Long term forecast and programming of financing of internal costs of the innovation and investment sector of the Russian Federation

Previsión y programación a largo plazo de la financiación de los costes internos del sector de innovación e inversión de la Federación Rusa

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ABSTRACT

Financing of internal costs has always been the main factor in the functioning of any economic entity. In this paper we will focus on the industries providing breakthrough development of the economy, i.e. the so-called innovation and investment sector of the economy. These industries include: science and scientific services, engineering and metalworking, chemistry and petrochemistry, construction, IT and communications, and in recent years, agriculture. GDP growth largely depends on the effective operation of these sectors of the economy. The innovative and investment nature of the development of these economy sectors contributes to a change in the GDP structure, an increase in the share of its innovative part, an increase in high-performance jobs, etc. At the state level, it is important to understand the trends in the development of the above-mentioned sectors of the economy, the risks inherent in them, as well as the factors hindering their development. The study deals with these issues, as well as the resource support of the innovation and investment sector of the Russian economy. Based on the available data, a forecast and a program for the development of these sectors of the economy are made.

Keywords: Innovation, investment sector of economy, financing of internal costs, financing sources, forecasting.

RESUMEN

La financiación de los costos internos siempre ha sido el factor principal en el funcionamiento de cualquier entidad económica. En este artículo nos centraremos en las industrias que proporcionan un desarrollo innovador de la economía, es decir, el llamado sector de innovación e inversión de la economía. Estas industrias incluyen: servicios científicos y científicos, ingeniería y metalurgia, química y petroquímica, construcción, informática y comunicaciones, y en los últimos años, agricultura. El crecimiento del PIB depende en gran medida de la operación efectiva de estos sectores de la economía. La naturaleza innovadora y de inversión del desarrollo de estos sectores de la economía contribuye a un cambio en la estructura del PIB, un aumento en la parte de su parte innovadora, un aumento en los empleos de alto rendimiento, etc. A nivel estatal, es importante Comprender las tendencias en el desarrollo de los sectores de la economía mencionados anteriormente, los riesgos inherentes a ellos y los factores que obstaculizan su desarrollo. El estudio aborda estos temas, así como el apoyo de recursos del sector de innovación e inversión de la economía rusa. En base a los datos disponibles, se elaboran un pronóstico y un programa para el desarrollo de estos sectores de la economía.

Palabras clave: innovación, sector de inversión de la economía, financiamiento de costos internos, fuentes de financiamiento, pronósticos.

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INTRODUCTION

The problems of development of the innovation and investment sector of the economy cover a wide range of issues - from technical backwardness to infrastructure problems (Ashmarov, 2018; Minakova, 2017; Gnatyuk & Pekert, 2018; Olkhovskiy, 2018). In recent years, for a number of reasons, there has been a certain decline in the innovative activeness of scientific activity, and even the existing innovative potential is used within 4-5% (Narkevich & Narkevich, 2018; Novikov, 2017; Schwarzkopf, 2018; Moiseenko, 2017; Barghi Irani & Rezaei, 2018). For comparison, this figure in the United States exceeds 50%. Many scientific and technical developments do not become an innovative product. They remain unclaimed by agricultural production (Bogatov et al, 2017; Shcherbinina, 2017; Moiseenko, 2017; Komarova, 2018; García-Díaz et al., 2016; Abdoli, 2018).

METHODS AND MATERIALS

The paper used system, comparative, economic and mathematical, economic and statistical and other research methods. Federal laws, decrees of the President of the Russian Federation, resolutions of the Government of the Russian Federation, published works of research institutions of the RAS, statistical materials at the federal and regional levels were used as materials (Kobets, 2017; Kupryushin & Chernyatina, 2017; Mardani & Fallah, 2018).

RESEARCH RESULTS

Poor public-private support for the formation of the material base for the subsequent creation of innovations is largely determined by the long payback period of innovation and a small amount of investment by the state (Narkevich, 2018; Vernigor, 2017). Annually, the share of domestic research and development costs in Russia to GDP does not exceed 1.1% (table 1).

Because of problems with budget and extra-budgetary financing, the number of organizations engaged in scientific activities in Russia does not have a clear trend and is not a stable indicator. If in 2000 there were 4099 such organizations, in 2017 - 3944 (table 2).

Table 1 – Share of national costs in Russia's GDP and per 1 employee engaged in research

Indicators	Years					
	2000	2005	2010	2014	2015	2016
Domestic expenditures on research and development, bln. roubles	766,9	230,8	523,4	847,6	914,7	943,8
Number of employees engaged in research, thousand people	887,7	813,2	736,6	732,3	738,9	722,3
Domestic research and development costs to GDP , %	1,05	1,07	1,13	1,07	1,10	1,10
Internal research and development costs per 1 employee engaged in research and development, thousand rubles	180,1	590,1	1418,7	2266,7	2410,8	2548,2

Table 2 - Organizations performed research and developments in Russia, by type, at the end of the year

