 21.6%, 17.5%, 35.5%, 74.6% of total investments in fixed assets according to the years of the study. The structure of investments in fixed assets of the Republic of Crimea by type of investment presented in Figure 4. According to Figure 4, the largest share in the structure of investments in fixed assets occupied by investments in buildings and structures, while they increased during 2014-2017. Investments in dwellings were in second place, but in subsequent years, investments in machinery and equipment took second place, vehicles, inventory in 2014. Relatively small amounts in the Republic of Crimea invested in housing.

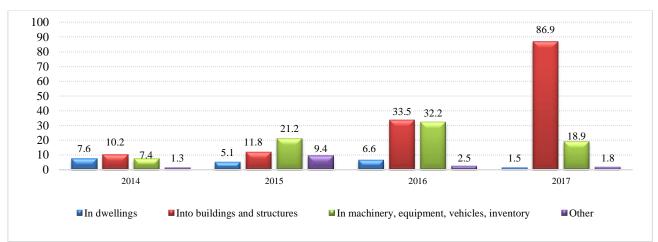


Figure 4: Structure of investments in fixed assets of the Republic of Crimea by type of investments in 2014-2017, billion rubles (Source: compiled by the authors based on [15])

| | Table 1: Analysis of indicators necessary to assess the investment security of the Republic of Crimea for 2014-2016 | | | | | | | | | | |
|-----|---|-------------|----------|--------------------------|--------------------------------|----------|---------------------------|---------------------------------|-----------|----------|--|
| | | 2014 | 2015 | Abs. off 2015-2014 | Relevance off 2015/ 2014 | 2016 | Abs. off 2016- 2015 | Relevance off. 2016/ 2015 | Normative | Trend | |
| Ge | General indicators of the investment environment | | | | | | | | | | |
| 1 | GRP, million rubles. | 189439,2 | 265970,6 | 76531,40 | 40,40 | 315918,5 | 49947,90 | 18,78 | 257109,4 | Increase | |
| 2 | Volume of gross regional product per capita, thousand rubles | 99,92 | 139,46 | 39,54 | 39,57 | 165,21 | 25,75 | 18,46 | 134,87 | Increase | |
| 3 | The ratio of public debt to GRP,%. | 0,25 | 0,15 | -0,10 | -38,99 | 1,68 | 1,52 | 1000,83 | 0,69 | Decrease | |
| 4 | The number of crimes per 100.0 thousand people | 962,50 | 1459,91 | 497,41 | 51,68 | 1241,87 | -218,04 | -14,94 | 1221,43 | Decrease | |
| Inv | estment Resource | Indicators | T | 1 | 1 | 1 | 1 | T | T | T | |
| 1 | Investments in fixed assets, million rubles. | 26446,8 | 47582,3 | 21135,50 | 79,92 | 74795,3 | 27213,0 | 57,19 | 49608,13 | Increase | |
| 2 | Investments in fixed assets to GRP,% | 13,96 | 17,89 | 3,93 | 28,15 | 23,68 | 5,79 | 32,34 | 25,00 | Increase | |
| 3 | Volume of investments in fixed assets per capita, rubles. | 13,95 | 24,95 | 11,00 | 78,86 | 39,11 | 14,16 | 56,77 | 26,00 | Increase | |
| 4 | Coefficient of investment at the expense of own funds,% | 45,10 | 47,00 | 1,90 | 4,21 | 33,40 | -13,60 | -28,94 | 37,00 | Increase | |
| 5 | The share of investment in fixed assets of foreign ownership,% | 7,21 | 3,33 | -3,88 | -53,78 | 3,44 | 0,11 | 3,16 | 20,00 | Increase | |
| Inv | estment Resource | Use Results | I | <u> </u> | I . | | l . | I | I | I | |
| 1 | Internal research costs,% of GRP | 0,27 | 0,46 | 0,19 | 71,97 | 0,45 | -0,02 | -3,89 | 2,00 | Increase | |
| 2 | Commissioning of new fixed assets, million rubles | 11692,0 | 25994,0 | 14302,00 | 122,32 | 59441,7 | 33447,7 | 128,67 | 32375,90 | Increase | |
| 3 | The share of input of new fixed assets in the total receipt of fixed assets | 2,77 | 9,44 | 6,67 | 240,56 | 49,92 | 40,48 | 428,80 | 20,71 | Increase | |
| 4 | The coefficient of renewal of fixed assets,% | 34,19 | 13,54 | -20,65 | -60,40 | 5,79 | -7,75 | -57,24 | 18,00 | Increase | |
| 5 | The ratio of the disposal of fixed assets,% | 1,31 | 3,81 | 2,50 | 190,84 | 2,94 | -0,87 | -22,83 | 5,00 | Increase | |
| 6 | The coefficient of depreciation of fixed assets, %. | 70,50 | 71,50 | 1,00 | 1,42 | 69,80 | -1,70 | -2,38 | 40,00 | Decrease | |
| 7 | The share of investments in the active part of fixed assets in the total amount | 27,90 | 44,60 | 16,70 | 59,86 | 43,10 | -1,50 | -3,36 | 38,53 | Increase | |

