An analysis of investment-innovation activity in Russia

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Annotation. This article is dedicated to an interpretation of Russia's investment-innovation activity. Innovations and investments are by their nature long-run oriented, which makes it impossible to view them apart from each other. The author demonstrates that investments play a twofold role in society: they can shape the inertial development of innovation activity or facilitate balanced development. The need for ensuring balanced investment and innovation activity has been pointed out in a whole number of federal and regional normative documents and programs aimed at stimulating economic development.
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Introduction

Russia is facing many objectives in the way of social-economic development, including in the area of innovation-investment activity. Based on specific findings of an industrial analysis and outlines of the economic strategy, the primary objectives are: maintaining Russia's status as one of the global centers of power, bringing the population's standard of living to the world-class level, effecting the "catch-up modernization" of the economy, and keeping up high rates of economic growth (8-10% per year over the next 10-15 years) [1].

The dynamics of the economic development of economic systems depends on the vibrancy of the investment and innovation activity of business entities and the essential strategic policy of the bodies of authority and administration at all levels. Therefore, we find it important to put together an information base that would help to not only administer monitoring of this area but facilitate making managerial decisions on stamping out stifling factors that affect the dynamics of investment in innovation activity [2].

Let us analyze the structure of investment in non-financial assets without considering small business entities and the volume of investment not observed via direct statistical methods. The largest share belongs to investment in fixed capital – about 98.4 to 98.8%, investment in intellectual property items (in accordance with the 2009 SNS system of indicators) – 0.4 to 0.5%, and expenditures for scientific-research, design-experimental, and technological activity – 0.3 to 0.4%.

As follows from Figure 1, the volume of state investment has not changed much over the last 5 years; there has been a decrease in the volume of investment in fixed capital from municipal sources, but there have been positive dynamics in the way of private investment – from 48% in 2008 to 57% in 2011, and the same volume held up in 2012 as well; virtually nothing was invested by consumer cooperation enterprises and organizations, as well as public and religious organizations; as far as mixed sources with government participation, the volume of investment somewhat decreased in 2009–2011, but positive dynamics were detected in 2012; re-created state corporations began to actively invest in fixed capital in 2011-2012.

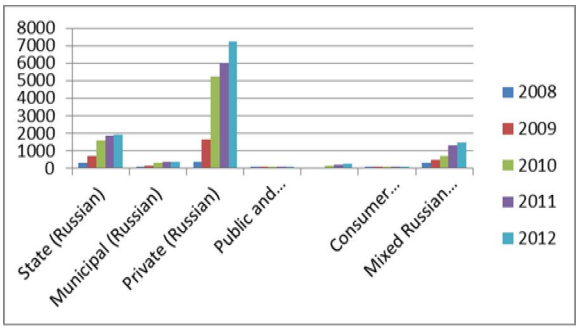

Figure 1 – Investment in fixed capital type-wise [3]

Having analyzed the data on investment activity, we would like to note that Russian companies do not intend to invest in innovations.

Table 1 provides internal expenditures for research and innovations across the Russian Federation as a whole [3].

Table 1 – Internal expenditures for research and innovations, in millions of rubles.

Internal expenditures for research and innovations:	2008	2009	2010	2011	2012
In actual then-extant prices	371080.3	431073.2	485834.3	523377.2	610426.7
In constant prices in 2000	5.57	5.49	6.07	5.87	5.89
In percentage to GDP	1.12	1.04	1.25	1.16	1.12

Thus, internal expenditures for research and innovations amount to 1.04 to 1.25% as a percentage to GDP. Table 2, provided below, indicates that the absolute quantity of internal expenditures for research and innovations in Russia is nearly 21 times lower than that in the US, 7.83 times lower than that in Japan, and 4 times lower than that in Germany.

Table 2 – Comparison of internal expenditures for research and innovations in Russia and foreign countries

Country	2012 total, in millions of dollars	% to GDP
Russia	19075.83	1.12
Great Britain	38707.5	1.77
Germany	76796.9	2.64
Israel	9921.0	4.86
China	121426.5	1.54
Korea	45293.6	3.37
USA	398194.0	2.77
France	42892.8	2.02
Sweden	12781.2	3.75
Japan	149212.9	3.42

In our view, these data indicate that it is still early to speak of the macro-level innovation and investment spheres being balanced. Let us examine the dynamics of internal expenditures for research and innovations by sources of funding across the Russian Federation (Table 3).

