

Evaluation of Innovative Regional Development Russia

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Abstract

The innovative potential of the region is a collection of innovative potential of its constituent business entities also includes alleged or already developed resources. Functionally the innovative potential of the region structure includes personnel, financial, material, organizational and other components that are needed to achieve the goals of innovative regions. It is, so to speak, a kind of "World readiness" of region to performing the innovative tasks. Comparison of innovative development of federal districts showed that higher indices of innovative development have Volga, Central, Siberian, Ural and North-West Federal District counties. Persistently lowest-North Caucasian Federal District Degree of differentiation of the regions of innovative potential and its components significantly less than on the development of innovation and complex index, calculated for the proposed scientists of Research University "Higher School of Economics" and author of the article method, as well as the effectiveness of regional innovation management. The authors recommended: first, to assess whether the regions sufficient innovation potential for self-development; secondly, to determine what regions effectively used the existing potential, i.e. whether they have adequate innovative strategies; How effective their measures to stimulate innovative activity (whether by effective technology parks, business incubators, etc.); thirdly, a flexible mechanism for monitoring and reallocation of funds in accordance with the level of efficiency; finally, provide additional support to those regions that show the most recent dynamics of innovation.

Keywords: innovative potential, innovation activity, innovation development of region, rating, regional differentiation

1. Introduction

Russian regions have different results and innovative potential of innovative development, basically regions have proportionately and high capacity, and high levels of innovation. However, there is a big gap between these parameters in different regions, which determines three different directions of innovative development of the regions (Zarubin & Tkhakushinov, 2014):

- 1) If the lower level of innovation development is associated with a weak potential, it is necessary to build, increase staffing, technical, technological and financial capacities;
- 2) If the lower level of innovation development is associated with poor use of capacity, it is a necessary innovate infrastructure for innovation;
- 3) If the lower level of innovation and development associated with weak capacity, and its low use, you must first build it, i.e. increase in staffing, technical, technological and financial capacities, and then the development of innovative, innovation infrastructure.

Innovation as a result of the use of innovative potential play a crucial role in overcoming the crisis of the economic system, but many studies in different countries show a low level of innovation activity of enterprises (Holvikivi, 2014; Hausman & Johnston, 2014; Gambardella & Panico, 2014).

It is important to correctly assess the innovative potential of the region and the level of its use to justify the ways of innovation development in the region (Hildén at al., 2014; Barquero, 2012).

2. Method: To the Question about the Essence of Innovative Potential

The innovative potential represents important part of its successful development scientifically and technically (Rathindran, 2014).

To grasp the essence of innovative potential it is necessary to allocate its elements, based on the resources of its development. By structure "economic structure potential" often categorize personnel, informational, organizational, logistical and financial divisions, identifying them accordingly as similar elements (Kashitsyna & Berkovich, 2014).

Each section of the innovative potential represents an independent attribute, and it is not equivalent and interdependent. So, personnel section - is the generator of innovative ideas, material-technical element is the actual base of formation of innovative potential organization; organizational component - is a set of bodies, structural divisions and their executants staff who perform the work assigned to them, including a set of functions, which help to realize the management effectiveness; informational component pervade and integrates the entire management process, because somehow all work in management involve working with information, and, therefore, without modern information technology activities of management mechanism, no organization is possible; financially based innovative potential ensures funds supply, carrying an impact on the income of innovative projects and programs accordingly with the priority needs of functioning and development of the organization and its innovation sphere, promoting the effectiveness of funds spending for innovation and so on, in general, this component plays the role of realization the other elements of the potential industrial companies and their quantitative value (Görmar, 2006).

As the analysis showed, it is possible to identify the following important factors that determine the size of the innovative potential and the areas of its use (Bibik, 2013; Chernyavskii, 2011):

- 1) innovation policy, which carries out the authorities;
- 2) innovation strategy of enterprises - business entities (different by nature of activities and capital value of business structures, and also organizations of the scientific sphere);
- 3) banks policy, stocks and other financial institutions operating in the region;
- 4) the dynamics of consumer preferences;
- 5) the level and nature of competition in the region;
- 6) the achieved level and dynamics of development of innovative infrastructure;
- 7) a certain stock of innovation "strength" - a reserve of scientific and technical developments in the region and outside it, that can be mobilized in the interests of its development.

