

DOI: 10.18721/JE.10204
UDC 338.2

ANALYSIS AND EVALUATION OF INNOVATION AND INVESTMENT ACTIVITIES POTENTIAL OF ECONOMIC ENTITIES (FOR EXAMPLE, THE NORTHWESTERN FEDERAL DISTRICT)

E.A. Mil'skaya, A.V. Bychkova

Peter the Great Saint-Petersburg Polytechnic University, St. Petersburg, Russian Federation

The current situation of the economic entities of the Northwestern Federal District (NWFD) has been analyzed in this article. Regional innovative activity evaluation is an actual topic of studies among Russian economic scientists, research centers and departments. The current innovation and investment situation in Northwestern Federal district has been characterized and statistical data for the period of 2005–2014 was analyzed by authors. The result of this work concludes the uneven distribution of innovative activity among economic actors that are members of the Federal district. Due to the significant role of the government in the formation of investment activity in the regions, an analysis was conducted of the directions of industrial policy of innovative-investment activity of economic entities. The results of the study showed that nowadays in each subject of the Northwestern Federal District there are a lot of actions that are made to strengthen innovation activities, developed plans and strategies for its development. Moreover, authors carry out evaluation of existing methods for the analysis of innovative activity and innovative potential of the region. In total number, nine methods developed by Russian institutions, organizations and scientists were reviewed there. Using this information, the comparative analysis of all methods was released; the advantages and disadvantages of each were mentioned. Based on this, authors have selected only one methodology and used it in further calculations. The authors have performed analysis of innovative-investment activity of economic entities in the Northwestern Federal District, as well as the evaluation of innovative potential of each actor of the region. The results showed that in most regions of the northwestern Federal District it is necessary to strengthen government's actions in order to stimulate innovative activity at the enterprises. The final part of the work authors have made a forecast of the volume of innovative goods, works and services, produced by enterprises of the Federal District. The linear regression equation was used to build a forecast for 2015–2025. The results of the study can be used for the formation of the policy for further regional development, creation of innovation and investment strategy and development of the actors and the region in general.

Keywords: the Northwestern Federal District; innovation; investment and innovative activity; regression analysis; measures of state support; correlation analysis; economic entity of the region

Citation: E.A. Mil'skaya, A.V. Bychkova, Analysis and evaluation of innovation and investment activities potential of economic entities (for example, the Northwestern federal district), St. Petersburg State Polytechnical University Journal. Economics, 10 (2) (2017) 44–53. DOI: 10.18721/JE.10204

АНАЛИЗ И ОЦЕНКА ПОТЕНЦИАЛА ИННОВАЦИОННО-ИНВЕСТИЦИОННОЙ ДЕЯТЕЛЬНОСТИ ЭКОНОМИЧЕСКИХ СУБЪЕКТОВ (НА ПРИМЕРЕ СЕВЕРО-ЗАПАДНОГО ФЕДЕРАЛЬНОГО ОКРУГА)

Е.А. Мильская, А.В. Бычкова

Санкт-Петербургский политехнический университет Петра Великого,
Санкт-Петербург, Российская Федерация

Анализируется состояние экономических субъектов Северо-Западного федерального округа (СЗФО). Оценка инновационной активности регионов является актуальной темой исследования среди российских ученых-экономистов, исследова-

тельских центров и ведомств. Северо-Западный федеральный округ охарактеризован с точки зрения текущей инновационной и инвестиционной ситуации, проанализированы статистические данные за 2005–2014 гг. Сделаны выводы о неравномерности распределения инновационной активности среди экономических субъектов, входящих в состав федерального округа. Так как роль государства очень велика при формировании инвестиционной деятельности в регионе, проведен анализ направлений промышленной политики в области инновационно-инвестиционной деятельности экономических субъектов. Результаты исследования показали, что на сегодня в каждом субъекте СЗФО проводятся меры по усилению инновационной деятельности, разработаны планы и стратегии их развития. Осуществлена оценка существующих методов анализа инновационной активности и инновационного потенциала региона в целом. Рассмотрено девять методик, разработанных российскими институтами, организациями и учеными. С использованием полученной информации, проведена сравнительная характеристика всех методов, выделены преимущества и недостатки каждого. На основе проведенного анализа методологий выбрана одна, которая и использовалась при дальнейших расчетах. Выполнен анализ инновационно-инвестиционной активности экономических субъектов СЗФО, а также проведена оценка инновационного потенциала каждого субъекта региона. Результаты показали, что в большинстве регионов СЗФО необходимо усилить меры государственного стимулирования инновационной деятельности на предприятиях. Заключительный этап исследования – построение прогноза объема инновационных товаров, работ и услуг, производимых предприятиями федерального округа. С использованием уравнения линейной регрессии построен прогноз на 2015–2025 гг. Результаты исследования могут применяться при формировании политики дальнейшего развития регионов, разработке стратегии инновационного и инвестиционного развития СЗФО и субъектов.