Table 3. Internal expenditures for research and innovations across sources of funding, in millions of rubles

All expenditures	2008	2009	2010	2011	2012
including by sources of funding:	371080.3	431073.2	485834.3	523377.2	610426.7
budget funds	228449.2	272098.8	315928.7	360334.2	400235.7
scientific organizations' own funds	30555.8	35855.1	35312.3	47407.6	73293.5
funds of non-budget funds	6649.6	6343.7	7952.7	10140.0	8808.5
funds of organizations within entrepreneurial sector	77491.6	89959.7	94529.9	85863.3	99408.1
funds of educational institutions of higher professional learning	890.0	518.1	327.2	508.2	1568.8
funds of private non-commercial organizations	248.3	674.9	377.3	556.5	966.5
funds from foreign sources	26795.8	25622.8	31406.1	18567.5	26145.5

It follows from the table that the primary player aware of the importance of the innovation sphere is the state. We shall clarify this using data provided in Table 4.

Table 4. Internal expenditures for research and innovations across sectors of activity, in millions of rubles

Years	All expenditures	Sectors of activity			
		state	entrepreneurial	higher professional education	non-commercial organizations
2008	371080.3	107984.9	238386.2	23471.9	1237.3
2009	431073.2	129871.2	271206.3	28868.6	1127.1
2010	485834.3	147023.2	303051.1	34642.2	1117.8
2011	523377.2	161988.4	316701.7	43714.0	973.1
2012	610426.7	182135.3	372088.9	55134.9	1067.6

In 2009, the Center for Regional Economic Research of the Department of Economics of A.M. Gorky Urals State University published the report [4] "Russia's Place in the World of Technology of the Future". We feel it important to make a brief overview of this research. The government commission for scientific-technical policy ratified lists of ten priority areas for the development of science and technology and seventy critical technologies.

In 1997-1998, a large-scale project on assessing the state of and prospects for the development of critical technologies was implemented at the behest of the RF government. The analysis determined that the Russian Federation was leading the way in two of seventy critical technologies – namely "non-traditional technology for extracting and processing solid fuels" and "pipeline coal slurry transportation". In many other areas, such as mathematical modeling systems, aviation and space technology, laser and ion-plasma technology, technology for protection of humans in extreme conditions, etc., Russian scientists were found to rank among what could be considered the world's best.

In most areas of knowledge, such as information technology, communications, biotechnology, and others, innovations by Russian scientists were found to be by far inferior to the best foreign products on the whole. These findings became the basis for fine-tuning the priority areas for the development of science, technology, and machinery [4].

Table 5 provides internal expenditures for research and innovations across priority areas for the development of science, technology, and machinery by sources of funding in the Russian Federation in 2012.

The primary source of funding for research and innovations (RI) across priority areas are funds from the federal budget (62.4%). Note that these funds amount to over 80% in terms of the "Living Systems" area. Only research in the area of power engineering is carried out to the tune of 52% through non-budget funds. Funds from the budgets of the constituents of the Russian Federation provide for just 1% of expenditures for RI across priority areas, including 4% in the area of rational nature management and 3%

– living systems. Thus, federal level budget funds are the primary source for the practical implementation of the priorities at issue.

Table 5. Internal expenditures for research and innovations across priority areas for the development of science, technology, and machinery by sources of funding in 2012, in millions of rubles.

Internal expenditures for scientific research and innovations across priority areas for development of science, technology, and machinery	Total	out of these, funded using funds from	
		budgets at all levels	including federal budget
	361603.7	209680.1	204909.3
out of these:			
nanosystems industry	23451.7	16233.5	15952.3
information-telecommunications systems	46609.9	29260.4	28242.3
life sciences	19918.8	16686.4	15889.6
rational nature management	29033.5	15953.3	15249.5
transport and space systems	148970.1	84294.1	83327.4
energy efficiency, energy conservation, nuclear power engineering	37318.8	14929.1	14720.9

Russia is distinguished by highly uneven economic development territorially. This unevenness is to a great degree governed by natural resource endowment, historically fashioned infrastructure, natural-climactic conditions, the population's mentality, and other objective factors.

2012 saw a slowdown in the growth of investment compared with the previous year. According to Rosstat, investment in fixed capital grew 6.7% compared with 2011. This indicator is almost twice the growth of the economy as a whole. However, it is lower than the growth of investment recorded in в 2011 (+8.3%). Investment in fixed capital grew in sixty RF constituents, whereas in 2011 positive dynamics were recorded in 66 regions. Compared with the previous year, no considerable changes in investment activity were recorded regionally. The top 5 among the regions remained the same in this indicator compared with the previous year. Nenets Autonomous Okrug and Yamalo-Nenets Autonomous Okrug are still by far ahead of other regions in the volume of investment in fixed capital per capita. They are followed by Khanty-Mansi Autonomous Okrug, Tyumen Oblast, and Sakhalin Oblast, where the indicator exceeds 300 thousand rubles per person.

