

Methodological Aspects of the Assessment of the Investment and Innovation Potential of a Region*



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Abstract. The relevance of the study is caused by the fact that the increase of the investment activity, which has remained low over the last few years, is a necessary condition for the transition of the country's economy to an innovative development path. It leads to the preservation of technological backwardness which conserves the structure of the economy with a low share of the knowledge-intensive sector. The interdependence and interconnectedness of investment and innovation processes allows us to review the investment and innovation potential as the basis of their development. While studying scientific papers, it was revealed that issues of content, structure, and the evaluation of this potential are debatable, and they require further comprehension. The purpose of this article is to develop methodological provisions

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for assessing the investment and innovation potential of the region. In the course of studying the works of domestic and foreign scientists, the authors of the article investigated approaches to determining innovation and investment potentials and methods of their assessment, clarified the content of investment and innovation potential, identified its structural elements, and proposed a methodological approach to its assessment, which allows establishing the relationship between used investment resources and the results of the innovation activity. During the study, we assessed the investment and innovation potential of Russian regions, identified problems of its formation and the usage, as well as trends that make it possible to determine the guidelines for the development of investment and innovation processes. The methodological basis of the research are the methods of system analysis and synthesis, comparison, generalization, grouping and statistical methods. The results of the study may be of practical interest for regional authorities' activities and the management in order to improve the effectiveness of investment and innovation processes. Theoretical generalizations, contained in the article, might be used as materials for the discussion in a scientific discourse.

Key words: investment and innovation processes, investment and innovation potential, assessment methodology, Russian regions.

Introduction

On the background of rapid technological changes in the global economy, increasing global and local crises, external and internal exports, Russia has no alternative to an innovative development path. Global experience shows that the achievement of highly competitive advantages and the results in the implementation of modernization processes largely depends on the effectiveness of the management of investment and innovation processes. It was also mentioned in the collective monograph of leading domestic economists. They pointed out that “innovation and investment sectors of the Russian economy need to be “reanimated”. The low level of innovation activity, insufficient investments into the structural reconstruction, and the lack of interaction between developers of new technological solutions and potential investors show it” [1, p. 4–5]. The interdependence of investment and innovation processes is determined by the fact that the main resource and the necessary condition for the innovation is the investment potential of the territory.

Therefore, the current Russian economy needs innovative investments that can provide a new quality of the economic growth. In this regard, we consider the authors' opinion [2] that the basis and the prerequisite for the development of investment and innovation processes is the investment and innovation potential, which has a significant impact on the balanced and sustainable development of the country and its certain regions, to be fair.

The basis for decision-making in the management of these processes should be the assessment of the investment and innovation potential of territories. It confirms the relevance of the research topic and defines the purpose of this article to develop methodological provisions for assessing the investment and innovation potential of the region. In order to complete the aim, we need to complete the following objectives: to conduct the comparative analysis of approaches toward the definition of the essence of “potential” concept, to clarify the content of the “investment and innovation potential” term and its structure,

to justify methodological provisions of its evaluation, which involves a staged assessment of the investment (resource) and the innovative (effective) potentials, to test methodological approach to the evaluation of investment and innovative potential on the basis of materials of the Russian Federation, and to interpret the results.

Theoretical basis of the research

The formation of the conceptual apparatus, used in the study of the investment and innovation development, occurred gradually as new categories and concepts entered the theory and practice of the economic science. However, let us note that the word “investment” has appeared since the beginning of commodity-money relations. In Latin (invest), it originally meant “to clothe”, and only later its meaning acquired the concept “invest into something”. As for the concept of “innovation”, it was first used by Y. Schumpeter, one of the founders of the theory of innovation [3]. These two key concepts became the basis for the formation of terms that reflect the entire set of features of investment and innovation processes. One of the first researchers to use the concept of “innovative potential” was K. Freeman [4], and the practical meaning of this concept was revealed by one of the classic scientists of management theory – P. Drucker, who pointed out that “the innovation begins with the analysis of the existing potential in order to use it effectively” [5]. The term “investment potential” appeared in Russia in the first half of the 1990s, when, along with the term “capital investments”, the lexicon of economists was expanded with the “investment” concept. The overview of scientific papers allowed us to identify the following approaches, the usage of which allowed the authors to justify their opinions on the content and structure of

studied potentials: resource, cost, resource-target, structural-institutional, effective, resource-effective, process, and functional. It is noticeable that most authors overview the term “potential” (as the investment and innovation) using three main approaches described below.