Ключевые слова: Северо-Западный федеральный округ; инновационная деятельность; инвестиционно-инновационная активность; регрессионный анализ; меры государственной поддержки; корреляционный анализ; экономический субъект региона

Ссылка при цитировании: Мильская Е.А., Бычкова А.В. Анализ и оценка потенциала инновационно-инвестиционной деятельности экономических субъектов (на примере Северо-Западного федерального округа) // Научно-технические ведомости СПбГПУ. Экономические науки. 2017. Т. 10. № 2. С. 44–53. DOI: 10.18721/JE.10204

Introduction. In the modern world, the problem of innovative development of the regions is particularly urgent. Regional economic entities now need to spend more and more efforts to carry out scientific activities, conduct research and development in order to be competitive and confidently cope with the instability of the economic and political situation in the country.

The importance of the study is due to the need to develop innovative and investment activities in all economic entities of the Russian Federation, to create a favorable innovation and investment climate, to increase the competitiveness of regional economic entities and their attractiveness for both Russian and foreign investors.

The subject of research in this article are the economic entities of the Northwestern Federal District, one of the most developed and attractive regions in terms of innovation. Economic entities of the region are not chosen by chance, since statistical information on them will be regarded in this work as a set of innovative activities of enterprises operating in that territory.

Purpose of the study. The purpose of this work is to assess the innovative potential of the economic entities in the Northwestern Federal District and to build a forecast of their innovative activity for the coming years, as well as to develop recommendations for improving the efficiency of innovation and investment activities of the entire Northwestern Federal District.

To achieve this goal, it is necessary to carry out an analysis of innovation and investment activities of the region as a whole, based on the chosen methodology, to assess its development potential on the basis of an analysis of the activities of economic entities in the region and to build a forecast of the volume of innovative goods, works and services for the coming years.

Speaking about industrial manufacturers, in particular, it should be noted that they are primarily focused on long-term, sustainable development of their enterprises, on the growth of production volumes based on innovations, on increasing their investments in R&D [7,

14]. Unfortunately, it should be noted that in 2014 the share of organizations in the regions under investigation implementing technological, organizational, marketing innovations declined compared to the period of 2011–2013. In 2011, 10.4 % of enterprises carried out innovative activities, while in 2014 only 9.4 % did so. At the same time, innovations in R&D are growing from year to year: 29.8 % of innovative enterprises made investments specifically in research and development in 2011, while in 2014 they amounted to 33.3 % [3]. Since 2015, the process has slowed down due to the next wave of crisis. The sanctions imposed by the West have also had their negative effect.

The Northwestern Federal District includes 10 federal subjects: the Republic of Komi, the Republic of Karelia, Arkhangelsk, Vologda, Kaliningrad, Leningrad, Murmansk, Novgorod, Pskov regions and the city of St. Petersburg. Until 2012 the Northwestern Federal District increased the number of advanced production technologies in general, but almost all of them (more than 76 %) were created only in one entity, the city of St. Petersburg [15]. In recent years, there has been a trend towards slower growth in investment in capital assets. More than 37 % of the region's investments are concentrated in the same economic entity, St. Petersburg. Besides that, 15.28 % is concentrated in the Komi Republic and 13.2 % in the Leningrad Region. Actually, these subjects concentrate the greatest amount of investment [15]. In the Northwestern Federal District, attracted funds are the prevalent sources of investment financing. Only two subjects of the region: Pskov and Leningrad regions invest at their own expense. The unstable economic and political situation in the country had an impact on the inflow of foreign direct investment in the Northwestern Federal District, which was reflected in the negative balance of payments in the investment section [15].

According to statistical data, the greatest percentage of innovations is concentrated in technologies [15]. Most technological innovations are carried out in the production of electrical equipment, electronic and optical equipment (27 % in 2014), production of coke and petroleum products (23 %) and chemical production (21.4 %).