The essence of the innovative potential of the region can be properly assessed in the event that innovation is considered strongly relative to the scientific, technical, environmental and industrial activity, that is, science, innovation, production and environmental conditions should be a single organic system. Thus, according to the mentioned situation, the development of innovation potential, in that case the region, will contribute to the foundation of the authorities of socio-economic conditions to ensure close cooperation and development of each of the above components at the appropriate management level (Kanevsky & Chistyakov, 2005).

The institutional structure of the innovative potential of the region includes scientific and technical potentials of material production enterprises, non-production sphere; potentials of infrastructure facilities such as business incubators, technology parks, etc.

According to the attachment of the component to innovative potential of one form or another of ownership, we can talk about the capacity of the public, private and joined forms of ownership.

Accordance to the functional nature of the dominant structural elements we can classify them and highlight the potential components as individually functional components (financial, logistics, human resources, information) that allows you to define the relationships between them, conduct a detailed analysis of the trends of their development and choose ways of improving relations and relationships between potential's components (Ermakov & Ermakova, 2009).

In addition, according to the source of the basic resources of the innovative potential development of the region can be obtained and developed. Innovative potential of economic entities in the region to some extent serves the economy as a whole, while on the region works "innovative potential" of other regions, which determines the possibility and desirability of allocating own and borrowed innovation potentials (Peyrache-Gadeau, 2007).

The region obtained potential can be characterized as the cost value of the innovative potential of accumulated region enterprises, and the developed accordingly defined as the cost value involved in the region potential (from other regions).

The value of the region innovative potential can be estimated as the total innovation potential of Constituent branch variant by scale, quality and business dynamics (small, medium and large businesses, especially SME) (McAdam at al., 2014), innovative activity which first, forms the basis of the innovative potential of the region, and Secondly, it is the object of management, thus determine the effectiveness of management activities in the organization in the region. Innovative development of enterprises is predetermined by the presence of a favorable investment climate in the region, the country and the branches, developed innovation infrastructure, balanced sectoral innovation policy and regional strategy of the authorities.

3. Results: Russian Scientists about Evaluation of Innovative Potential

According to Russian scientists (Hochberg, 2014), the scope of innovation in the Russian regions, as well as the level of innovation development and trends geographically distributed very unevenly.

To assess the level of Regional Development Institute for Statistical Studies and Economics of Knowledge (National Russian University Height School of Economy "NRU HSE") released its second annual ranking of innovative development of Russian regions with the calculations on the basis of 2012 (Bibik, 2013). The authors of the ranking in the results of years of research developed enough original technique together with the calculation of quantitative indicators and qualitative criteria defining some innovative development of regions. It is a high statistical norm and standards, as the Russian government statistics, and the leading foreign countries and international organizations (European Commission, 2012).

Assessing the proposed NRU HSE rating, it should be noted its high validity and to test, so the conclusions that can be drawn based on it have a high level of confidence.

Rating in relation to NRU HSE, built on the basis of 36 indicators combined into four specific units may be an option offered by four to calculate the index of indices of two groups: Group 1 - level of innovation capacity in the region, including: socioeconomic potential (ISEL – evaluates the degree of social economic, educational and informational development of the area, characterized by its potential for development and implementation of innovations); scientific and technical potential (ISTP - assesses the scientific and technological potential of the territory on the most important components: the level of security research and development of financial and personnel, and the publication of patent activity, the number of created modern manufacturing technologies, revenues from the export of innovative technologies); and the legal and financial potentials defined in the study as a rating of "quality innovation policy " (IQIP - the level of elaboration of normative legal base, the availability of specialized organizational support and scale of budgetary expenditure on science and innovation); Group 2 - the level of innovation performance in the region or the use of innovative capacity (IIA - assesses the development of the process of creation and implementation of technological, organizational, environmental and marketing innovations) (Midler, 2008).