| | 2014 | 2015 | 2016 | 2017 | Abs. off 2015-2014 | Relevanc e off 2015/ 2014 | Abs. off 2016- 2015 | Relevance off. 2016/ 2015 | Abs. off 2017- 2016 | Relevanc e off. 2017/ 2016 | Normat ive | Trend |
|---|--|---------------|---------------|---------------|--------------------------|------------------------------------|---------------------------|---------------------------------|---------------------------|-------------------------------------|---------------|--------------|
| | General indicators of the investment environment | | | | | | | | | | | |
| GRP, million rubles. | 189439,2 | 26597 0,6 | 315918,5 | 323552,1 1 | 76531,4 | 40,3989 | 49947,90 00 | 18,7795 | 7633,610 0 | 2,4163 | 273720 ,10 | Increa se |
| Volume of gross regional product per capita, thousand rubles | 99,9205 | 139,4 634 | 165,2121 | 168,9479 | 39,5429 | 39,5744 | 25,7487 | 18,4627 | 3,7358 | 2,2612 | 143,39 | Increa se |
| The ratio of public debt to GRP, ,%. | 0,2497 | 0,152 3 | 1,6769 | 1,3330 | -0,0974 | -38,9912 | 1,5246 | 1000,8257 | -0,3440 | -20,5118 | 0,85 | Decre ase |
| The number of crimes per 100.0 thousand people | 962,4980 | 1459, 9130 | 1241,868 0 | 1133,674 5 | 497,4149 | 51,6796 | - 218,0450 | -14,9355 | - 108,1935 | -8,7122 | 1199,4 9 | Decre ase |
| Investment Res | ource Indica | tors | | | | | | | | | | |
| Investments in fixed assets, million rubles. | 26446,8 | 47582 ,3 | 74795,3 | 195376,8 | 21135,5 | 79,9170 | 27213,00 00 | 57,1914 | 120581,5 000 | 161,2153 | 86050, 30 | Increa se |
| Investments in fixed assets to GRP,% | 13,9606 | 17,89 01 | 23,6755 | 60,3850 | 3,9295 | 28,1470 | 5,7854 | 32,3389 | 36,7095 | 155,0525 | 28,98 | Increa se |
| Volume of investments in fixed assets per capita, rubles. | 13,9495 | 24,95 01 | 39,1148 | 102,0191 | 11,0006 | 78,8604 | 14,1647 | 56,7722 | 62,9043 | 160,8198 | 45,01 | Increa se |
| Coefficient of investment at the expense of own funds,% | 45,1000 | 47,00 00 | 33,4000 | 14,2000 | 1,9001 | 4,2130 | -13,6001 | -28,9363 | -19,2000 | -57,4850 | 34,92 | Increa se |
| The share of investment in fixed assets of foreign ownership,% | 7,2092 | 3,332 1 | 3,4375 | 1,2000 | -3,8771 | -53,7795 | 0,1054 | 3,1630 | -2,2375 | -65,0914 | 3,79 | Increa se |

Analysis of the investment activity of the Republic of Crimea

Let us analyze the indicators necessary for assessing the investment security of the Republic of Crimea and their standards for 2014-2016. (Table 1). Consider the indicators in the first two groups separately because there are data for 2017 and average annual values (standards) in these groups will differ for 2014-2017, (Table 2). The first group of indicators of investment safety is general indicators of the investment environment. GRP dynamics shown in Figure 5.

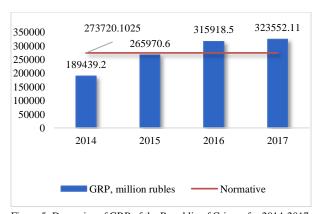


Figure 5: Dynamics of GRP of the Republic of Crimea for 2014-2017 (Source: compiled by the authors based on [14])

GRP of the Republic of Crimea increased by 70.7947% during 2014-2017. The largest increase is 40.3989% occurred

in 2015 in relation to 2014. GRP was less than the average for the analyzed periods in 2014-2015, and above the average in 2016-2017. Based on these data, we can conclude that, the economy of the region is growing. The dynamics of gross regional product per capita presented in Figure 6.