The resource approach, as the theoretical overview showed, is the most common, because it is related to the essence of the term “potential”. In this case, the investment potential is overviewed as an ordered set of resources, capital and other factors that ensure the implementation of investment activities by a market entity [6–8]. The innovation potential is described as an interconnected set of attracted resources, the integrated usage of which ensures effective innovation development of the territory’s economic entities [9–11].

The usage of the resource approach has its advantages, because, first, it is possible to assess the current situation of investment and innovation processes (identify strengths and weaknesses). Second, by linking main resource components of potentials with their characteristics and targets, it becomes possible to determine the direction of activation of investment and innovation processes in the future. However, it needs to be mentioned that the resource approach is more focused on extensive factors in the territorial development.

The effective approach allows showing and evaluating the set of resources involved in the process of the corresponding type of activity. The investment potential, in this case, is defined as the total income (result) received from attracting investment resources and implementing an investment project (projects) [12–14], and the innovation potential is defined as the effect (result) from the economic entities’ innovation activity as the result of using the territory’s own and attracted resources [15–17].

At the same time, we need to note that these definitions of the innovation potential are similar to the definition of “innovation” presented in the “Frascati Manual”¹.

The undoubted advantage of this approach is the opportunity to evaluate the results of investment and innovation activities. However, this approach has some disadvantages. First, the evaluation of the result without the aggregation of used resources does not allow comparing territories with each other. Second, with this approach, it is difficult to determine the path of the territory’s development (extensive or intensive).

The resource-effective approach links resource and effective characteristics of the potential and shows the ability (readiness) of a territory (in this context, we refer to the socio-economic system of a region or municipality) to implement the effective investment and innovation activity. In this regard, we are talking about used and unused (hidden) resource opportunities that can be put into action to achieve final aims of these processes’ participants. From this point of view, in the territorial aspect, the investment potential is the ability of the regional investment system to implement opportunities, contained in its investment resources, in order to achieve a positive maximum result (effect) [18–20]; the innovation potential is a set of opportunities that ensure the maximum ability of the region to independently create, replicate, and use innovations [21–23].

Each of presented approaches is associated with the solution of certain tasks, but, as it seems, the resource-effective approach, which allows estimating the resource component and the result, gives the possibility to determine directions and methods of the studied processes’

¹ *Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data*. 3rd edition. OECD, 2005.

activation by establishing the interconnection between the resource and productive factors.

Currently, the experience of several Russian regions and foreign countries has convincingly shown that the basis for sustainable balanced socio-economic development of territories is the innovation, the introduction and the dissemination of which is impossible without relying on investment resources. The statement that the investment is a necessary condition and the main source of the innovation has been the leitmotif of domestic and foreign scientists’ studies for many decades. Thus, at the beginning of the 20th century, J. Schumpeter in [3] concluded that the investment is a necessary factor of the economic development, and, at the beginning of the 21st century, Yu. V. Yakovets in his work [24], emphasizing the “organic unity of two economic categories”, pointed out that “the investment without the innovation is almost a complete loss of competitiveness of goods and markets”.

The interdependence of these processes is reflected in the usage of the term “investment and innovation development” in the scientific literature. It allows us to suggest that the basis of this process is the investment and innovation potential. This term, which appeared at the beginning of the 21st century, reflects the objectively existing connection between investment and innovation potentials, which determines their synthesis. As noted before, there are different approaches to determining investment and innovation potentials, but the term “investment and innovation potential”, its components, and methods of assessment require further comprehension.

During the theoretical analysis, it was revealed that this concept is the subject of the discussion in scientific works of domestic researchers [2,25,26,27,28,29, etc.]. However, as the literature overview shows, not every

author, studying this most important characteristic of the socio-economic system, tries to determine the essence of this potential. Still, it is important to note that the works of these authors provide the justification of the structure of the studied concept and a set of indicators of its evaluation.