Final Russian Regional Innovation Index - RRII - defined as the arithmetic average of all indicators included in the rating that it seems possible to assess the innovative development of the region, but to identify opportunities for its development and evaluation of innovative process management is not sufficiently significant. Thus, the main conclusion of the authors of the study is that the innovative development of Russian regions - very uneven. Researchers estimated value of the spread of a generalized index, is the ratio of its value to the region tops the index value to the region, the closure list, more than 3.7.

This is understandable because the regions cannot be the same, especially in an area such as innovation. More indicative of another fact. If you calculate the level of innovation capacity and the level of its use, you would see a huge difference according to researchers at index ISEL gap is 4.8, for ISTP - 4 at IQIP - 6.4, and for IIA - nearly 134! However, if we compare the best (Moscow) and the last (Chechen Republic) regions in the ranking over all indices 1 and 2 groups, the index of the innovative potential gap is 3.03, which means a low level of differentiated, and to use the potential (IIA) - 134! This indicates a very low efficiency of management of innovation processes and that is a huge differentiation of Russian regions in terms of innovative development is mainly associated with no differences in the innovation potential and the level of its user.

Calculation of the index showed that the first place in the innovative development of innovative potential takes Moscow, on the second and third places - Tatarstan and St. Petersburg, as well as the Chuvash Republic, the lowest indexes of innovation development in the Republic of Ingushetia and the Chechen Republic of Kalmykia (Figure 1).

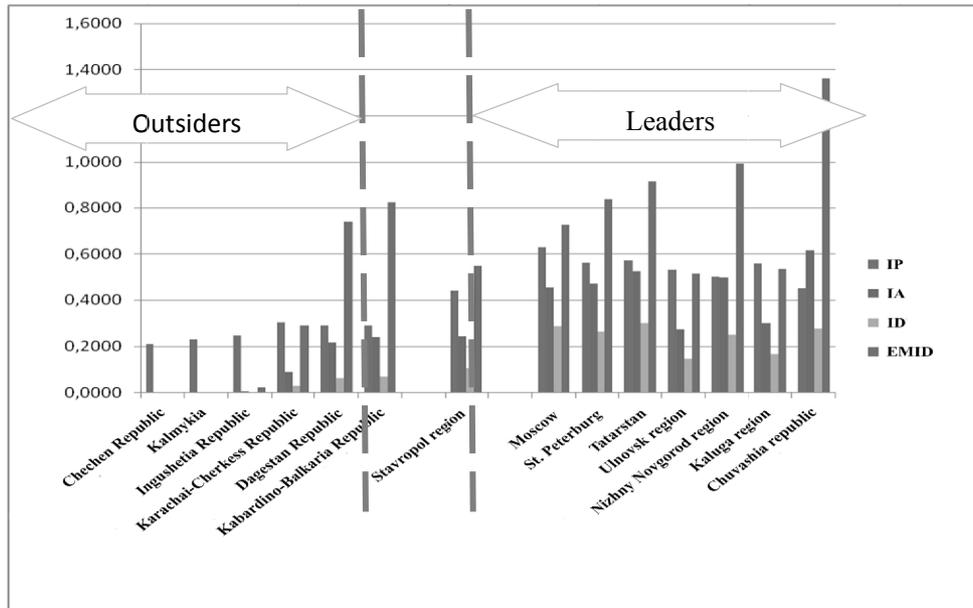


Figure 1. Comparison of the regions in terms of innovation development

Comparison of innovative development of federal districts showed that higher indices of innovative development have Volga, Central, Siberian, Ural and North-West Federal District counties. Persistently lowest-North Caucasian Federal District (Hochberg, 2014; European Commission, 2012).

Analysis of changes in the level of innovation development in 2008, 2010 and 2012 revealed a significant volatility innovative product’s region. Here we have the stability of the leading regions and regions of outsiders in innovation development; this is combined with the constant changes in order of regions in the middle of the rankings.