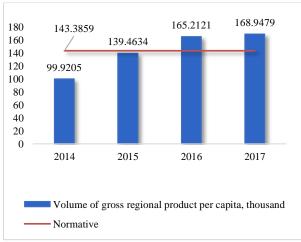


Figure: 6. Dynamics of gross regional product per capita of the Republic of Crimea for 2014-2017, thousand rubles (Source: compiled by the authors based on [14, 16])

The gross regional product per capita, like the previous indicator for the analyzed period, increased by 69.0824%. This indicator increased to the greatest extent by 39.5744% in 2015 compared to 2014 an increase of 18.4627% in 2016 compared

to 2015 and by 2.2612% in 2017. The ratio of public debt to GRP presented in Figure 7. The ratio of public debt to GRP had different dynamics in 2014-2016. It decreased from 0.25% to 0.15% in 2015 compared to 2014 and increased to 1.68% in 2016 compared to 2015. This happened because the government debt of the Republic of Crimea increased sharply in December 2016. Such a sharp increase in public debt negatively affected the investment security of Crimea, as it reduces the possibility of economic growth due to the expenditure of part of the GRP on debt repayment. The analyzed indicator decreased by 20.5218% in 2017, which is a positive trend. The dynamics of the number of crimes per 100.0 thousand people shown in Figure 8.

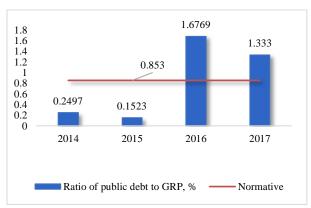


Figure 7: Dynamics of the ratio of public debt to GRP of the Republic of Crimea for 2014-2017 % (Source: compiled by the authors based on [17])

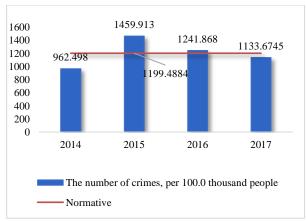


Figure 8: Dynamics of the number of crimes per 100.0 thousand people of the population of the Republic of Crimea for 2014-2017 (Source: compiled by the authors based on [18])

The number of crimes per 100 thousand people increased by 51.68% in 2015; the indicator decreased by 23.6477% in 2016-2017 and the region's investment attractiveness for crime has increased over the years.

The second group of indicators - indicators of investment resources

The dynamics of investment in fixed assets presented in Figure 9.

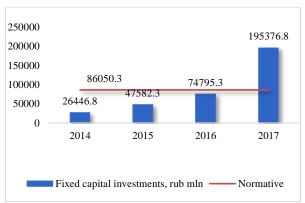


Figure 9: Dynamics of investments in fixed assets of the Republic of Crimea in 2014-2017, Million rubles (Source: compiled by the authors based on [19])

Investments in fixed assets of the Republic of Crimea increased 7.4 times during 2014-2017. However, investments in fixed assets were below average in 2014-2016 and above the average in 2017, since they have significantly increased in absolute value over this period. This situation indicates an increase in the investment security of the region. The dynamics of the volume of investments in fixed assets to GRP presented in Figure 10.

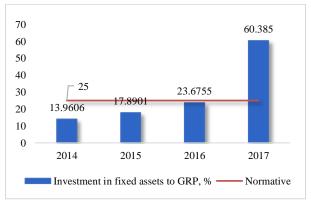


Figure 10: Dynamics of the volume of investments in fixed assets to GRP of the Republic of Crimea for 2014-2017, % (Source: compiled by the authors based on [14, 19])

The volume of investments in fixed assets to GRP for the analyzed period increased from 13.9606 to 60.3850%. This happened because the growth rate of investments in fixed assets is higher than the growth rate of GRP. However, the norm of this indicator not achieved in 2014-2016. The share investments in the GRP of the Republic of Crimea exceeded the normative value in 2017 because the investments increase in absolute terms. The volume of investment in fixed assets per capita shown in Figure 11. The volume of investment in fixed assets per capita increases in 2014-2017; this indicator was below the average in 2014-2016 and more than 2 times, above the average in 2017. An increase in this indicator contributes to the socio-economic development of the region. The investment ratio at the expense of own funds presented in Figure 12. The investment ratio at the expense of own funds increased by 2 points and amounted to 47% in 2015 compared to 2014. This indicator decreased to 33.4% in 2016 and then it decreased to 14.2% in 2017. The indicator of investing at the expense of own funds was below the normative value in the last 2 years. Thus, the region's own investment potential decreased and the share of attracted investments increased, namely, investments from

the federal budget of the Russian Federation in 2016. The share of investments in fixed assets of foreign ownership presented in Figure 13.