Research methodology. In order to evaluate the investment and innovation activity of the subjects of the studied region, various methods for evaluating the innovation activity of the subjects of the regions were analyzed, both devised by various authors and proposed by scientific centers and institutes. In particular, the methodology of the HSE, Financial University, AIIR, NISP, CRS «Northwestern», Erokhina [6], Pogodina [12], Bystritsky [4], Dubinin [5]. Each of the studied methods has both advantages and disadvantages in comparison with others. Some of the techniques analyze the factors that influence the development of innovative activity, others focus on the results.

As a result, from our point of view, the method of integrated rating analysis developed by Dubinin is the most appropriate one for evaluating the innovation activity of the region's subjects. The resulting indicator is «The volume of innovative goods, works and services», because it reflects the final result of innovation activities of enterprises, as well as the effectiveness of public policy. The main advantage of this method is that all key indicators that affect the innovative activity of functioning entities are considered in the analysis, and the influence of each indicator on innovation activity is taken into account. Through the study, we have decided to supplement this methodology with several other indicators that are relevant for the present time period:

- the costs of technical innovation;
- the share of the faculty in the total number of employed workers in the region;
- used advanced production technologies;
- use of the Internet at enterprises and organizations;
- the share of organizations engaged in research and development, for the region as a whole.

Results. As a result of the calculations, a correlation coefficient was obtained, which characterizes the degree of connection between the characteristic factors and the result factor (Tab. 2).

The next stage of the analysis is the grouping of indicators (Tab. 3) and the definition of an intermediate integral estimate. At the final stage of the analysis, a comprehensive assessment of the region's innovation activity (Tab. 4) is shown.

Table 1

Comparative characteristics of methods for assessing innovation activity

Author	Number of indexes	Sections	Advantages	Disadvantages
HSE	37	1 – Socio-economic conditions of innovation; 2 – Scientific and technical potential of the region; 3 – Innovation in the region; 4 – The quality of innovation policy.	Complex analysis; A low regional estimate for one indicator can be balanced by a high estimate for the other	A complex multi-level evaluation system
Financial University	180	1 – Level of socio-economic and financial development; 2 – Competitiveness and investment attractiveness; 3 – The level of scientific and technical potential; 4 – Level of development of innovation activities.	Broad coverage of indicators affecting the development of innovation in the region	The complexity of collecting statistical information, the inaccessibility of certain types of data
AIRP	23	1 – Research and development; 2 – Innovative activity; 3 – Socio-economic conditions.	It relies on the accumulated domestic and foreign experience of research, takes into account the opinion of experts and the position of federal authorities	Due to the use of the expert method of assessment, there may be a subjective opinion, obtaining inaccurate results
CSR «North-western»	15	1 – Preparation of human capital; 2 – Creation of new knowledge; 3 – Transmission and application of knowledge; 4 – Conclusion of innovative products on the market.	Broad coverage of indicators	The information environment is not evaluated
V.K. Zausaev, S.P. Bystritsky	15	1 – Macroeconomic; 2 – Infrastructural; 3 – Legal; 4 – Staffing; 5 – Economic.	Relative simplicity of calculations, availability of statistical data	To assess the state of the innovation environment, the use of fixed capital and information and communication technologies
A.S. Dubinin	13	1 – Economic development of the region; 2 – Innovation potential of industrial production; 3 – Scientific potential; 4 – Participation of the region in international technological exchange; 5 – Information and communication potential.	It covers all key indicators, takes into account the impact of each specific indicator on the innovation activity of the region	The resulting analysis factor is chosen by the expert, which may not accurately reflect the actual innovation activity in the region

Table 2

**The results of the correlation analysis
(the resultant characteristic is the volume of innovative goods, works and services)**

№	Characteristic factor	Correlation Ratio
1	The number of intellectual property objects created per 10,000 employees in the region's economy	0.9455049
2	Costs of technological innovation	0.9437164
3	The cost of R&D in the amount of 10,000 people in the economy of the region	0.9416247
4	The share of organizations using information and communication technologies in the total number of organizations in the region	0.9352655
5	GRP per capita of the region	0.9156026
6	Export of technologies and services of a technical nature	0.9080731

