

Prospective Mechanisms of Peripheral Areas Investment and Innovation Potential Formation

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Abstract

In this study conducted a comprehensive study of investment and innovation processes in conjunction with the problems of balanced economic development mesa-level, modify the basic economic proportions and the speaker on the one hand, the factor, and the other - the result of a regional self-development and interregional cooperation, is of particular relevance is the backbone target benchmark regional social and economic policy. A very need innovation-oriented development of the regional investment potential of paramount importance for Russia as a whole, and for its regional components, the prospects of dynamic development which largely involve the presence of an effective, articulating the functional components and hierarchical levels, the mechanism of activation of innovation-oriented investment and support of innovative activity of economic entities. Last in the current economic realities becomes as important competitive advantage and sustainable operation of the main factors of economic and reproductive system of the region. The effectiveness of the efforts and actions towards the formation of a favorable investment environment and innovative qualities of the regional economy, which are understood as its ability to self-renew, change adaptation and generation of scientific and technological progress, sustainable development, production and maintenance of its competitiveness in the long term, depends not only on the available resource capabilities as the availability and effectiveness of regional investment mechanism regulating and coordinating the development of innovative sphere of the region.

Keywords: peripheral areas, prospective mechanisms, investment and innovation potential, region

1. Introduction

Differentiation of the innovation potential and the associated disparity focusing on the innovation investments can be traced both globally and on a national scale. Received the results of this evaluation confirm the fact that in a substantial regionalization of the national economy, meaning the absolute importance of regional determinants in the development of an innovation-oriented regional investment policy is necessary to develop mechanisms aimed at creating conditions to ensure effective and practical cooperation between scientific, technological and innovative sector with the sphere of production and other spheres of life.

The main reasons that cause the contradiction between having a sufficiently high investment and innovation potential of individual peripheral areas of the country and the results of their use of the conjugate are imperfect mechanism for commercialization of intellectual property; lack of legislative and legal framework of innovation and investment de yours elf; the low social status of a research scientist, entrepreneur, innovator; absence of significant incentives for innovation financing; often non-market management in science and technology, and poor knowledge of the majority of managers based on innovative economic development of the region; undeveloped incentives for banks to participate in financing innovation and insurance risks of investment and innovation; low level of information and advisory system for participants in the innovation process in the peripheral areas, and others. In other words, the lack of adequate modern realities of management methods and mechanisms of innovation-oriented investment activity in its geographically localized forms is one of the major reasons for the instability of innovation and economic development in general and persistent imbalances in the regions of Russia.

2. Subject

Subjects of the research are the prospective mechanisms of peripheral areas investment and innovation potential formation.

3. Materials and Methods

The emergence of an innovative economy has led to an explosive growth of disparities in terms of innovation-oriented investments between the different regions of the world economy, among the major subjects of the Russian Federation and the rest of the territory. Therefore, one of the most important problems of scientific and inventive and innovative activity, scientists believe its uneven distribution of the leading countries and territorial disparities within countries. High-income countries, which are home to 15.6% of the population is concentrated at the overwhelming majority of scientific and inventive capacity (92.4% of patent applications) and assign almost all (98.5%) intellectual quasi-rents. The leaders here are North American, Western European and Japanese civilization; in low-income countries (40.9% of the population) accounted for only 0.8% of applications and 0.04% of license revenues (Feabhra, 2013).

The evaluation of financial and investment potential of the area can be used for gross savings in the region, which reflects the financial resources of the area for innovation and investment. However, not all savings are directed to innovation and investment. In their structure already contains the volume of gross fixed capital formation, which should in future be excluded from the calculation. Net savings represent the difference between gross savings and consumption of fixed capital. Thus, at the regional level, the value of gross savings is calculated using the following formula: = gross saving GRP - final consumption. The formula for calculating net savings is as follows: net savings = gross savings - gross fixed capital formation (Kelly and McGuinness, 2013).

For comparative analysis of peripheral areas in terms of development potential, and comparability of the data, the proposed indicators of gross and net savings estimate per capita. The net savings in the Southern Federal District of the Russian Federation in the period from 2007 to 2013 is presented in Table 1.