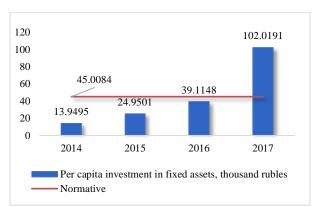


Figure 11: The dynamics of the volume of investment in fixed assets per capita in the Republic of Crimea in 2014-2017, rubles (Source: compiled by the authors based on [15, 16])

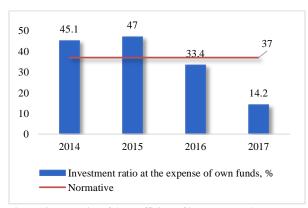


Figure 12: Dynamics of the coefficient of investment at the expense of own funds of the Republic of Crimea for 2014-2017, % (Source: compiled by the authors based on [19])

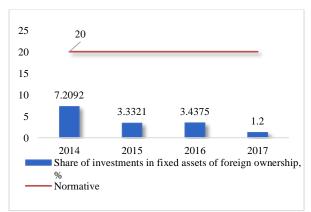


Figure 13: Dynamics of the share of investments in fixed assets of foreign ownership in the Republic of Crimea for 2014-2017,% (Source: compiled by the authors based on [15])

The share of investments in fixed assets of foreign ownership decreased from 7.21% to 3.33% in 2015 compared to 2014. A slight increase in this indicator occurred in 2016, and it amounted to 3.44%; there was a decrease to 1.2% again in 2017, the standard for this indicator is 20%. Thus, the region does not have enough foreign investments, but their attraction limited by sanctions now.

The third group of indicators of investment security in the region is indicators of the results of the use of investment resources

The indicator of the region's internal expenditures on scientific research for GRP shown in Figure 14.

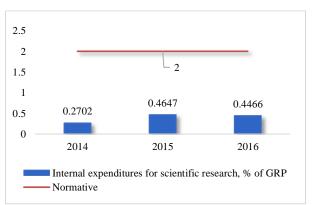


Figure 14: Dynamics of internal research costs to GRP of the Republic of Crimea for 2014-2016, % (Source: compiled by the authors based on [20])

The share of domestic research expenditures in GRP increased in 2015, as the volume of expenditures increased. The considered indicator slightly decreased and amounted to 0.45% in 2016, while the recommended value is 2%. Thus, the Republic of Crimea does not have enough investment in scientific research. The rate of commissioning of new fixed assets presented in Figure 15.



Figure 15: Dynamics of water into action of new fixed assets in the Republic of Crimea for 2014-2016, million rubles (Source: compiled by the authors based on [20])

More and more new fixed assets introduced in the Republic of Crimea for 2014-2016. Fixed assets maintained for a total amount of 97,127.7 million rubles during the analyzed period. The largest number of fixed assets of 59,441.7 million rubles.in 2016. The share of new fixed assets in the total revenue shown in Figure 16. The share of new fixed assets in the total volume of receipt of fixed assets increased in 2.27 to 49.92% in the Republic of Crimea for 2014-2016. At the same time, the largest increase occurred by 40.48% in 2016 compared to 2015. The indicator in question was above the average only in 2016. The coefficient of renewal of fixed assets presented in Figure 17. The coefficient of renewal of fixed assets was equal to 34.19; it fell to 13.54 in 2015 and to 5.79 in 2016. The coefficient was less than the normative value equal to 18 in 2015-2016. Thus, in the Republic of Crimea there are slow processes of capacity building and expansion of production.

The fixed asset retirement rate shown in Figure 18. The fixed asset retirement rate increased from 1.31% to 3.38% in 2015 compared with 2014, however, there was a reverse trend and the retirement rate became 2.94 in 2016 compared to 2015. The standard for this indicator is 5%. Of course, we cannot say that the economy of the Republic of Crimea is stagnating, but the economy did not rise in 2016, as the fixed asset retirement rate decreased. The depreciation coefficient of fixed assets shown in Figure 19. Depreciation ratios of fixed assets exceed the standard by 1.75 times, for 2014-2016, so the fixed assets of the Republic of Crimea very worn out and require updating, which means additional investments. The share of investments in the active part of fixed assets in the total amount shown in Figure 20.