4. Discussion: Suggestions for Evaluating the Effectiveness of the Use of the Innovative Potential of the Region

Degree of differentiation of the regions of innovative potential (IP) and its components (ISEL, ISTP, IQIP) significantly less than on the development of innovation (use of innovative capacity-IA) and complex index, calculated for the proposed in (Ermakov, 2009) (IDR) and author of the article (ID) method, as well as the effectiveness of regional innovation management (EMID) (Figure 2).

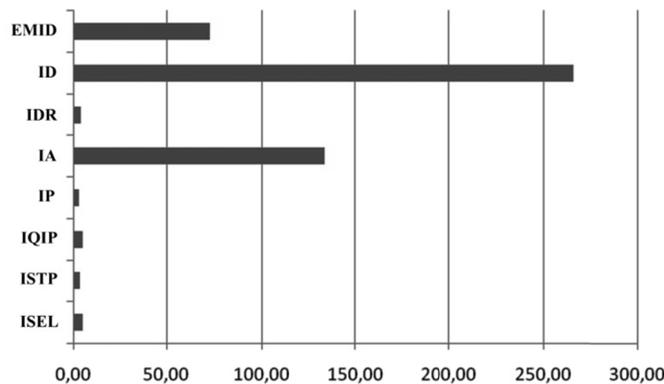


Figure 2. Level of differentiation of regions of the Russian Federation in terms of innovative development and efficient management of innovation processes

To some extent this can be explained by the fact that the alignment of the socioeconomic conditions and technological innovation capacity of regions are important objectives of the regional policy of the federal government. They are achieved through the implementation of federal target programs, management of state and

municipal property, funding for public education and scientific institutions, the functioning of enterprises with state participation. At the heart of the regional policy of the federal authority is the principle of leveling the economic conditions and the innovative capabilities of the territories with an emphasis on social obligations of the state.

Necessary changes in the methods of the technique innovation. To do this, select:

Innovative potential of IP, including: social SP (Staffing), economic - IE (level of economic development of the region, industry), financial - IF (private and budget allocation of financial resources for the creation of innovation), Science and Technology - IST (client level and progressive engineering and technology), the legal - OLI (well conceived regulatory framework and the development of special institutions support innovation) potentials;

Using level of the innovate potential, defined by innovative activity index IA, including: the creation of innovations and the use of innovation in the regional economy (industry).

Level value innovation potential SP usefully be measured as the arithmetic mean weighted by importance Tag each of the five above-mentioned indices:

$$IP = (IS \cdot m_1 + IE \cdot m_2 + IF \cdot m_3 + IST \cdot m_4 + IOL \cdot m_5) / \sum m_j. \quad (1)$$

Index of Regional Development ID desirable to define us:

$$ID = IP \cdot IA. \quad (2)$$

This approach to the definition of the index is linked to the economic substance of its constituent indicators that can be displayed as a ratio of total (existing building) and its parts (used capacity) (Figure 3).

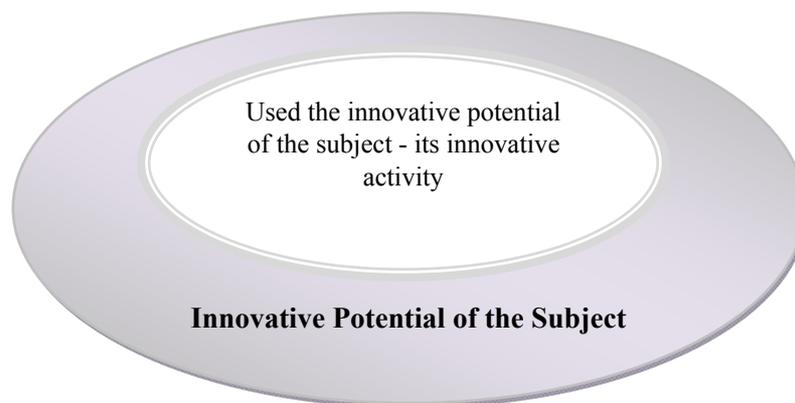


Figure 3. Correlation of innovative development index and its components

The more developed the innovative potential, the higher the level of innovation development, similarly it is also true that the higher the level of use of innovative potential, so at the same level it above the level of innovation.