In this regard, the works that present opinions on the content of the investment and innovation potential are of interest. Thus, in [26], this potential is defined as “the total potential of the socio-economic system of a region, which ensures the long-term development of innovation and investment activities, formed by the systematic usage of all types of resources”. The author suggests indicators for assessing the potential, which, as we see it, do not fully take into account investment resources needed to activate innovation. The authors of the article [2] point out that the investment and innovation potential is “the combined ability of a region’s socio-economic system to ensure the development of innovation and investment areas for purposes and scope defined by economic policy, which is determined by the resource component”. This work is focused on factors that affect components of the potential, but indicators for its assessment are not proposed. A slightly different content of the studied concept is presented in [27], where “the investment and innovation potential is a set of priority development directions in the field of creating and using innovative goods and services, produced in a region over a certain period of time, and identified sectors of the economy with the greatest opportunities to attract investments and innovations, which create a favorable investment climate”. The author recommends determining the most effective potential investment objects, which, in our opinion, is more consistent with the assessment of investment attractiveness.

It is noteworthy that, by determining the content of the studied potential, the authors [2,26] rely on the resource-efficient approach. We believe that this approach, which is the basis for determining the investment and innovation potential, allows us to identify the interconnection between innovation and investment processes and to determine the structure of the potential, reflecting the resource component and the effectiveness of its usage.

In this regard, we would like to clarify the content of the term “investment and innovation potential” by once again referring to definitions of the “potential” concept. Considering the multi-aspect nature of this concept, we have established that, while revealing the content of this concept, presented in scientific works of domestic researchers, the attention is paid to following aspects:

- ✓ potential – as a set of resources necessary for the implementation of certain processes (Zhic G.I., Tumusov F.S., Jankovskij K.P., et al.);

- ✓ potential – as the ability of a system to provide the best possible result (Andrianov D.S., Vasjuhin O.V., Nikolaev A.I., Monastyryj E.A., Fedotkina O.P., et al.);

- ✓ potential – as a measure of readiness to implement set aims (Barancheev V.P., Porshnev A.G., Rumjance A.A., Fridljanov V.N., et al.).

The aforementioned allowed the authors to present their visions of the content of the investment-innovation potential and to clarify its wording *as the ability of a regional system to implement features, defined by the availability of investment resources, in order to achieve the maximum positive impact of innovation and investment activities.*

The comprehension of the essence of the investment and innovation potential determines the approach to its measurement and evaluation, the results of which may become

an informational basis for decision-making aimed at activating investment and innovation processes.

Methodological basis of the research

Taking into account the authors' opinion on the essence of the investment and innovation potential, we assume that the methodology of its assessment should be based on the staged measurement of investment and innovation potentials. Its comparison will allow lowering the level of a region's capacity to implement opportunities, defined by investment resources, providing the achievement of the results of investment and innovation processes that meet aims of the development. The basis of the assessment consists of the following principles of

determinism, the availability and the reliability of information, the compliance and the complexity.

While studying the scientific literature, it was defined that there is a wide range of opinions on the structure of investment and innovation potentials, which are summarized in *tables 1 and 2*. These opinions are in the focus of the scientific community's discussion.

Considering the content of tables, we should note that the author's approaches primarily differ in the following points:

- the degree of detail of allocated potentials;
- the number, meaningful characteristics and applicable indicators for the assessment of private potentials;
- sources of used information.

Table 1. The structure of the region's investment potential (within private potentials)

Authors	Types of private potentials
Asaul A.N., Pasjada N.I.	Natural and geographical potential. Labor potential. Production potential. Innovation potential. Institutional potential. Infrastructure potential. Financial potential. Consumer potential.
Bereznev S.V., Sheveleva O.B., Nacheva M.K.	Natural resource potential. Production potential. Financial potential. Labor potential. Innovation potential. Infrastructure potential. Institutional potential. Consumer potential.
Golajdo I.M.	Resource and raw material potential. Financial potential. Production potential. Export potential. Innovation potential. Political potential. Consumer potential. Environmental potential. Intellectual potential. Social potential. Infrastructure potential.
Grishina I.V.	Natural and geographical potential. Production and financial potential. Social potential.
Sheveleva O.B., Nacheva M.K.	Natural and geographical potential. Production potential. Financial potential. Innovation potential. Infrastructure potential. Social potential.
Capo I.P., Savel'eva I.P.	Financial potential. Economic potential. Social potential.
Source: own compilation [18, 30].	

