

The monitoring of the subject and object of the economic activity population in the innovative sector

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Abstract. The Russian Government proclaimed the modernization course of the country. It causes the need of the innovative activity increase of economic activity subjects as the strategic competitiveness of our country depends on it in the world economy. The monitoring of innovative activity has to become the most important element of the innovative economy formation through the research of the economically active population. The research consists in an organic combination of consecutive researches and supervisions which are united by the general function for the purpose of the changes in the innovative sector identification. The purpose of carrying out the monitoring is receiving the feedback about the efficiency of the innovative activity and about the role of economically active population in the innovative sector.

[Sibirskaya E.V., Stroeva O.A., Gubareva L.I., Mikheykina L.A. **The monitoring of the subject and object of the economic activity population in the innovative sector.** *Life Sci J* 2014;11(8s):292-296] (ISSN:1097-8135). <http://www.lifesciencesite.com>. 65

Keywords: the monitoring, the economically active population, the innovative sector

Introduction

In 2012 the Russian Federation was admitted to the World Trade Organization. After these developments it is necessary to take effective steps for the competitiveness growth of economy on the basis of innovative development of the country and regions. Therefore, the innovative scenario for the Russian economy is unique because it allows to increase the rates of economic growth, to become integrated into a global economic space, to solve social and economic problems successfully and to reduce the difference of a gross domestic product income per capita between the developed countries and Russian Federation.

But the currency of innovative development is dictated to not only external factors, but also internal requirements of society such as the need of ensuring the effective economic development. Besides, the strategic competitiveness of Russia depends on the innovative activity of economic activity subjects in the world economy.

And at high level of an innovative susceptibility of national economy the innovative component of the Russian economy will start developing and, as a result, it provides the capital inflow, and the necessary experience for implementation of innovative projects and personnel training in this direction will emerge. The emphasis on studying of economically active population involvement to the innovative sector is the basis of research methodology.

The annual examination of innovative activity is conducted in a form of the federal statistical supervision No. 4 - An innovation - "The data about the innovative activity of the

organizations" [1]. The level of innovative activity, the activity which is connected with the realization of technological (grocery and process), organizational, marketing and ecological innovations is studied in the research; the expenses on types of innovations and types of innovative activity, the financing sources; the results of innovative activity including the scales of innovative production and its distribution; the technological exchange, the sources of information and cooperation communications in the development of new products and productions; the economic, production and other factors interfering with the innovations are studied in the innovation survey. At the moment the innovative activity didn't become a basis of social and economic development of the country. In the native economy it isn't observed the essential technological breakthrough and the factors of intensive mass development of researches and developments results [2]. The low innovative activity is specific for all types of economic activity, and also for all types of innovations and in order to estimate the scales we carried out the monitoring of subject and object structure of economic activity of the population in the field.

Material and methods

The low level of innovative activity remains in Russia in spite of the realized course on the innovative model of the economic growth. The participants of innovative process function in various branches and activity fields. Therefore the national innovative policy and system of the incentives which create the favorable conditions for economically active population activity can affect the participants' activity. Then, the problem of monitoring of subject

and object of economically active population in the innovative sector becomes a key aspect of the research.

The researches of economically active population of Russia, including reviews of the enterprises innovative activity are carried out regularly. The Federal State Statistics Service realizes the special annual examinations of the enterprises and various categories of the population which are engaged in researches and developments.

According to the labour legislation of the country [3] the people at the age of 15-72 years are the economically active population. The quantity of Russian economically active population is given in Table 1.

Table 1. The quantity of economically active population from 2008 to 2012

| | Economically active population | of which | | percent of economically active population | percent of employed in the economy | percent of unemployed |
|--------------------------------|--------------------------------|-------------------------|------------|---|------------------------------------|-----------------------|
| | | employed in the economy | unemployed | | | |
| Economically active population | | | | | | |
| 2008 | 75700 | 71003 | 4697 | 67,4 | 63,2 | 6,2 |
| 2009 | 75694 | 69410 | 6284 | 67,6 | 62,0 | 8,3 |
| 2010 | 75478 | 69934 | 5544 | 67,7 | 62,7 | 7,3 |
| 2011 | 75779 | 70857 | 4922 | 68,3 | 63,9 | 6,5 |
| 2012 | 75676 | 71545 | 4131 | 68,7 | 64,9 | 5,5 |

The source: it is made by the author on the basis of Federal State Statistics Service data

The data from the table 1 show that the quantity of economically active population is 75 676 thousand people in 2012. And it is below than the indicator of 2011 (75779 thousand people) but it is higher than the indicator of 2010 (75478 thousand). Despite the small recession of the quantity in 2010, the level of economic activity increased in comparison with 2009. This fact is connected with the reduction of the unemployed quantity and the increase of the employed in the economy. Besides, the tendency to economic activity gradual increase is obvious.