Continuation of Table 2

№	Characteristic factor	Correlation Ratio
7	Number of personal computers per 100 workers in the region	0.8929995
8	The proportion of faculty in the total number of employed region	0.8923734
9	Volume of investments in fixed capital per capita	0.8304422
10	Import of technologies and services of a technical nature	0.8274741
11	Used advanced production technologies	0.8197648
12	Number of scientific organizations per 10 thousand people employed in the economy	0.8013259
13	The ratio of the number of postgraduates and doctoral students to the total number of employed in the economy	0.7723728
14	Using the Internet in Organizations	0.7665354
15	The share of innovative-active enterprises in the total number of enterprises in the region	0.6635596
16	The proportion of staff engaged in research and development in the total number of employed in the economy of the region	0.6628784
17	The share of organizations engaged in research and development in the total number of enterprises in the region	0.4329411
18	The ratio of the number of candidates and doctors of science to the total number of employed in the economy	0.1492624

Table 3

Grouping of characteristic factors

Metric group		Indicators
Economic development of the region	ED	5, 9
Innovation potential of industrial production	IP	1, 11, 15
Scientific potential	SP	2, 3, 8, 12, 13, 16, 17, 18
Participation of the region in international technological exchange	TE	6, 10
IT potential	ITP	4, 7, 14

Table 4

Integral indicator of innovation activity of economic entities in the Northwestern Federal District, 2014

Subject	EP	IP	SP	TE	ITP	IRD
NWFD	0.8730	0.8096	0.7234	0.8678	0.8649	0.8257
Republic of Karelia	0.2857	0.1561	0.3945	0.2486	0.3874	0.2791
Komi Republic	0.4742	0.6090	0.5361	0.3903	0.5581	0.5077
Arhangelsk Oblast	0.3109	0.1945	0.3974	0.4044	0.2064	0.2887
Vologda Oblast	0.3797	0.5466	0.4065	0.7011	0.6180	0.5159
Kaliningrad Oblast	0.8266	0.7489	0.7960	0.5438	0.8349	0.7412
Leningrad Oblast	0.4574	0.4275	0.3744	0.3071	0.6217	0.4257
Murmansk Oblast	0.6266	0.3846	0.5306	0.5722	0.6704	0.5472
Novgorod Oblast	0.3856	0.1755	0.2054	0.0331	0.2241	0.1600
Pskov Oblast	0.4313	0.4537	0.2531	0.1295	0.0467	0.1974
Saint Petersburg	0.8983	0.8282	0.7395	0.8729	0.8596	0.8378

As it can be seen from the results of the study, St. Petersburg is the undoubted leader in terms of innovation activity: the value of the integral indicator is 0.8378, which exceeds the value of the indicator throughout the Northwestern Federal District. Quite good indicators also have been obtained in the Kaliningrad Oblast (0.7412). Murmansk and Vologda regions and the Republic of Komi have an average level of innovative activity. Novgorod and Pskov regions have the lowest indicators.

Further, the innovative potential of the region's subjects is directly assessed and the forecast is calculated for 10 years. To determine the innovative potential of the Northwestern Federal District, a methodology based on the calculation of an integrated indicator evaluating the innovation potential in terms of its formation can be used [10].

As a result of the calculations, it turned out that St. Petersburg has the highest value of the innovation capacity assessment indicator; in addition, for the entire study period it has been growing from 2.050 to 2.156 conventional units. The Vologda, Pskov and Arkhangelsk regions have the lowest estimates of the innovative potential. Despite the lowest value of the indicator, the Pskov Oblast showed a significant increase by 0.263 conventional units (Tab. 5)

Table 5

The value of the integral indicator of the assessment of innovative potential of economic entities and the Northwestern Federal District, conventional units

Region	2005	2010	2011	2012	2013	2014
NWFD	1.047	1.065	1.069	1.106	1.103	1.112
The Republic of Karelia	0.857	0.902	0.880	0.869	0.892	0.919
Komi Republic	0.935	0.961	1.011	1.108	1.086	1.155
Arkhangelsk Oblast	0.853	0.801	0.816	0.870	0.901	0.850
Vologda Oblast	0.807	0.782	0.818	0.892	0.755	0.706
Kaliningrad Oblast	1.072	1.012	1.009	0.977	1.006	1.006
Leningrad Oblast	0.910	0.943	0.921	0.943	0.926	0.916
Murmansk Oblast	0.946	0.958	0.967	1.010	1.024	1.049
Novgorod Oblast	0.824	0.834	0.829	0.845	0.875	0.958
Pskov Oblast	0.540	0.681	0.724	0.811	0.784	0.803
Saint Petersburg	2.050	2.132	2.056	2.005	2.135	2.156