Table 2. The structure of the region's innovation potential (within private potentials)

Authors	Types of private potentials
Kasataja I. L.	Personnel potential. Organizational potential. Material and technical potential. Information potential. Management potential. Financial potential. Scientific and technical potential.
Kokurin D. I.	Resource potential. Efficient potential. Internal potential.
Lisin B. K., Fridljanov V. N.	The reserve of scientific and technical (technological) own and acquired developments and inventions. The state of infrastructure capabilities of enterprises. External and internal factors. The level of the innovation culture.
Matvejkin V. G.	Material and technical potential. Information potential. Financial potential. Human potential. Potential of state support. Infrastructure potential.
Trifilova A.A.	Innovation-oriented departments. Professional staff. Financial resources. Material and technical equipment. Intellectual property.
Shevchenko I. V.	The achieved level of scientific and technical development. Institutional component. Innovation infrastructure. Personnel component. Internal and external environment conditions.
Source: own compilation [31].	

On the basis of domestic scientists' studies, investment and innovation potential (within conducted in different periods, and afore- private potentials) and the list of basic indicators mentioned principles, the structure of the were determined (*Tab. 3 and 4*).

Table 3. Indicators for assessing the region's investment potential (resource component)

Private potentials	Indicators	Characteristics of private potential
Labor potential	<ul style="list-style-type: none"> – the share of employees in a region in the total number of employees in the country, in %; – the level of participation in the population's labor force at the age of 15–72, in %; – the share of employed population with higher and secondary vocational education, in %; 	describes the territory's potential in attracting labor resources, including highly qualified ones, to participate in the reproduction process;
Production potential	<ul style="list-style-type: none"> – volume of industrial products per capita, thousand rubles; – volume of agricultural products per capita, thousand rubles; – volume of construction works per capita, thousand rubles; 	describes potential opportunities of the economic activity of business structures and the territory's population as the basis of the investment process;
Material and technical potential	<ul style="list-style-type: none"> – the share of fixed assets of the region's organizations to the total value of fixed assets in the country, in %; – fund availability of the region's organizations, thousand rubles / person; – deterioration coefficient of fixed assets in the region's organizations, in %; 	describes potential opportunities of material and technical basis of the region's organizations for the implementation of the investment and innovation activity;
Financial potential	<ul style="list-style-type: none"> – the amount of the balance financial result per capita, thousand rubles; – the region's consolidated budget per capita revenues, thousand rubles; – average per capita income of the region's population, thousand rubles. 	describes potential opportunities of a region in attracting financial resources, which might be included in the investment and innovation process.
Source: own compilation.		

Table 4. Indicators for assessing the region's innovation potential (efficient component)

Private potentials	Indicators	Characteristics of private potential
Educational potential	<ul style="list-style-type: none"> – the number of personnel engaged in research and development per 10 thousand people of the population; – the number of researchers with academic degrees per 10 thousand population; – the number of students engaged in bachelor, specialist, master's programs per 10 thousand people of the population 	Characterizes the result which shows the number of highly qualified specialists for the activation of innovation activities;
Scientific and technical potential	<ul style="list-style-type: none"> – the share of the volume of innovative goods, works, services in the total volume of shipped goods, performed works, services, in %; – innovation activity of organizations, in %; – developed advanced production technologies for 10 thousand people of the population 	Characterizes the result shown in the creation of innovative products and technologies that ensure the region's development;
Information and communication potential	<ul style="list-style-type: none"> – the usage of information and communication technologies in organizations, in %; – the share of organizations that used special software tools in the total number of studied organizations (science, design, training), in %; – the share of households with broadband Internet connection, in % 	Characterizes the result showing the formation of the information and communication environment;
Financial potential	<ul style="list-style-type: none"> – internal research and development costs to GRP, in %; – information and communication technology costs to GRP, in %; – costs for technological innovations, in % from the total volume of shipped goods, performed works, and services. 	Characterizes the result that shows financial possibilities of the innovation activity's activation.
Source: own compilation.		