For the last five years the dynamics of the population economic activity have been equal and it has tended to increase. This fact is shown in Figure 1.

As a result among economically active population, the employed in the economy was 70857 thousand people in 2011. The results analysis of indicators shows that it was succeeded to contain the increase of the crisis phenomena on a labor market and to improve a number of the indicators characterizing a condition of a labor market in 2011 and 2012 which were recorded in pre-crisis 2008 thanks to realization the programs for stabilization in a labor market.

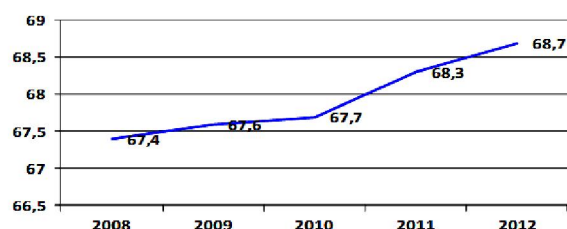


Figure 1. Percent of economically active population in Russian Federation from 2008 to 2012

According to the data of International Labor Office [4], the specialized statistic institution of the United Nations, I made the table which considered the data on some indicators (the population, the quantity of economically active population, per cent of economic activity) from 2008 for 2010 at six various countries of the world.

Nicholas Eberstadt, the political economist [5], is convinced that negative demographic processes in Russia will affect on the economic growth and the international impact of the country. He convinces that the bigger inflow of immigrants to the country is the only way to turn over the diminishing population.

In turn, Murray Feshbakh [6] adds that the inflow of migrants to Russia is deficient for population growth as distinct from the USA. According to him, the migration peak to Russia was in 2008 and 2009, and it is possible that this process will begin to decline.

The interrelation of migration and economic activity of the population is one of the most important features of any country's economic growth. Actually the biggest part of migrants promotes the increase of economic activity and job creation [7].

Besides, the migration can play a positive role in easing of various aspects of financial crisis situation and can make a contribution to overcoming of economic recession [8].

There are the small differences in the statistical data regarding the Russian Federation between Federal State Statistics Service and statistics of the United Nations. A.L. Kevesh, the secretary of the Federal State Statistics Service of the Russian Federation [9], suggests that it is possible to speak about compliance with the Russian statistics and the international standards. At the same time it is necessary to recognize our statistic system has some problems. It is possible to speak about the compliance of the Russian statistics to the international standards. The accession of Russia to Special Data Dissemination Standard of IMF in January, 2005, and also results of estimated missions

of Organisation for Economic Co-operation and Development, the IMF, the World Bank and Eurostat testify this fact [10].

At the same time it is necessary to carry out the considerable work on full reduction of the Russian statistical methodology in accordance with the international practice and the advanced approaches which apply by leading statistical powers. In particular, it concerns the development of national accounts, economic and social classifications, and social statistics.

The researches regarding economically active population of Russia and foreign countries allowed us to consider the position of the country in the world economy. Thus, the comparative analysis of economically active population data shows us that the level of economic activity allows the Russian Federation to develop the innovative activity in the country and to involve the economically active population in process of innovations creation and introduction.

In order to determine the quantity of the economically active population involved in innovative activity in recent years, the following categories of economically active population in the innovative sector are allocated:

1. The persons which don't have works but they wish to work in the innovative sector
2. The businessmen;
3. The involved in innovative activity personnel;
4. The students who study in the priority directions.

These categories are components of the research subject. The state statistics shows that the population quantity was 5029 thousand people in 2011 that makes about 7.1% of economically active population quantity of the country. But it is possible to draw a conclusion that there was the quantity growth in comparison with 2010.

There were 3682 thousand enterprises which dealt with developments and researches in 2011. It should be noted that there was the recession of such companies by 2005. The subsequent their quantity was approximately at equal level. It is important to note that the quantity of universities was increased in innovative activity and it reached the maximum peak (581) by 2011. It is connected with the government active policy on support of research activity in the higher education.

One of the most important categories of economically active population in the innovative sector is the personnel involved in work of this direction. It is possible to retrace its dynamics depending on activity sectors. There was a sharp recession of its quantity in comparison with 2000. So,

for example, 887729 people dealt with researches and developments in 2000 but this quantity was reduced to 735273 people in 2011. This fact is connected with an unstable situation in the country in the science and education sector.