Table 6

The distribution of NWFO subjects in terms of innovative capacity

№	Level of innovation potential	Value	Regions
1	Extremely low	Less than 1.0	Vologda Oblast, Pskov Oblast, Arkhangelsk Oblast, Leningrad Oblast, Republic of Karelia, Novgorod Oblast
2	Low	From 1.0 to 1.3	Republic of Komi, Kaliningrad Oblast, Murmansk Oblast
3	Average	From 1.3 to 1.6	—
4	High	More than 1.6	Saint Petersburg

Using the results obtained, it is possible to identify 4 groups of regions according to the level of innovative potential (Tab. 6): extremely low, low, medium and high. It is worth noting that most of the subjects of the Northwestern Federal District have a low level of innovative potential at the moment, which once again indicates the need to introduce incentive measures from the state.

To build a forecast, it is possible to use the regression analysis method (1):

$$y = -415163 - 0.068x_1 - 0.081x_2 - 0.973x_4 - 2194x_5 + 7864x_7 + 4696x_8 - 3351884x_9 + 362876x_{11} + 403225826x_{14} + 6.959x_{15} + 1.351x_{18} + \varepsilon, \quad (1)$$

where y – the volume of innovative goods and services, million rubles;

x_1 is the export of technology and technical services, mln;

x_2 is the import of technology and technical services, mln;

x_4 is the GRP per capita of the region, rubles;

x_5 is the number of personal computers per 100 workers in the region, in units;

x_7 is the share of personnel engaged in research and development s in the total number of employees in the regional economy;

x_8 are the R&D expenditures per 10 thousand workers in the region, mln;

x_9 is the number of scientific organizations per 10,000 workers in the region;

x_{11} is the number of created objects of intellectual property per 10,000 workers in the region's economy;

x_{14} is the share of organizations engaged in research and development in the total number of enterprises in the region;

x_{15} are the advanced production technologies used, units;

x_{18} are the costs for technological innovation, mln;

ε is the random deviation.

To fulfill the forecast, 3 development options were calculated: with the maintenance of current trends (Tab. 7), with the improvement of the values of factors (Tab. 8), with a decrease in the values of factors (Tab. 9). Provided that the same growth rates are maintained over the next ten years, we obtain the following values for the volume of innovative goods, works and services.

Option 1. Maintaining current trends in the development of the Northwestern Federal District

Table 7

Forecast of the volume of innovative goods, works and services

Year	Volume of innovative goods and services, million rubles.	Year	Volume of innovative goods and services, million rubles.
2015	446981.9	2021	1438913.4
2016	555169.2	2022	1713202.4
2017	681689.2	2023	2033053.5
2018	829538.6	2024	2405972.9
2019	1002205.9	2025	2840724.1
2020	1203753.3		

Option 2. Positive growth of independent factors

In the second case, where the growth of all indicators included in the regression model was taken into account, the volume of innovative goods and services was systematically increasing from year to year at a much higher rate than in the first variant (Tab. 8)

In the third case, a pessimistic option was calculated, where the growth rates of all indicators were negative. It turned out that even a slight decrease in the parameters included in the linear regression equation leads to a significant decrease in the volume of innovative goods, works and services (Tab. 6).

Table 8

Year	Volume of innovative goods and services, million rubles.	Year	Volume of innovative goods and services, million rubles.
2015	454588.2	2021	1539882.6
2016	571756.9	2022	1844954.8
2017	709045.7	2023	2203334.5
2018	869972.5	2024	2624553.2
2019	1058682.3	2025	3119899.8
2020	1280062.9		

Option 3. Pessimistic option

Table 9

Year	Volume of innovative goods and services, million rubles.	Year	Volume of innovative goods and services, million rubles.
2015	342998.0	2021	273859.3
2016	331431.3	2022	262475.9
2017	319865.5	2023	251158.6
2018	308313.8	2024	239915.4
2019	296788.2	2025	228753.7
2020	285299.9		

Thus, the obtained linear model has a high degree of reliability and allows to predict the volume of innovative goods, works and services produced in the Northwestern Federal District with a minimum deviation. The considered variants of the forecast confirm the necessity of constant monitoring of the innovation situation in the region, since even a small decrease in the parameters leads to a significant decrease in the resultant factor.