While justifying private potentials, the authors proceeded from the following:

1) the structure of the investment potential highlights the most important investment resources that largely determine the investment activity of the region;

2) the structure of the innovation potential indicates key results of the innovation activity, which are the guidelines for the innovation development in relevant strategic documents;

3) the number of private potentials, taking into account included indicators, allows conducting the comprehensive assessment of the studied process on the basis of state statistics data and making the acquisition and the interpretation of the results available.

The selection of methodological approaches has an important role in the assessment of the investment and innovation potential in the territorial aspect. The conducted review of methods of Russian and foreign authors showed that the definition of investment and innovation potentials of a region is carried out using one out of six main approaches that have unique specific techniques and methods: the assessment of a universal indicator, rating, integral, factor, cluster, and matrix approaches [32–48].

Taking into account advantages and disadvantages of these approaches, we suggest using an approach that combines advantages of integral and matrix approaches for the assessment of the regions' investment and innovation potential. The combination of these approaches allows:

✓ forming integral indicators of investment and innovation potentials by aggregating private potentials;

✓ assessing the potential of the investment and innovation development of a territory (availability of investment resources and results of innovation activities);

✓ defining the position, which shows the interconnection between investment resources and the results of the innovation activity, of each region by constructing the matrix with coordinates “the level of the investment potential – the level of the innovation potential”;

✓ conducting the typology of regions in order to identify problems of the investment and innovative development of territories and to justify key directions of its activation.

The proposed approach is universal and comprehensive. It is possible to use it on any territory and to solve sets of interconnected tasks.

The algorithm for evaluating the investment and innovation potential based on the proposed approach is based on the sequential measurement of the investment and innovation potential of territories and the construction of a final matrix which links the resource and performance components together. It includes three stages: preparatory, analytical, and final.

1. The main goal of the *preparatory stage* is to create the informational basis for evaluating investment and innovation potentials. In order to do this, the selection and justification of indicators for evaluating corresponding private potentials is carried out. After it, the maximum value, which is taken as a standard and equal to one, is determined for each indicator. Remaining indicators are recalculated in shares from one through the division of these indicators by the benchmark one. Thus, the matrix of standardized coefficients is formed.

$$Y_{ij} = \frac{x_{ij}}{x_{maxj}}, \quad (1)$$

where Y_{ij} – a standardized coefficient of j -private potential in i -region;

x_{ij} – value of indicator of j -private potential in i -region;

x_{maxj} – maximum value of the indicator of j -private potential in the entire set of regions.

After it, a basis of initial information is formed in the form of standardized indicators (from 0 to 1) for measuring the investment and innovation potential of each region (within indicators of private potentials).

2. *The second stage* includes the assessment and the analysis of the level of the investment and innovation potential of regions (on the basis of private potentials) in accordance with formed information basis of the research. In order to do this, it is necessary to identify the level of private potentials for each region. It requires squaring of all elements of the matrix of standardized coefficients in order to determine the integral indicator of the private potential (I_{ij}). The resulting values are multiplied by the weight coefficients of indicators, after which the results are added in rows, and the square root is extracted from the resulting sum:

$$I_{ij} = \sqrt{\sum Y_{ij} \times k_{ij}}, \tag{2}$$

where k_{ij} – weight coefficient of j -private potential in i -region. During the formation, I_{ij} weight coefficients for each indicator were equal to one.

In order to define the investment potential ($I_{invest.}$), values of private potentials are summarized for each region:

$$I_{invest.} = \sum I_{ij} \times k_j, \tag{3}$$

where k_j – weight coefficient of j -private potential. During the formation of $I_{invest.}$, weight coefficients for each indicator were equal to 1.

The same procedure was used in order to determine the level of the innovation potential:

$$I_{innov.} = \sum I_{ij} \times k_j, \tag{4}$$

where k_j – weight coefficient of j -private potential. During the formation of $I_{innov.}$, weight coefficients for each indicator were equal to 1.