Table 1. The net savings in the Southern Federal District of the Russian Federation in the period from 2007 to 2013

Year	Republic Adygea	Republic Kalmykia	Krasnodar Region	Astrakhan Region	Volgograd Region	Rostov Region
2007	-11 925	-12 194	-16360	-7 734	-821	-21 578
2008	-12 141	-19039	-19389	-16 099	5 430	-28 621
2009	-21 070	-18573	-32576	-41 302	3 819	-37 616
2010	-37 430	-20624	-53 482	-39 854	4 540	-54 013
2011	-50 843	-21333	-69444	-61 191	-17 141	-50 073
2012	-37 093	-21248	-38 999	-49 202	2 983	-27 257
2013	-19 217	-5 608	-1 999	-24 131	28 779	-2 885

Referring to the data in Table 1, we note that among the peripheral areas of the Southern Federal District of positive net savings per capita was observed only in the Volgograd region in 2009, 2010, 2011, 2012 and 2013. Innovative potential of the peripheral areas seems appropriate to assess from a position of influence on his development factors, namely: technical and technological, development of human factors, institutional, organizational and informational factors, each of which consists of several indicators (Hawley et al., 2010).

For each of the factors evaluated following indicators: for technical and technological factors: domestic expenditure on research and development; receipt of patent applications and issue of security documents; Number of advanced production technologies; number of technologies used; the costs of technological innovation; for the development of the human factor: the number of personnel engaged in research and development; Number of researchers with academic degrees; admission and graduation from graduate school; admission and graduation of doctoral studies; for institutional factors: the presence of the development strategy of innovation at the regional level; regulations in the field of innovation; concept development program of innovation at the regional level; for organizational factors: the number of organizations engaged in research and development; organizations conducting training of doctoral students; innovative activity of organizations; the volume of innovative goods, works and services; technology transfer centers and business incubators; Information for factors: the availability of information on innovative projects to potential investors in the public domain; organizations that have a web site; Number of organizations used special software.

Each indicator is assigned hierarchical ratings, which are then summed in the calculation of the overall ranking of the region. For each indicator, with (i - serial number of the index) the average value (Formula 1).

$$C_i = \frac{\sum_{j=1}^n C_{ij}}{n} \tag{1}$$

where C_{ij} - i-th value of the index for the j-th region; n - number of subjects (regions).

Area changes the i-th index [C_{ijmin} , C_{ijmax}] was divided into n intervals. The first indicator has a rating value $r_{min} = 1$, and the last - $r_{mx} = M$ (M - maximum rating). The calculations show that for the calculation of the function $r_i = f(C_j)$ was enough to seven intervals, that is $r_{max} = 6$. As a result of the conversion of indicators, derived matrix corresponding private ratings r_i , in which speakers are rating distribution of the peripheral area on various parameters and the rows - the distribution of this ranking for time-personal regions. Each subsystem level characterized rated R, (I - subsystem number (I = 1, ..., 5)):

$$R_{ij} = \sum_{i=1}^k r_{ij} \tag{2}$$

Where k - the number of indicators characterizing the block model. Thus, the innovative potential of the peripheral area has the following analytical expression for the overall rating:

$$R_j = R_t + R_h + R_{Ins} + R_O + R_{Inf} \tag{3}$$

where R_t , R_h , R_{Ins} , R_O , R_{Inf} - ratings subsystems: technical and technological, human, institutional, organizational and informational factors, respectively. As a numeric expression, then (3) defines the level of development of the investment potential for any region.

The innovative capacity of peripheral areas in the Southern Federal District from 2005 to 2011 is characterized by the following data (Figure 2).

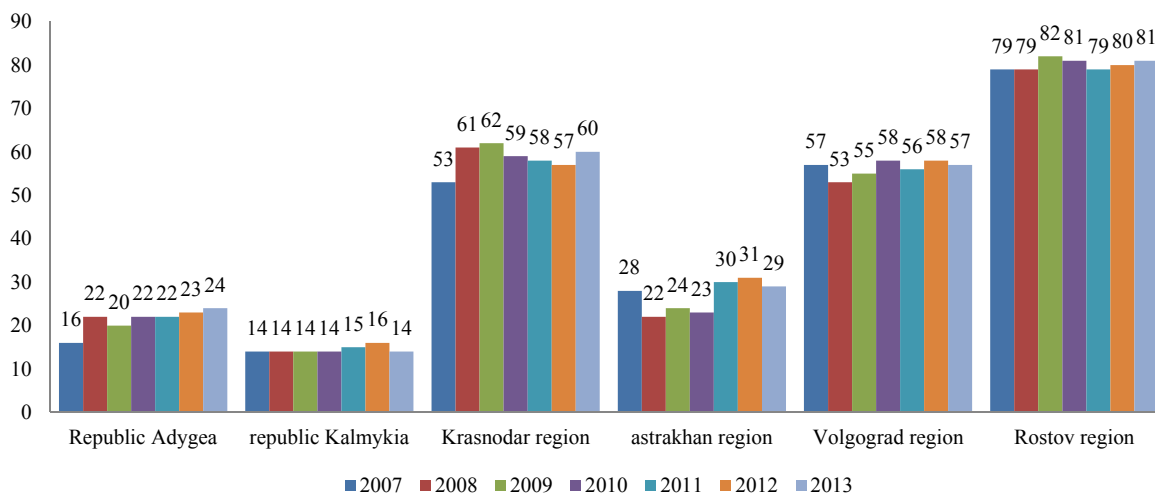


Figure 2. Dynamics of the innovative capacity of the peripheral areas of the Southern Federal District in 2009-2013 (Popkova & Tinyakova, 2013a)