Conclusions. Based on the results obtained, the following conclusions were drawn:

1. The Northwestern Federal District as a whole has a high rate of current innovation activity. However, the majority of economical entities (Pskov, Novgorod, Arkhangelsk regions and the Republic of Karelia) is characterized by a low level of innovative activity. The main innovative economic actors in the region are the city of St. Petersburg and the Kaliningrad Oblast. The method of assessment includes an analysis of various spheres of economic activity, which

allows to use the results of the analysis in the development of measures to stimulate innovation and investment activity in economic entities.

2. St. Petersburg has the greatest value of the innovation potential evaluation index, which can be explained not only by the high level of development in all spheres of the economy, but also by its favorable economic and geographical position. At the same time, many NWFD entities are characterized by a low level of innovative potential of subjects. Therefore, in order to stimulate innovative activity necessary in the subjects of the federation it is necessary to:

- improve the technological equipment of the economic entities (increase in investments in fixed assets);
- strengthen the financial and economic status of the subjects by attracting major investors and business angels; facilitate tax and customs privileges);
- improve the efficiency of information and communications technologies subjects, through the provision of subsidies for the development of ICT, as well as the formation of the state order for production and implementation of IT-technologies.

3. The forecast of innovative products, works and services produced in all subjects in the Northwestern Federal District in 2015–2025 has been made in this paper. The data show how strongly the resulting factor depends on the variables of the equation: a slight reduction in the growth rate of variables leads to a significant reduction in the volume of innovative products in the region.

In view of the above, it must be also mentioned that the measures of state stimulation of innovation activity can and should significantly improve the innovation and investment activities in the economic subjects of the federation, which ultimately has a positive effect on increasing the innovation potential of the entire Northwestern Federal District, and on increasing the volume of the much-needed innovative products.

Directions for further research. In the course of further research, the measures of the governmental regulation which can best stimulate the innovative activity of enterprises will be studied in more detail; in addition, the roles of business incubators, technology parks and technopolises in the formation of regional innovation systems will be studied.

REFERENCES

- [1] O nauke i gosudarstvennoi nauchno-tekhnicheskoi deiatel'nosti [On science and state scientific-technical activities], Feder. zakon № 127-FZ, s izm. na 13.07.2015 g.
- [2] S.G. Alekseev, Ekonomicheskie problemy regionov i otraslevykh kompleksov [Economic problems of regions and branch complexes], Problemy sovremennoi ekonomiki, 2(30) (2009).
- [3] I.M. Bortnik, V.G. Zinov, Indikatory innovatsionnogo razvitiia regionov Rossii dlia tselei monitoringa i upravleniia [Indicators of innovative development of Russian regions for the purposes of monitoring and control], Innovatsii, 11(181) (2013) 2–13.
- [4] S.P. Bystritskii, V.K. Zausaev, I.Iu. Krivoruchko, Innovatsionnyi potentsial vostochnykh regionov Rossii [Innovative potential of Russia's Eastern regions], EKO, (10) (2005) 40–52.
- [5] A.S. Dubinin, Sushchnost' i metody otsenki innovatsionnoi aktivnosti regiona [The nature and methods of evaluation of innovative activity in the region], Vestnik Novgorodskogo gosudarstvennogo universiteta, (61) (2011) 27–30.
- [6] P. Druker, Biznes i innovatsii [Business and innovation]: per. s angl. Izd. dom Vil'iams, Moscow, 2007. 432 p.
- [7] E.V. Erokhina, Innovatsionnaia aktivnost' regiona: problemy, otsenka i vozmozhnosti stimulirovaniia [Innovative activity of region: problems, assessment, and opportunities to promote], Obschestvo: politika, ekonomika, pravo, (2) (2015) 67–71.
- [8] Issledovanie KPMG «Perspektivy mirovogo promyshlennogo sektora. Boevaia gotovnost' nomer odin: promyshlennyi sektor gotovitsia k transformatsii» [The KPMG study «The prospects of the global industrial sector. Combat readiness number one: the industrial sector is preparing for transformation»], 2015 g. URL: <http://www.kpmg.com/ru/ru/issuesandinsights/articlespublications/pages/global-manufacturing-outlook-2015.aspx>
- [9] D.P. Malyshev, O.S. Petrova, Innovatsionnaia deiatel'nost' v sub"ektakh Rossiiskoi Federatsii: problemy i perspektivy razvitiia [Innovative activities in the constituent entities of the Russian Federation: problems and prospects], Pskovskii regionologicheskii zhurnal, (15) (2013) 48–62.
- [10] E.A. Mil'skaia, Strategicheskoe upravlenie innovatsionno-aktivnym predpriiatiem [Strategic management of innovation-active enterprise], Izd-vo Politekhn. un-ta, St. Petersburg, 2011. 296 p.