3. *The final stage includes the following.* First, the grouping of regions is carried out according to the level of investment and innovation potentials. In accordance with acquired values of $I_{invest.}$ and $I_{innov.}$, regions are divided into several groups: with high, medium, and low levels of the potential. The value of the interval (Int) for regions' grouping is determined according to the formula:

$$Int = \frac{I_{invest.max} - I_{invest.min}}{n},$$

$$Int = \frac{I_{innov.max} - I_{innov.min}}{n}, \tag{5}$$

where $I_{invest.max}$ – the maximum value of the investment potential according to the aggregate of analyzed regions;

$I_{invest.min}$ – the minimum value of the investment potential according to the aggregate of analyzed regions;

$I_{innov.max}$ – the maximum value of the innovation potential according to the aggregate of analyzed regions;

$I_{innov.min}$ – the minimum value of the innovation potential according to the aggregate of analyzed regions;

n – the number of formed groups according to the level of the investment potential.

After it, the matrix is formed. In it, each region occupies a certain position, which shows levels of the investment and innovation potential (*Tab. 5*).

Table 5. The matrix of the regions' investment and innovation potential

Level of the innovation potential	Level of the investment potential		
	High	Medium	Low
High	Group 1	Group 4	Group 7
Medium	Group 2	Group 5	Group 8
Low	Group 3	Group 6	Group 9

As we can see in this matrix, it is possible to form the following groups of regions.

Groups 1, 2, 4 (“Leaders”) – regions with high and (or) medium investment and innovation potential. These territories have necessary investment resources, the efficient usage of which allows achieving certain results in the innovation activity.

Group 5 (“Middle ones”) – regions with medium investment and innovation potential. These territories have good capabilities in general, but the insufficient level of some private potentials may lead to the deterioration of certain results of the innovation process.

Groups 3, 6, 7, 8 (“Problematic ones”) – regions (groups 7 and 8) with low investment potential, the lack of which may cause the decrease of the innovation activity and the loss of competitive positions in the future; regions (group 3 and 6) with low innovation potential inefficiently use available investment resources, withdrawing it from the innovation sector of the economy.

Group 9 (“Crisis regions”) – regions with low levels of investment and innovation potentials, which significantly limits capabilities of territories to activate investment and innovation processes.

The typology of regions within “the level of the investment potential – the level of the innovation potential” coordinates allows revealing interconnections of mentioned potentials and defining main directions of regional strategies concerning the investment and innovation development taking into account territorial and sectoral aspects.

Results of the research

In accordance with the proposed algorithm, the assessment of the investment and innovation potential of Russian regions was conducted. The informational basis of it was the usage of the official data of the Russian Federal State Statistics Service. In 2013–2017, the number of studied regions was 80 (the sample did not

consider data of Sevastopol and the Republic of Crimea due to the lack of data for 2012–2014 period).

During the measurement and the assessment of the investment potential, the following trends were identified:

- ✓ the territorial structure of the investment potential has not changed dramatically during the study, and the investment activity remains low in most Russian regions;

- ✓ among private potentials, included in the investment potential, the financial potential has a pronounced asymmetric nature, which indicates a very insufficient financial basis for the technological renewal of economies in most regions;

- ✓ the following factors have a significant impact on the formation of the investment potential: the availability of fields of fuel and ore resources, the degree of the economic diversification, the development level of social and transport infrastructure.

The assessment of the innovative potential showed the following results:

- ✓ more than a half of Russian regions are characterized by low efficiency of innovation activities. Main reasons of it are insufficient investment resources and low efficiency of state participation in the regulation of investment and innovation processes;

- ✓ among the factors that define territorial features of the innovation potential, the following ones should be indicated: the level of the development of the educational and research institutions network, the availability of scientific schools in a region, the demand for innovation products among domestic manufacturers, the level of the commercialization of developments, the degree of the development of the innovation infrastructure, financial resources and public policy.

The final stage included the summary assessment of Russian regions’ investment and innovation potential (*Tab. 6 and 7*).