Foremost among peripheral territories SFD is the development of innovative potential of Rostov region (in 2013 - 81 points), followed by Krasnodar region (in 2013 - 60 points) and the Volgograd region (in 2013 - 57 points). Astrakhan region is in fourth place (in 2013 - 29 points), followed by the Republic of Adygea (in 2013 - 24 points) and the Republic of Kalmykia (in 2013 - 14 points). Based on the previously submitted dividing the peripheral areas on donors, recipients and potentially self-sufficient in the territory of the Southern Federal District subjects was as follows (Table 2).

Table 2. Types of peripheral areas of the Southern Federal District of the Russian Federation for 2007-2013 (Popkova & Tinyakova, 2013b)

Region	2007	2008	2009	2010	2011	2012	2013
Republic of Adygea	-	-	-	-	-	-	-
Republic of Kalmykia	-	-	-	-	-	-	-
Krasnodar region	r*	r	r	r	r	r	r
Astrakhan region	-	-	-	-	-	-	-
Volgograd region	r	**s	s	s	r	s	s
Rostov region	r	r	r	r	r	r	r

* r - recipient region; ** s - potentially self-sufficient region.

Recipient regions are the Krasnodar Territory and Rostov Region, as well as the Volgograd region (in 2009, 2011.). For these peripheral areas characterized by a high level of development of innovative potential and a low value of financial and investment potential. Such a combination is useful when potential direct financial resources (borrowing them from other regions of the donor) on the implementation of specific innovation projects. Donor regions should send the available financial and investment potential for the creation of innovative potential, and only then to the implementation of specific innovation projects. Potentially self-sufficient peripheral areas should create an effective mechanism for the transformation of the existing financial and investment potential in specific innovation projects. Such a transformation mechanism is created within the framework of innovation and investment strategy in the region, to identify its goals and objectives, and evaluation of innovative financial and investment potential (Herbert, 2009).

Thus, the formation and implementation of innovation and investment strategy of the peripheral area is based on an assessment of the financial and investment and innovation potential. Types of peripheral areas depending on the ratio of the potential is paramount depend on the innovative capacity as an object of investment of financial resources and are divided into regions of the donor and recipient regions potentially self-sufficient regions. Depending on the type of peripheral areas through innovation and investment strategy of the peripheral areas are developed goals and objectives, as well as the mechanism for implementing the strategy (Indecon, 2013).

4. Results

Innovative activity in the current economic environment is of great importance and enhances the competitiveness of individual regions and the country as a whole. A high level of innovative activity allows you to create the conditions for sustainable economic growth in the long term and the most efficient use of available resources. At this stage of development becomes particularly relevant area of innovation management at the regional level.

Principles of formation of the mechanism of long-term and strategic management of innovation and investment development of the administrative-education must, as well as the principles of management of investment in fixed capital and innovation regional economy, meet the functional purpose of the mechanism of management of scientific and innovative financial and investment development of the region.

In the economic literature, some authors to disclose the essence of the “mechanism” of a particular process or is a part of the socio-economic system (enterprise, industry, the economy) allow, in our opinion, the definition of this biased definition, counting mechanism as part of a system, or implementation of the provisions of declarative normative legal regulation, for example, business entities, the flow of financial and investment, research and innovation, socio-economic and other processes in ways Resourcing undertaken measures that promote the implementation of the targeted areas of cooperation between elements of the system or detailed action within implementation of the adopted legal and regulatory provisions governing the activities of the current socio-economic systems or different levels of production and economic, financial and investment, research and innovation processes carried out in the region, the company, in the industry (Popkova et. al., 2013).

However, the lack of adequate and meaningful definition of “mechanism” as part of administrative actions on the current operation and future development of economic entities sectorial components of the economy or administrative-territorial units, in our opinion, in turn, is associated with low levels of logical and verbal representation of the functional predestination control mechanism of socio-economic systems and administrative-territorial formations.

In this regard, it should be noted that the functional purpose of the mechanism of long-term and strategic management of investment in fixed assets, technical, technological and other innovations may be disclosed on an adequate basis to formulate the concept of “development mechanism”.

In accordance with our ideas, the mechanism of development management, as logic-verbal form as part of long-term, strategic development, can be expressed thus its meaningful content, as the activation of the system or the management of investments in fixed assets, innovation through rational interaction elements as a mechanism management and control systems in general (methods, techniques of strategic and long-term management of specific measures, actions within the system).