[11] **E.A. Mil'skaia**, Innovatsionno-promyshlennaia politika gosudarstva kak faktor realizatsii innovatsionnogo potentsiala predpriatii [Innovative industrial policy of the state as the factor of realization of innovative potential of enterprises], Teoreticheskie osnovy formirovaniia promyshlennoi politiki. Pod red. prof. A.V. Babkina, Izd-vo Politekhn. un-ta, St. Petersburg, 2015.

[12] **G.N. Moskalenko**, Innovatsii i metody otsenki ikh effektivnosti [The innovations and methods to assess their effectiveness], 2012 g. URL: <http://journal-ael.intelbi.ru/main/wp-content/uploads/2011/04/G.N.-Moskalenko.pdf>

[13] **T.V. Pogodina**, Ekonomicheskii analiz i otsenka innovatsionnoi aktivnosti i konkurentosposobnosti regionov Privolzhskogo federal'nogo okruga [Economic analysis and estimation of innovative activity and competitiveness of the Volga Federal district], Ekonomicheskii analiz: teoriia i praktika, (5) (2004) 16–22.

[14] Reiting innovatsionnykh regionov: dlia tselei monitoringa i upravleniia: versii 2015-1.0 [Rating of innovative regions: for the purposes of monitoring and management: version 2015-1.0], Assotsiatsiia innovatsionnykh regionov Rossii. URL: http://www.i-regions.org/files/file_47.pdf.

[15] Publikatsiia Federal'noi sluzhby gosudarstvennoi statistiki «Promyshlennost' Rossii» [Publication of the Federal state statistics service «Industry of Russia»], 2014 god. URL: <http://www.gks.ru:statistics/publications>

[16] Federal'naia sluzhba gosudarstvennoi statistiki. Regiony Rossii. Sotsial'no-ekonomicheskie pokazateli [Federal state statistics service. The Regions Of Russia. Socio-economic indicators] – 2015 g.

Mil'skaya E.A. E-mail: santa-2000@mail.ru

Buchkova, A.V. E-mail: nastybuchkova@ya.ru

[17] Regiony Rossii. Sotsial'no-ekonomicheskie pokazateli 2015 [The Regions Of Russia. Socio-economic indicators 2015]: ofits. sait feder. sluzhby gos. statistiki RF. URL: http://www.gks.ru/bgd/regl/b15_14p/Main.htm

[18] Reiting innovatsionnykh regionov: dlia tselei monitoringa i upravleniia: versii 2015-1.0 [Rating of innovative regions: for the purposes of monitoring and management: version 2015-1.0], Assotsiatsiia innovatsionnykh regionov Rossii. URL: http://www.i-regions.org/files/file_47.pdf

[19] **I.N. Rykova**, Metodicheskie aspekty otsenki innovatsionnogo razvitiia regionov i monitoringa rezul'tatov innovatsionnoi deiatel'nosti (na primere g. Moskvy) [Methodological aspects of evaluation of innovative development of the regions and monitoring the results of innovation activity (on the example of Moscow)], Doklad instituta innovatsionnoi ekonomiki Finuniversiteta. – 2012 g. URL: http://www.fa.ru/institutes/efo/Documents/Rykova_04.10.2012.pdf

[20] **E.V. Pustynnikova**, Protsessy integratsii ekonomicheskikh sistem v regional'nye klasteri (na primere Ul'ianovskoi oblasti) [The process of integration of economic systems in regional clusters (by the example of Ulyanovsk region)]. Ministerstvo obrazovaniia i nauki Rossiiskoi Federatsii, Gos. obrazovatel'noe uchrezhdenie vyssh. prof. obrazovaniia Ul'ianovskii gos. un-t. Ul'ianovsk, 2011.

[21] **A.O. Novikov, A.V. Babkin**, Innovatsionnaia sistema predpriatii: sostoianii i perspektivy razvitiia [The innovative system of the enterprise: state and prospects of development], St. Petersburg State Polytechnical University Journal. Economics, 4(61) (2008) 208–218.