Export-oriented regions are still leading the way in the volume of investment in fixed capital per capita. In all of the seven regions in this group, the indicator was upwards of 200 thousand rubles per person. No considerable changes were recorded among regions with a low volume of investment. The bottom of the list is still prevailed by regions in the agricultural-industrial cluster. Out of 13 regions with the volume of investment per capita below 40 thousand rubles per person in 2012, 10 are part of the agricultural-industrial group, while the rest 3 constituents with a low volume of investment belong to the industrial group.

While investment indicators can be found in open access sources, innovation indicators remain a mystery [5]. Having looked through statistical collections on regions and materials from thesis research by Russian scientists, we can present expenditures for technological innovation in Russia in the form of a graph (Figure 2) [6].

The figure indicates that the curve keeps crawling up, which attests to a systematic increase in the volume of expenditures for technological innovation in Russia. In 2011, according to provisional statistics, expenditures for technological innovation increased by 15637 million rubles compared with 2010.

President of the Russian Federation V.V. Putin considers the development of national science and technology specifically as one of Russia's top priorities. The country's policy on this area was formulated in documents [7] approved at the joint sitting of the Security Council of the Russian Federation, the Presidium of the State Council of the Russian Federation, and the Council for Science and High Technology under the President of the Russian Federation and ratified by the RF President.

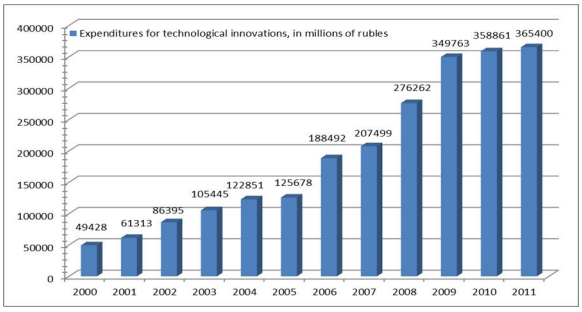

Figure 2. Expenditures for technological innovations in Russia from 2000 to 2011

According to *Deputy Managing Director of FGBU "Rossiiskoye Energeticheskoye Agenstvo" ("Russian Energy Agency") Vladimir Baskov*, only a small share of innovation-investment projects is implemented in regions, which causes the curtailing of funding for innovation activity. In 2011, the Ministry of Education and Science of the RF put 1.5 billion rubles back in the budget, which were intended for scientific innovations. Other ministries have not been able to put to use funds allocated for innovations either [8].

According to *Chairman of the Committee for Innovation of Tyumen Oblast Aleksey Sannikov*, business is not prepared today to consume promising innovations [8]. This situation is characteristic of all the regions of Russia.

Based on calculations by the Ministry of Economic Development of the Russian Federation, to ensure the implementation of modernization in

Russia, the country needs the volume of investment to increase to 35-40% of GDP (35% is the average rate in developing countries, 40% being the rate of investment in the USSR). For comparison, China's current rate of investment is 45%, Kazakhstan's – 30%, and Russia's – 20%. Based on the most modest estimates, to carry out modernization in Russia, additional investment in the amount of 70 billion dollars per year is needed [9].

The development of investment-innovation activity is possible only within the frame of systematic movement of managerial decisions circulating in innovation conditions and made in the innovation environment [10].

Thus, when it comes to the Russian economy, it is still too early to speak of investment and innovation activity being balanced. Effecting innovation processes is predicated on developing and implementing specific plans, and the process of developing and implementing has a name – it is called planning.

Note that of much interest as a planning object is innovation activity, the effecting whereof is associated with a set of interdependent factors: funding, investing, etc. In global practice, economists are increasingly using the integrated financial indicator "expenditures in investment in innovation", which helps assess a country's standing in the global economy and reveal the degree of its readiness for innovation and investment activity. This indicator is grounded in many indicators, such as the development level of the sphere of education in the country, expenditures for research and innovations, the number of patents received, etc. The most significant indicator is the volume of internal expenditures for research and innovations, including current and capital expenditures. Consequently, the search for ways of planning a balanced development of the innovation-investment spheres is crucial to the development of the economy at the macro-, meso-, and microlevel.

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