Control mechanism perspective and strategic development of innovation and investment processes in the above author of its logical-verbal content appears as part of the processor-based management in their functional purpose of maintaining a level of rationalization elemental interaction system, which achieves the necessary (the most possible) economic, financial and social outcomes, the effectiveness of the management and implementation of the whole process of investing in the renovation and modernization of fixed assets, creation and implementation of innovations in the regional economy.

Thus, the established functional purpose mechanisms; management of innovation and investment development of the regional economy is focused on the creation of conditions and realization of potential resource capabilities systems perspective and strategic management of scientific and innovative financial and investment development, to achieve high economic, financial and social results.

5. Discussion

Basic principles of long-term mechanism for management of scientific and innovative financial and investment development of the administrative-territorial entities, in accordance with our view, may be:

- Resource and organizational support for the extrapolation of trends of perspective development of the regional process of investing in modernization of fixed assets, creation and implementation of technical, technological, information, economic and organizational innovations in the region;
- High level economic and mathematical validity and expert forecasts of economic, financial and social results medium-, long-term development process of investment in fixed capital and innovation of business entities administrative-territorial unit;
- The validity of the need to correct the dimensions of economic, financial and social performance, effectiveness of investment in fixed assets, technological, technical, information and other innovations in the long period of time due to the increasing influence of negative factors macro microenvironments exceeding feedbacks previously established and operating a time trends in socio-economic, scientific and innovative financial and investment nature;
- Target orientation control mechanism prospective investment in fixed capital and create innovations for the regional economy to achieve by means of elemental interaction mechanism prospective management of economic, financial and social identifiers effective and efficient innovation and investment development of the peripheral areas in the statistically representative (confidence) intervals;
- Complementarity with the mechanism of the strategic management process of investment in fixed assets, technical, technological, information and other innovations.

Implementation of the principle of mathematical economics and expert validity obtain adequate forecasts of economic, financial, social outcomes, efficiency of investment in fixed capital and innovation businesses and infrastructure complex regional economy (Box 1.2, Figure) represents an opportunity multilevel controls project and program investments in fixed capital and innovation (governments in the region, municipalities, business entities) at the appropriate level of accuracy and significance to establish the reality of achieving planned settlement of economic, financial and social performance, effectiveness of project investment in the region.

Formulation and compliance with the principles in the establishment and operation of the strategic management of project investment must meet the functional purpose of strategic management, which consists in countering all the negative influences of factors macro microenvironments in order to achieve the guidelines of the economic, financial and other performance project investment in the medium, long period of time, and in the increasing influence of positive trends emerging in the external and internal environment of the target orientation to get the best results and the efficiency of investment in fixed assets, creation and implementation of innovations in industrial production.

6. Conclusion

The expediency of accounting and largely determines the impact of regional determinants of the formation of an innovation-oriented regional investment policy in accordance with the present levels of hierarchy in the figure is shown in the following:

- Actualization needs of innovative development of the regional economy of individual subjects of the Russian Federation in terms of strengthening the vertical of state power and the growing role of regional organizations in the financial support of innovation;
- The possibility of rational specialization of the economic system of separate peripheral areas in order to maximize the effect of the territorial division of labor;
- The need to comply implemented in the peripheral area of innovative projects development strategy Meso-economics in order to develop appropriate management actions in respect of investments regional authorities;
- The importance of matching the structure produced by the needs of innovative products, as well as financial and organizational opportunities and mechanisms for the regional economy;
- The possibility of individualization of various forms of stimulation of investors at the regional level in accordance with the priorities of socio-economic development of territories.

The need to emphasize the innovative structuring of the economic system of the region, in turn, is due to the following factors:

- The possibility of preserving and strengthening the single economic space of the peripheral areas through innovative development of all its subsystems with the positions of the system and regulatory approaches to the implementation of strategic management;
- The concentration of investments in innovation potential and innovation-active areas of the regional economy (sectors and spheres of the regional economy, large corporations, etc.) and place of effective consumption of finished innovative products;
- Uniform "placement" of innovation across the country as a whole, aimed, inter alia, to equalize the level of socio-economic development of the peripheral areas and others.

The main factors are the determinants of regional innovation-oriented investments in the region, directly corresponds to the so-called "innovative structure" of the regional economy, are, first and foremost, parametric integral characteristics of its building, including economic and geographical position of the region, population and labor force, created on the territory of the productive apparatus, infrastructure and transport factor localized natural resources, scientific and technical potential, social climate, forms of territorial organization of the economy, financial resources, institutional infrastructure investment and innovation, as well as the quality of regional governance.

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