СПИСОК ЛИТЕРАТУРЫ

[1] О науке и государственной научно-технической деятельности : Федер. закон № 127-ФЗ, с изм. на 13.07.2015 г.

[2] **Алексеев С.Г.** Экономические проблемы регионов и отраслевых комплексов // Проблемы современной экономики. 2009. № 2(30).

[3] **Бортник И.М., Зинов В.Г.** Индикаторы инновационного развития регионов России для целей мониторинга и управления // Инновации. 2013. № 11(181). С. 2–13.

[4] **Быстрицкий С.П., Заусаев В.К., Криворучко И.Ю.** Инновационный потенциал восточных регионов России // ЭКО. 2005. № 10. С. 40–52.

[5] **Дубинин А.С.** Сущность и методы оценки инновационной активности региона // Вестник Новгородского государственного университета. 2011. № 61. С. 27–30.

[6] **Друкер П.** Бизнес и инновации: пер. с англ. М.: Изд. дом Вильямс, 2007. 432 с.

[7] **Ерохина Е.В.** Инновационная активность региона: проблемы, оценка и возможности стимулирования // Общество: политика, экономика, право. 2015. № 2. С. 67–71.

[8] Исследование КПМГ «Перспективы мирового промышленного сектора. Боевая готовность номер один: промышленный сектор готовится к трансформации», 2015 г. URL: <http://www.kpmg.com/ru/ru/issuesandinsights/articlespublications/pages/global-manufacturing-outlook-2015.aspx>

[9] **Мальшев Д.П., Петрова О.С.** Инновационная деятельность в субъектах Российской Федерации: проблемы и перспективы развития // Псковский регионологический журнал. 2013. № 15. С. 48–62.

- [10] **Мильская Е.А.** Стратегическое управление инновационно-активным предприятием. СПб.: Изд-во Политехн. ун-та, 2011. 296 с.
- [11] **Мильская Е.А.** Инновационно-промышленная политика государства как фактор реализации инновационного потенциала предприятий // Теоретические основы формирования промышленной политики / под ред. проф. А.В. Бабкина. СПб.: Изд-во Политехн. ун-та, 2015.
- [12] **Москаленко Г.Н.** Инновации и методы оценки их эффективности, 2012 г. URL: <http://journal-aael.intelbi.ru/main/wp-content/uploads/2011/04/Г.Н.-Москаленко.pdf>
- [13] **Погодина Т.В.** Экономический анализ и оценка инновационной активности и конкурентоспособности регионов Приволжского федерального округа // Экономический анализ: теория и практика. 2004. № 5. С. 16–22.
- [14] Рейтинг инновационных регионов: для целей мониторинга и управления: версия 2015-1.0 // Ассоциация инновационных регионов России. URL: http://www.i-regions.org/files/file_47.pdf.
- [15] Публикация Федеральной службы государственной статистики «Промышленность России», 2014 год. URL: <http://www.gks.ru: statistics/publications>
- [16] Федеральная служба государственной статистики. Регионы России. Социально-экономические показатели – 2015 г.
- [17] Регионы России. Социально-экономические показатели 2015: офиц. сайт федер. службы гос. статистики РФ. URL: http://www.gks.ru/bgd/regl/b15_14p/Main.htm
- [18] Рейтинг инновационных регионов: для целей мониторинга и управления: версия 2015-1.0 // Ассоциация инновационных регионов России. URL: http://www.i-regions.org/files/file_47.pdf
- [19] **Рыкова И.Н.** Методические аспекты оценки инновационного развития регионов и мониторинга результатов инновационной деятельности (на примере г. Москвы) // Доклад института инновационной экономики Финуниверситета. – 2012 г. URL: http://www.fa.ru/institutes/efo/Documents/Рыкова_04.10.2012.pdf
- [20] **Пустынникова Е.В.** Процессы интеграции экономических систем в региональные кластеры (на примере Ульяновской области) / Министерство образования и науки Российской Федерации, Гос. образовательное учреждение высш. проф. образования Ульяновский гос. ун-т. Ульяновск, 2011.
- [21] **Новиков А.О., Бабкин А.В.** Инновационная система предприятия: состояния и перспективы развития // Научно-технические ведомости СПбГПУ. Экономические науки. 2008. № 4(61). С. 208–218.

Мильская Е.А. E-mail: santa-2000@mail.ru

Бычкова А.В. E-mail: nastybuchkova@ya.ru

Статья поступила в редакцию 28.02.17