Table 2. The enterprises which deal with developments and researches

| | 2000 | 2005 | 2007 | 2009 | 2010 | 2011 |
|--|-------------|-------------|-------------|-------------|-------------|-------------|
| altogether | 4099 | 3566 | 3957 | 3536 | 3492 | 3682 |
| Research organizations | 2686 | 2115 | 2036 | 1878 | 1840 | 1782 |
| Design departments | 318 | 489 | 497 | 377 | 362 | 364 |
| Developers and design and survey providers | 85 | 61 | 49 | 36 | 36 | 38 |
| Pilot-producing plants | 33 | 30 | 59 | 57 | 47 | 49 |
| Higher education establishments | 390 | 406 | 500 | 506 | 517 | 581 |
| Industrial enterprises | 284 | 231 | 265 | 228 | 238 | 280 |
| Others | 303 | 234 | 551 | 454 | 452 | 588 |

The source: it is made by the author on the basis of collected statistics of High School of Economics data "The Science Indicators – 2011"

According to the Decree of the Russian President of 07.07.2011 No. 899 "About the ratification of the priority directions of science, technologies and equipment development in the Russian Federation and the list of critical technologies of the Russian Federation" the priority directions were accepted [11]:

1. The safety and counter-terrorism;
2. The industry of nanoscale systems;
3. The information and telecommunication systems;
4. The life sciences;
5. The perspective types of arms, military and special equipment;
6. The rational nature management;
7. The transport and space-based systems;
8. The energy efficiency, energy saving, nuclear energetic.

But the quantity of students decreased from 7.4 million people to 6.5 million from 2009 to 2011.

From this quantity the students who study in the priority directions and specialties in universities were: 248.4 thousand people in 2009, 248.7 thousand people in 2010, 253.1 thousand people in 2011.

According to data of the researches and science statistics center the total number of postgraduates accounted for 154470 people in 2009, 157437 people in 2010, and 156279 people in 2011. The number of the postgraduate students who study in the priority directions accounts for 65983 in 2009, 69084 in 2010, and 70855 in 2011. And number of

the doctoral candidates accounts for 1999 in 2009, 2099 in 2010, and 2167 in 2011 [12].

Thus, the students who study in the priority directions are the new category of economically active population in the innovative sector which accounts for 222452 in 2009, 228620 in 2010, and 229301 in 2011.

As for the last category of the economically active population in the innovative sector that is the persons which don't have works but they wish to work in the innovative sector such indicators aren't considered by Federal State Statistics Service at present [1].

Thus, it is possible to count the total number of economically active population of the country in the innovative sector. The data are shown in Table 4.

Table 3. The economically active population number in the innovation sector from 2009 to 2011 in Russian Federation

| Economically active population number in the innovation | 2009 | 2010 | 2011 |
|---|----------------|----------------|----------------|
| Total number | 6203 thousands | 5832 thousands | 6090 thousands |
| among them: | | | |
| Businessmen | 5145000 | 4776000 | 5029000 |
| involved in innovative activity personnel | 742433 | 736540 | 735273 |
| students who study in the priority directions | 222452 | 228620 | 229301 |
| persons which don't have works but they wish to work in the innovative sector | - | - | - |

This table shows us the dynamics of economically active population number in the innovative sector. So, the number of this category was 6203 thousands in 2009, 5832 thousands in 2010, and in 6090 thousands in 2011. The same small recession was during the same period in the quantity of economically active population. And the quantity of economically active population was 75694 thousand in 2009, 75478 thousand in 2010 and 75779 thousand in 2011.

Figures 2 and 3 show us the dynamics of economically active population and economically active population in the innovative sector during the period from 2009 to 2011. Thanks the data from these Figures, it is possible to suppose that economically active population and economically active population in the innovative sector are connected among themselves.

There are the two parts of economically active population in the official statistics. The first is the employed in the economy. The other is the unemployed. So there is the correlation of economically active population and economically active population in the innovative sector. And the change of one part of economically active population

will cause changes in the number of one of economically active population in the innovative sector categories.