Figure 16: Dynamics of the share of commissioning of new fixed assets in the total volume of receipt of fixed assets in the Republic of Crimea for 2014-2016, % (Source: compiled by the authors based on [20])

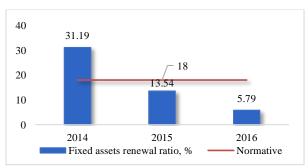


Figure 17: Dynamics of the coefficient of renewal of fixed assets of the Republic of Crimea for 2014-2016 % (Source: compiled by the authors based on [20])

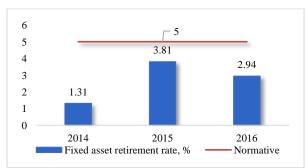


Figure 18: Dynamics of the coefficient of disposal of fixed assets of the Republic of Crimea for 2014-2016 % (Source: compiled by the authors based on [20])

The share of investments in the active part of fixed assets in the total amount in the Republic of Crimea increased by 59.86% in 2015 compared to 2014 and amounted to 44.6%. The

reverse dynamics was in 2016 and the indicator decreased to 43.10% to 2015. The analyzed indicator was above the average in 2015-2016, which means that the share of investments in the active part of fixed assets was sufficient. We can made the following conclusions according to the analysis of indicators of investment security of the Republic of Crimea [21-28]:

- Crimean economy is growing.
- The debt burden on the economy of the region sharply increased in 2016.
 - The crime decreased in 2016.
- Investments in fixed assets are increasing, but their share in GRP is not enough for the full development of the economy.
 - The investment potential decrease due to own funds.
 - The region does not have enough foreign investment.
 - There is a lack of investment in research.
- There is a slowdown in the processes of capacity building and expansion of production, since the coefficients of renewal and retirement of fixed assets have decreased.
- Fixed assets of the Republic of Crimea worn out and require updating.

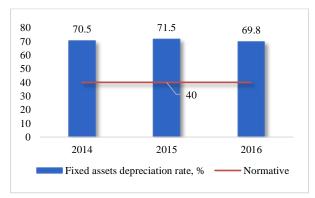


Figure 19: Dynamics of the depreciation rate of fixed assets of the Republic of Crimea for 2014-2016 % (Source: compiled by the authors based on [20])

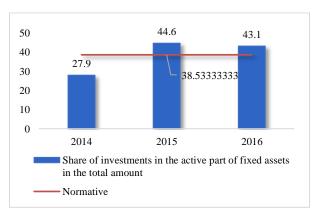


Figure 20: Dynamics of the share of investments in the active part of fixed assets in the total amount in the Republic of Crimea for 2014-2016 % (Source: compiled by the authors based on [20])

Assessment of investment security of the Republic of Crimea

To assess investment security, we will use the indicator approach, which involves the calculation of an integral indicator of investment security. To do this, we present the indicators affecting the investment security of the region in a comparable form by calculating the deviations of their values from the normative ones, and calculate the aggregate indicator of investment security of each group of indicators, and then the

integral indicator characterizing the investment security of the region. Table 3 presents the calculation of the aggregate indicator of investment security in the region of the first group

Table 3: Calculation of the aggregate indicator characterizing the investment environment of the Republic of Crimea for 2014-2016

| No. | Name of indicator | 2014 | 2015 | 2016 |
|-----|---|--------|--------|--------|
| 1 | GRP | 0,7368 | 1,0345 | 1,2287 |
| 2 | Volume of gross regional product per capita | 0,7409 | 1,0341 | 1,2250 |
| 3 | The ratio of public debt to GRP | 2,7754 | 4,5491 | 0,4132 |
| 4 | The number of crimes per 100.0 thousand people | 1,2690 | 0,8366 | 0,9835 |
| | Aggregate indicator | 5,5221 | 7,4543 | 3,8505 |

Source: calculated by the authors

The norm of the first group of indicators is 4, since there are four indicators in the group and the positive minimum value of each of the indicators should be 1. The aggregate indicator of the investment environment increased from 5.5221 to 7.4543 in 2015 compared to 2014, after this it decreased to 3.8505 and fell below the norm in 2016. The resulting value is the smallest among 2014-2016. The decrease of the aggregate indicator of the investment environment is due to a significant increase in the public debt of the Republic of Crimea in absolute terms in December 2016, a result of which the reduced of relative indicator "Ratio of public debt to GRP" significantly decreased. The remaining indicators of the first group: "GRP", "Volume of gross regional product per capita" and "Number of crimes per 100.0 thousand people" increased in 2016. The last indicator did not reach the optimal value, and the first two constantly increased and were the best in 2016. Thus, the investment environment in 2016 worsened due to a sharp increase in the state debt of the region. Table 4 presents the calculation of the aggregate indicator of investment security in the region of the second group.