Table 6. Matrix of the investment and innovative potential of Russian regions (for 2013)

		Level of the investment potential		
		High	Medium	Low
Level of the innovation potential	High	Moscow (group 1)	Saint-Petersburg (group 4)	Nizhegorod Oblast (group 7)
	Medium	Chukotka Autonomous Okrug (group 2)	Magadan Oblast Kamchatka Krai Krasnodar Krai Moscow Oblast Republic of Tatarstan (group 5)	Tomsk Oblast; Kaluga Oblast; Leningrad Oblast; Khabarovsk Krai; Novosibirsk Oblast; Yaroslavl Oblast; Ulyanovsk Oblast; Chelyabinsk Oblast; Chuvash Republic; Samara Oblast; Krasnoyarsk Krai; Sverdlovsk Oblast; Penza Oblast; Republic of Mordovia; Perm Oblast; Voronezh Oblast; Murmansk Oblast; Republic of Bashkortostan; Primorsky Krai; Arkhangelsk Oblast; (group 8)
	Low	Tyumen Oblast Sakhalin Oblast (group 3)	Belgorod Oblast Sakha Republic (Yakutia) Amur Oblast Komi Republic (group 6)	Omsk Oblast; Rostov Oblast; Lipetsk Oblast; Stavropol Krai; Kursk Oblast; Udmurt Republic; Ryazan Oblast; Irkutsk Oblast; Vladimir Oblast; Tula Oblast; Volgograd Oblast; Astrakhan Oblast; Republic of Karelia; Orenburg Oblast; Tver Oblast; Altai Republic; Saratov Oblast; Smolensk Oblast; Ivanovo Oblast; Novgorod Oblast; Oryol Oblast; Kirov Oblast; Republic of Adygea; Republic of Dagestan; Republic of Buryatia; Kurgan Oblast; Altai Krai; Republic of North Ossetia – Alania; Jewish Autonomous Oblast; Mari El Republic; Kaliningrad Oblast; Tambov Oblast; Bryansk Oblast; Kabardino-Balkarian Republic; Republic of Khakassia; Vologda Oblast ; Kemerovo Oblast; Kostroma Oblast; Pskov Oblast; Zabaykalsky Krai; Republic of Kalmykia; Karachay-Cherkess Republic; Tyva Republic; Chechen Republic; Republic of Ingushetia; (group 9)
Source: own compilation.				

Table 7. Matrix of the investment and innovative potential of Russian regions (for 2017)

		Level of the investment potential		
		High	Medium	Low
Level of the innovation potential	High	Moscow (group 1)	Saint-Petersburg Republic of Tatarstan Moscow Oblast (group 4)	Nizhegorod Oblast Tomsk Oblast (group 7)
	Medium	— (group 2)	Belgorod Oblast Lipetsk Oblast Krasnodar Krai Kursk Oblast (group 5)	Penza Oblast; Chuvash Republic; Kaluga Oblast; Republic of Kalmykia; Ulyanovsk Oblast; Khabarovsk Krai; Novosibirsk Oblast; Voronezh Oblast; Sverdlovsk Oblast; Chelyabinsk Oblast; Yaroslavl Oblast; Omsk Oblast; Tambov Oblast; Rostov Oblast; Tula Oblast; Republic of Mordovia; Perm Krai; Samara Oblast; Ryazan Oblast; (group 8)
	Low	— (group 3)	Kamchatka Krai Leningrad Oblast Krasnoyarsk Krai Kaliningrad Oblast Sakha Republic (Yakutia) Amur Oblast Murmansk Oblast Komi Republic Magadan Oblast Vologda Oblast (group 6)	Novgorod Oblast; Vladimir Oblast; Republic of Bashkortostan; Orenburg Oblast; Tver Oblast; Stavropol Oblast; Kirov Oblast; Oryol Oblast; Udmurt Republic; Astrakhan Oblast Altai Krai; Primorsky Krai; Mari El Republic; Irkutsk Oblast; Smolensk Oblast; Republic of Adygea; Saratov Oblast; Republic of Karelia; Republic of North Ossetia – Alania; Bryansk Oblast; Ivanovo Oblast; Republic of Buryatia; Volgograd Oblast; Karachay-Cherkess Republic; Altai Republic; Arkhangelsk Oblast; Kemerovo Oblast; Pskov Oblast; Kostroma Oblast; Kabardino- Balkarian Republic; Zabaykalsky Krai; Jewish Autonomous Oblast; Republic of Khakassia; Kurgan Oblast; Tyva Republic; Republic of Ingushetia; Republic of Dagestan; Chechen Republic; (group 9)
Source: own compilation.				