Of course, the simple and direct relations in actual practice it is difficult to meet. And, as the researchers note HSE... for most regions, there is a combination of high values for one block to another low, or there are significant deviations in one or several partial indices in comparison with the level of the integral index of innovative development.

In this regard, it is important to determine the relative level (index) innovative development of i-th region (industry), which should be shown separately as differences in the level of innovation capacity, and in the level of its use, IE:

$$RID_i = (IP_i / IP_{baz}) \cdot (IA_i / IA_{baz}) = CIP_i \cdot CIA_i. \quad (3)$$

Effectiveness of innovative process management can be defined as the ratio of the index use of innovative potential to its level:

$$EMID = IA / IP. \quad (4)$$

At the same time, the parameters of innovation activities of enterprises located in the regions, and the effectiveness of management innovation on the part of state and municipal authorities are largely determined by the historical structure of the economy, as well as priorities and management skills of regional leaders, both private and public organizations (Parakhina & Novikova, 2013).

At the same time, given the weak development of innovative capacity in the subjects of the North Caucasus Federal District, the possible reduction in incentives innovation processes in them by the federal government will lead to stagnation of innovation processes and even higher differentiation of regions of the Russian Federation according to their level of innovation development.

In our opinion, it is very important to try to find an answer to the question which regions can effectively use the allocated funds for innovative development, and which will not be able to dispose of them successfully (Correia & Gomes, 2014).

To do this: first, to assess whether the regions sufficient innovation potential for self-development; secondly, to determine what regions effectively used the existing potential, i.e. whether they have adequate innovative strategies;

How effective their measures to stimulate innovative activity (whether by effective technology parks, business incubators, etc.); thirdly, a flexible mechanism for monitoring and reallocation of funds in accordance with the level of efficiency. It may make sense to change the vector of policies and provide additional support to those regions that show the most recent dynamics of innovation. However, you must bear in mind that reducing the federal budget to support innovation in the Russian regions (with low levels of innovation development) can lead to increased asymmetry of territorial development (Anopchenko and Murzin, 2014; Huang and Zhang, 2014).

As the experience of European countries, innovative development has a much higher spatial unevenness than even such important socioeconomic indicators such as labor productivity and welfare. At the same time the effectiveness of measures to "equalize" is very ambiguous.

5. Conclusions

Thus, the innovative potential of the industry is a collection of innovative potential of its constituent business entities of different sizes and forms of ownership, and also includes alleged or already developed resources of enterprises of other related branches. Functionally the innovative potential of the industry branch structure includes personnel, financial, material, organizational and other components that are needed to achieve the goals of innovative industries in the field of high technology processes, new products, services or their modifications, as well as new organizational solutions. It is, so to speak, a kind of "World readiness" of industry branches enterprises to performing the innovative tasks.

Determining the directions of innovative development of the regions should pay attention to the differentiated approach to increase innovation capacity and competitiveness of socioeconomic systems (Boris and Parakhina, 2012). According to this approach (it has recently been widely used abroad), each region is advisable not only and not so much focus on the leaders (who tend to have built a coherent chain of innovation from basic research to the establishment of competitive enterprises) how to find their own unique expertise, which may lie in different areas and fields of activity: development of technologies (nanotechnology, etc.), customization and application in the production of new products (e.g., automobiles), the development of creative industries (design, entertainment, sports, arts, the media, etc.). And in this case it becomes crucial variety of subjects of the Russian Federation. In this case the goal is to not align regions that diversity in terms of the objective very difficult. Emphasis should be placed on the use of the specific advantages of the region, which applies to the North Caucasus Federal District reliance on natural, ecological, tourist and recreational potential of the North Caucasus.

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