Table 4: Calculation of the aggregate indicator characterizing the dynamics of investment resources in the Republic of

| Crimea for 2014-2016 | | | | | | | |
|----------------------|---|--------|--------|--------|--|--|--|
| No. | Name of indicator | 2014 | 2015 | 2016 | | | |
| | | Γ. | Γ. | Γ. | | | |
| 1 | Investments in fixed assets | 0,5331 | 0,9592 | 1,5077 | | | |
| 2 | Ratio of investments in fixed assets to GRP | 0,5584 | 0,7156 | 0,9470 | | | |
| 3 | Investments in fixed assets per capita | 0,5364 | 0,9594 | 1,5041 | | | |
| 4 | Investment coefficient at own expense | 1,2189 | 1,2703 | 0,9027 | | | |
| 5 | The share of investments in fixed assets of foreign ownership | 0,3605 | 0,1666 | 0,1719 | | | |
| | Aggregate indicator | 3,2073 | 4,0711 | 5,0335 | | | |

Source: calculated by the authors

According to table 4, the aggregate indicator of investment resources reached the normative level of 5 only in 2016; this indicator was lower than the normative value in 2014-2015, which is due to the low values of the relative indicators

"Investments in fixed assets", "Ratio of investments in fixed assets to GRP", "Investments in fixed assets per capita". These figures increased in 2016. The share of investments in fixed assets of a foreign form of ownership was very low at 0.3605 in 2014; it became even less and amounted to 0.1719 in 2015-2016. It noted that the ratio of investments from own funds in 2016 decreased and became less set recommended value. Thus, in 2016, the region recorded an insufficient ratio of investments in fixed assets in relation to GRP, as well as the volume of foreign investments in fixed assets. The most negative impact on the formation of the aggregate indicator of investment resources made by the change in the indicator "The share of investments in fixed assets of a foreign form of ownership". Attracting foreign investment in the economy of the Republic of Crimea will fundamentally change the situation in this group of indicators. Table 5 presents the calculation of the aggregate indicator of investment security in the region of the third group.

Table 5: Calculation of the aggregate indicator of the results of using investment resources of the Republic of Crimea for 2014-2016

| No. | Name of indicator | 2014 г. | 2015 г. | 2016 г. |
|-----|---|---------|---------|---------|
| 1 | Internal costs of research for GRP | 0,1351 | 0,2323 | 0,2233 |
| 2 | Commissioning of new fixed assets | 0,3611 | 0,8029 | 1,8360 |
| 3 | The share of input of new fixed assets in the total receipt of fixed assets | 0,1338 | 0,4558 | 2,4103 |
| 4 | Fixed assets renewal rate | 1,8994 | 0,7522 | 0,3217 |
| 5 | Fixed assets retirement rate | 3,8168 | 1,3123 | 1,7007 |
| 6 | Depreciation ratio of fixed assets | 0,5674 | 0,5594 | 0,5731 |
| 7 | The share of investments in the active part of fixed assets in the total amount | 0,7240 | 1,1574 | 1,1185 |
| | Aggregate indicator | 7,6377 | 5,2725 | 8,1836 |

Source: calculated by the authors

The aggregate indicator of the results of using the investment resources of the Republic of Crimea amounted to 7.6377 in 2014 in the year it fell to 5.2725 and fell below the standard value of 7 in 2015. This indicator increased to 8.1836 in 2016, and became the largest during 2014-2016, i.e. in 2016; the use of investment resources in the Republic of Crimea was the most effective. The smallest value given by the relative indicator "Internal expenditures on scientific research to GRP" during 2014-2016. Small values of this indicator indicate an insufficient level of funding for scientific research at enterprises of the Republic of Crimea. The relative indicator "Commissioning of new fixed assets" amounted to 0.3611 in 2014. However, the indicator increased during the analyzed period and amounted to 1.8360 in 2016. It was in 2016 at the Crimean enterprises that the largest volume of new fixed assets introduced. The relative indicator "The share of new fixed assets in the total receipt of fixed assets" had the same dynamics as the previous indicator and increased from 0.1338 to 2.4103 for 2014-2016. The increase in the indicator is explained by the fact that when funds more and more attention has been paid to new fixed assets. In contrast to the previous indicators, the relative indicator "Fixed assets renewal coefficient" decreased in 2014-2016 and in 2016 amounted to 0.3217. The dynamics of this indicator indicates a general decrease in the income of fixed assets at Crimean enterprises. The relative "Retirement rate" for the analyzed period also decreased from 3.8168 to 1.7007. At the same time, the lowest disposal rate recorded in 2015. The relative "Depreciation

coefficient of fixed assets" practically did not change, but reflects the high deterioration of fixed assets of the Republic of Crimea. The relative indicator "The share of investments in the active part of fixed assets in the total amount" increased from 0.7240 to 1.1185 for the analyzed period. It should be noted that in 2016 and 2017 the given indicator exceeds 1, which indicates a sufficient amount of investment in the active part of fixed assets in their total amount.