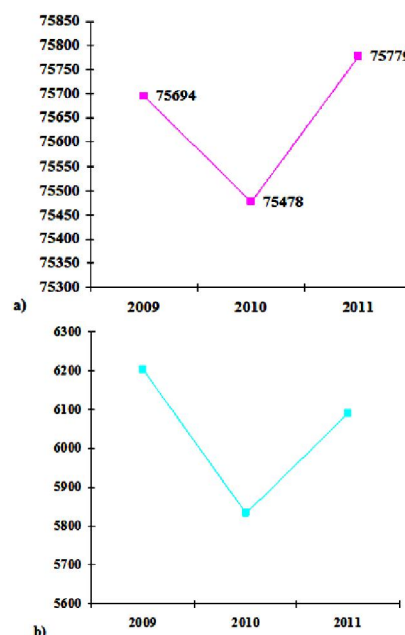


Figure 2. a) The dynamics of economically active population; b) The dynamics of economically active population in the innovative sector

Thus, the following scenarios are possible:

1. The increase of the employed in the economy will cause the increase in economically active population in the innovative sector as the number of businessmen and involved in innovative activity personnel are increased;

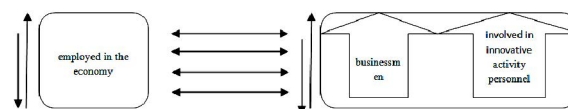


Figure 4.

2. The increase of the unemployed number involves the increase of the persons which don't have works but they wish to work in the innovative sector and the increase of economically active population in the innovative sector;

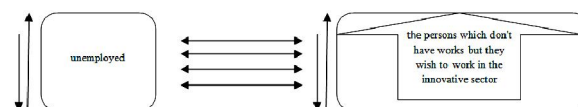


Figure 5.

3. The increase of economically active population in the innovative sector occurs at the expense of the students. It won't affect the number of economically active population.

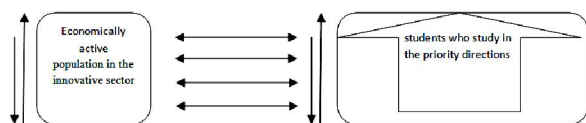


Figure 6.

The monitoring results can be used by different levels of management of economic systems innovative development: a federal (a national) level, the regional level and the local level.

Conclusion

Thanks to the research of the quantity and the level of Russian economically active population and the level of the employed in the economy and the unemployed we collected the generalizing information which allows to count the quantity of economically active population in the innovative sector of the Russian Federation on the basis of four categories. These data will allow the leadership at different levels of the economic systems to have the information which favour the definition of the population involvement in the innovative activity of the country, and also to reveal the weaknesses in the field of economically active population stimulation.

In this research we tried to illustrate the thesis about the change of the economically active population involvement role in forming of the innovative system. The conceptual construct of monitoring and the information base of Federal State Statistics Service which are formed during the statistical survey and the system of indicators set an analysis framework. It allows to correlate the scales of the studied phenomena and to carry out the international comparisons. The next step consists of a new view formation on this phenomenon, the discovery of regularities which is critical for understanding of difficult social and economic systems.

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References

1. Federal State Statistics Service. Date Views 8.01.2013 www.gks.ru/.
2. Boudeville, J.R., 1966. Problems of Regional Economic Planning. Edinburgh.
3. The Order of Rosstat from 21.12.2010 # 452. Date Views 8.01.2013 www.base.consultant.ru/cons/cgi/online.cgi?req=doc;base=LAW;n=109812.
4. Economically Active Population, Estimates and Projections (6th edition, October 2011) Date Views 10.01.2013 www.laborsta.ilo.org/applv8/data/EAPEP/eapep_E.html.
5. The Voice of America. Date Views 10.01.2013 www.golos-ameriki.ru/content/em-vm-us-russia-census-comparison-and-analysis-2011-04-03-119156489/230500.html
6. Center PY Staff. Date Views 10.01.2013 www.witikon.net/index.php?id=single-news&tx_ttnews%5Bpointer%5D=2&tx_ttnews%5Btt_news%5D=42&tx_ttnews%5BbackPid%5D=41&tx_ttnews%5BViewportPointer%5D=2&cHash=a2d0ef23ed.
7. Lundvall, B., 1992. National Systems of Innovation. L.: Pinter.
8. Common, J., 1931. Institutional Economics. The American Economic Review, 21(4): 648-657.
9. The internet interview with A.L. Kevesh. Date Views 12.01.2013 www.consultant.ru/law/interview/kevesh/
10. Stoneman, P., 1995. Handbook of the Economics of Innovation and Technical Change. London: Blackwell.
11. The decree of Russian President from 07.07.2011 №899. Date Views 14.01.2013 www.text.document.kremlin.ru/SESSION/PIL_OT/main.htm.
12. The information system of Center of science researches and statistic. Date Views 17.01.2013 www.csrs.extech.ru/.