The analysis of data, represented in matrices, allowed us to reveal several trends which show changes in the territorial structure of the investment and innovation potential in the studied period:

- 1) The positive fact is the decrease of the group of crisis and problematic regions. However, collectively, these groups remain quite significant.
- 2) There were some movements between groups of regions, related to the improvement

and the deterioration of positions. It should be noted that 12 Russian regions increased their indicators of the innovation activity, but the number of regions did the opposite (these are territories with a high share of extractive industries and first-redevelopment sectors in the economy). However, most regions retained their positions in certain groups.

3) It is important to note that significant differences in the parameters of the investment and innovation development between groups of regions remain. It is a serious obstacle to the formation of the new technological order.

On the basis of the results of the grouping of Russian entities, presented on the matrix (Tab. 6 and 7), we defined main guidelines for the investment and innovation development for each of these groups.

1. Groups 1, 2, 4, (“Leaders”). The availability of necessary investment resources and the relatively high efficiency of the innovation process determine the position of these entities as growth poles of the national economy. They determine the vector of the investment and innovation development of Russian regions. The implementation of this function should involve the extension of the cooperation between regions through wider usage of development institutes. It will certainly contribute to the diffusion of innovations and to the strengthening of the integrity of the socio-economic space.

2. Group 5 (“Middle ones”). Regions of this groups have the high level of the economy diversification, comfort living conditions for population, which is a great prerequisite for the strengthening and the extension of investment resources and the increase of the efficiency of its usage for the activation of innovation processes. In order to do this, it is necessary to focus on the development of the material and technical potential, which will lead to the strengthening of the positions of production and

financial potentials, and it will create necessary prerequisites for improving the efficiency of the innovation process.

3. Groups 7, 8 (“Problematic ones”). These are innovation active territories, most of which are leading scientific and research centers of the RF, and sectors of specialization are mechanical engineering, metalworking, and petrochemical industries, which, as world experience shows, are focused on the application of product and process innovations. To improve positions in the innovation process, it is necessary to increase investment resources in all private potentials by expanding the practice of public-private partnership, project financing, and strengthening interaction between business and scientific and educational organizations.

4. Groups 3, 6 (“Problematic ones”). In this group, there are territories with a clear raw material component in the economy’s structure and regions with more diversified household structure. At the same time, most of these territories have a certain investment attraction. Therefore, it is necessary to use this factor more efficiently, actively supporting the state’s investments in innovation technologies through promoting the development of small enterprises in the innovation sphere and in sectors of social infrastructure, as well as the formation of clusters with the participation of scientific institutions and universities.

5. Group 9 (“Crisis ones”). This is the largest and most diverse group of regions in terms of many socio-economic characteristics. For regions of this group to improve their positions, the state must support them: primarily, in the development of social and industrial infrastructure. This will strengthen private investment potentials, increase its investment attractiveness, which will contribute to a more active dissemination of innovations.

Discussion and results

In conclusion, we would like to note that, in the environment of fierce competition on many global markets, the maintenance of a solid position becomes possible through achieving high results in the innovation sphere, the development of which requires significant investment resources. This was the basis for the authors' participation in the scientific discussion on the issues of content, structure, and the evaluation of the concept, which appears more frequently in scientific studies – the investment and innovation potential.

For the development of methodological provisions for assessing the investment and innovation potential, the authors justified the relevance of the usage of this concept, clarified its content, and presented their opinion on the structure of the studied concept. These ideas became the basis for the development of the methodological approach to the assessment of the investment and innovation potential, a distinctive feature of which is not only the capability to assess the investment resources of the territory, but also the result of the innovation process obtained from these resources' usage.

In addition, the results of the assessment allow conducting a typological grouping of territories and their ranking, observing changes of regions' positions in dynamics, and justifying key directions of the activation of studied processes. The test of the methodological approach on the example of Russian regions showed limited investment opportunities of many entities of the Russian Federation in achieving high innovation results.

During the research of the investment and innovation potential of Russian regions, the authors argued its importance as an objective basis for the formation of strategic decisions to ensure sustainable socio-economic development of territories. The results of the research contribute to the development of theoretical science, which includes the development of research methodology for the investment and innovation potential. The practical significance of the work is caused by the possibility to use the proposed approach in activities of authorities and in the region's management in order to solve the problem of increasing the investment and innovation activity.

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