Thus, the calculation of the aggregate indicator of the results of using investments in the Republic of Crimea showed different values. The aggregate indicator exceeded the standard d in 2014 and 2016, but was below the established standard in 2015. The highest value of the aggregate indicator was determined in 2016. The growth of the aggregate indicator in the reporting period occurred primarily because many new enterprises began to work in the Republic of Crimea in 2016. Particular attention needs to low internal costs for research, a decrease in the coefficient of renewal of fixed assets and a sufficiently high level of deterioration of fixed assets. Correction of these indicators will improve the results of the use of investment resources in the Republic of Crimea.

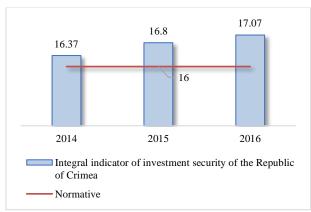


Figure 21: Dynamics of the integrated indicator of investment security of the Republic of Crimea in 2014-2016 (Source: compiled by the authors)

In each of the periods of the study, different problems observed, since the main problem of the region was the lack of investment resources in 2014, the indicators of the results of using investment resources in 2015 low, the aggregate indicator

of the investment environment was unsatisfactory in 2016. The integrated indicator of investment security of the Republic of Crimea shown in Figure 21.

As can be seen from Figure 2.21, the integral indicator of investment security of the Republic of Crimea was higher than the normative value in 2014-2016. At the same time, its dynamics constantly increased during the analyzed period, so it was 16.37 in 2014, 16.8, in 2015, 17.07 in 2016. Thus, the investment security of the Republic of Crimea was at the minimum necessary level in 2014-2016, having a positive trend, which indicates that investment activity in the region is increasing. Since there are statistics only for two groups of indicators for 2017, we calculate the integral indicator of investment security based these two groups for 2014-2017. At the same time, the standards of indicators changed, which based on the average value for the analyzed periods. We calculate the given indicators of investment security for 2014-2017 (Table 6).

Almost all the values of the investment security indicators of the first group are higher than the normative values for 2014-2017. The relative indicators "GRP" and "Volume of gross regional product per capita" in 2014, "The number of crimes per 100 thousand people." in 2015 and 2016, as well as the "Ratio of public debt to GRP" in 2016 and 2017 made in exception. The low values of the latter indicator are due to the large amounts of the state debt of the Republic of Crimea in 2016-2017, as a result of which the aggregate indicator of investment resources is very low, and in 2016 it is even less than the standard. Moreover, the highest value of this indicator recorded in 2015. The positive dynamics of the aggregate indicator of the investment environment in 2017 compared to 2016 was due to a decrease in the ratio of public debt to GRP and a decrease in the number of crimes per 100 thousand people in the Republic of Crimea.

There is an increase in the indicators "Investments in fixed assets", "Investments in fixed assets to GRP", as well as "Investments in fixed assets per capita" in 2017. This is due to the fact that investment in fixed assets increased by more than 2.5 times in 2017. However, this year, even indicators that were so low have decreased, namely, the "Investment rate at the expense of own funds" and "The share of investment in fixed assets of a foreign form of ownership". The positive impact of the first three indicators exceeded the negative impact of the last two, which led to an increase the aggregate indicator of the dynamics of investment resources in 2017 compared to 2016.

Table 6: Relative indicators of investment security of the Republic of Crimea for 2014-2017

| | Table 6. Relative indicators of investment security of the Republic of Crimea for 2014-2017 | | | | | | | | |
|-----|---|---------|---------|---------|---------|--|--|--|--|
| No. | | 2014 г. | 2015 г. | 2016 г. | 2017 г. | | | | |
| | Investment Environment Indicators | | | | | | | | |
| 1 | GRP | 0,7368 | 1,0345 | 1,2287 | 1,1821 | | | | |
| 2 | Volume of gross regional product per capita | 0,7409 | 1,0341 | 1,2250 | 1,1783 | | | | |
| 3 | The ratio of public debt to GRP | 2,7754 | 4,5491 | 0,4132 | 0,6399 | | | | |
| 4 | The number of crimes per 100.0 thousand people | 1,2690 | 0,8366 | 0,9835 | 1,0581 | | | | |
| | Aggregate indicator of Investment Environment | 5,5221 | 7,4543 | 3,8505 | 4,0583 | | | | |
| | Investment Resource Indicators | | | | | | | | |
| 1 | Investments in fixed assets | 0,5331 | 0,9592 | 1,5077 | 2,2705 | | | | |
| 2 | Investments in fixed assets to GRP | 0,5584 | 0,7156 | 0,9470 | 2,4154 | | | | |
| 3 | Volume of investments in fixed assets per capita | 0,5364 | 0,9594 | 1,5041 | 2,2667 | | | | |
| 4 | Coefficient of investment at the expense of own funds | 1,2189 | 1,2703 | 0,9027 | 0,3838 | | | | |
| 5 | The share of investment in fixed assets of foreign ownership | 0,3605 | 0,1666 | 0,1719 | 0,0600 | | | | |
| | Aggregate indicator of the dynamics of investment resources | 3,2073 | 4,0711 | 5,0335 | 7,3963 | | | | |
| | Integral indicator of investment security of the Republic of Crimea | 8,73 | 11,53 | 8,88 | 11,45 | | | | |

Source: calculated by the authors

It should be noted that the aggregate indicator of the

dynamics of investment resources has been constantly

increasing, which is explained, first of all, by the constant increase in investment in fixed assets of business entities of the Republic of Crimea. Dynamics of integrated indicators of investment security of the Republic of Crimea for 2014-2017 clearly displayed in Figure 22. The investment security of the Republic of Crimea was below the limit in 2014 and 2016, and higher in 2015 and 2017. The integral indicator was low in 2014 because the indicators characterizing the dynamics of investment resources in the Republic of Crimea were low, and the investment environment on the peninsula was low in 2016. Thus, the integral indicator of investment security fell below the standard in 2014 and 2016, because the influence of the indicators of the third group - indicators of the results of using investment resources, absent. The increase in the integral indicator of investment security in 2017 is due to an increase in investments in fixed assets in the Republic of Crimea during this period. The investment security of the Republic of Crimea is at a sufficient level in 2017.

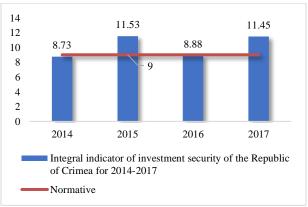


Figure 22: Dynamics of the integrated indicator of investment security of the Republic of Crimea for two groups of indicators in 2014-2017 (Source: compiled by the authors)

4 Conclusions

According to the annual rating of investment attractiveness of the regions of Russia, compiled by the National Rating Agency, the Republic of Crimea and Sevastopol entered the category of moderate investment attractiveness (IC9) in 2017.

To increase the investment attractiveness of the peninsula, a free economic zone introduced in Crimea. The most attractive for investors: resort and tourism, agriculture, construction, industry and the fuel and energy sector. In the Republic of Crimea, GRP increased, as well as the volume of investments in fixed assets in 2014-2017. The largest share in the structure of investments in fixed assets occupied by investments in buildings and structures. Relatively small amounts in the Republic of Crimea invested in housing. According to the analysis of indicators of investment security of the Republic of Crimea, the following conclusions made. First, the Crimean economy is growing; the debt burden on the economy of the region sharply increased and crime in 2016-2017 decreased. Second, investment in fixed assets increase, there is a decrease in the investment potential of the region from its own funds. Third, the region does not have enough foreign investment; there is a lack of investment in research. Fourth, there is a slowdown in the processes of capacity building and expansion of production, since the coefficients of renewal and retirement of fixed assets have decreased; fixed assets of the Republic of Crimea worn out and require updating. In each of the periods of the study, different problems observed, so the main problem of the region was the lack of investment resources in 2014, in 2015 - the indicators of the results of using investment resources were low, and in 2016 - the aggregate indicator of the investment environment was unsatisfactory. In 2017, the integral indicators of investment security were normal, but there remain problems associated with the presence of a large public debt of the Republic of Crimea, low volumes of own investment funds and foreign investment. The integral indicator of investment security of the Republic of Crimea was higher than the normative value in 2014-2016, which means that the investment security of the region in each of the analyzed periods was at the minimum necessary level. The integral values of the investment security of the Republic of Crimea calculated for the first two groups of indicators based on statistical data in 2014-2017. The integral indicator of investment security became lower than the norm in 2014 and 2016 because the influence of the indicators of the third group was absent. The integral indicator of investment security increased in 2017 because investments in fixed assets in the Republic of Crimea increased by more than 2.5 times during this period. In 2017, the investment security of the Republic of Crimea was at a sufficient level. Further research directed to the development of a mechanism for managing the investment security of the region under the conditions of sanctions.

Aknowledgment

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Ethical issue

Authors are aware of, and comply with, best practice in publication ethics specifically with regard to authorship (avoidance of guest authorship), dual submission, manipulation of figures, competing interests and compliance with policies on research ethics. Authors adhere to publication requirements that submitted work is original and has not been published elsewhere in any language.

Competing interests

The authors declare that there is no conflict of interest that would prejudice the impartiality of this scientific work.

Authors' contribution

All authors of this study have a complete contribution for data collection, data analyses and manuscript writing.

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