	Years					
	2000	2005	2010	2015	2016	2017
Number of organizations – total	4099	3566	3492	4175	4032	3944
including:						
research organizations	2686	2115	1840	1708	1673	1577
construction organizations	318	489	362	322	304	273
design and prospecting organizations	85	61	36	29	26	23
pilot plants	33	30	47	61	62	63
educational institutions of higher education	390	406	517	1040	979	970
industrial organizations that had research, design and development units	284	231	238	371	363	380
other	303	234	452	644	625	658

A negative trend is a decrease in the number of research organizations and universities that are specialized in their field of knowledge, which focus on researchers engaged in narrowly focused scientific topics. The number of research and development personnel is also unstable (table 3). Every year the number of researchers in Russia decreases. In 2017, there were about 360 thousand researchers. This is catastrophically insufficient taking into account the backwardness of the scientific sphere of the Russian Federation. Among 10343 researchers, only 1384 of these people are doctors of science, that is, those who are engaged in fundamental research, providing technological and scientific breakthrough. The personnel problem today is relevant for science.

Table 3 - Number of researchers engaged in research and development in the Russian Federation, people

	Years			
	2010	2015	2016	2017
Number of researchers – total	368915	379411	370379	359793
including on agricultural sciences	12734	11296	11066	10343
among them				
Candidate of Sciences	5004	4592	4483	4183
Doctors of Sciences	1542	1551	1487	1384

In the emerging multipolar world, there are four main centers of scientific progress – the United States (35% of global R & D spending on purchasing power parity), the European Union (24%), Japan and China (about 12% each). Unfortunately, the Russian Federation is not included in the group of leaders. We account for less than 2% of global R & D spending at purchasing power parity and 1% at the exchange rate. Thus, Russia lags behind the US in R & D spending by 13 times, China by 11 times, the UK by 1.2 times, Germany by 3 times, Japan by 4.5 times (table 4).

Table 4 – Domestic expenditure on research and development in the developed world, $ million

Country	Years				
	2000	2010	2013	2014	2015
Russia	10726,9	33083,3	38609,6	39827,4	38143,0
Growth dynamics, %	-	в 3,1 раза	116,7	103,2	95,8
Great Britain	25129,9	37609,3	41532,1	44163,8	46259,8
Growth dynamics, %	-	149,7	110,4	106,3	104,7
Germany	53632,8	87131,0	102905,5	109802,5	114778,1
Growth dynamics, %	-	162,5	118,1	106,7	104,5
USA	269513,0	410093,0	457612,0	479358,0	502893,0
Growth dynamics, %	-	152,2	133,5	104,8	104,9
Japan	98758,0	140603,1	164655,8	170512,3	170003,0
Growth dynamics, %	-	142,4	117,1	103,6	99,7
China	33044,5	213460,1	334135,5	370115,9	408829,0
Growth dynamics, %	-	в 6,4 раза	156,5	110,8	110,5

Domestic R & D expenditures in Russia are not growing as fast as in developed countries, and therefore are not able to ensure the qualitative implementation of the priority areas in science and innovation, which are designated in the legal regulation of scientific and innovative activities over the past 5 years by the President and the Government of the Russian Federation. China's economy, for example, being the second economy in the world, provides at least 10% increase in research and development costs in recent years, and this indicator is catching up with the United States. It turns out that the whole world increases spending on R & D, increasing the potential of researchers, and Russia reduces. At the same time, a significant number of scientific funds were created.

The second important problem in our opinion is the level of salaries of researchers and the problem of reproduction of highly qualified personnel. In 2016, the average monthly wage in education in Russia, according to Rosstat amounted to about 28,088 rubles, and in scientific and technical activities 57, 179 rubles. For comparison, in Germany the professor conducting scientific research receives not less than 7 thousand euros. Income taxes are about 50%, and thus "net" is about 3.5 thousand euros or more than 210 thousand rubles per month, and this does not include consultations held for economic entities. In practice, the dynamics of low wages of researchers contributes to the "aging" of science and migration of young promising highly qualified personnel in production.

Thus, low wages, lower R & D costs contributed to a significant reduction in the number of organizations engaged in research and development. For the same reason, the number of studies decreased. At the same time, a positive trend in terms of quantitative analysis is the increase in the number of patents. However, the number of high-tech industries created using patents does not exceed 1.7% in 2015, which indicates the formalism of obtaining patents, the lack of interest to them by commercial organizations and the state (table 5). Based on the above, it is difficult to find objectively positive trends in the development of scientific and inventive activity. Even in the "Forecast-2030" (Chapter 5) and "Forecast of scientific and technological development of the Russian Federation", there are small amounts of funding for research, and the number of researchers is reduced to 40% in the structure of personnel engaged in research and development

Table 5- Main indicators of development of science and inventive activity in Russia 1,2,4,5

	1990	1995	2000	2005	2010	2000 to 1990, %	2010 to 2000	2015	2020	2030
Number of organizations performing research and development including:	4646	4059	4099	3566	3492	88,2	85,2	4175	2853	1892
research organizations	1762	2284	2686	2115	1840	152,4	68,5	1708	1608	1512
design engineering bureau	937	548	318	489	362	33,9	113,8	322	320	318
design organizations	593	207	85	61	36	14,3	42,4	29	25	22
universities	453	395	390	406	517	86,1	132,6	1040	900	40
Number of personnel engaged in research and development, thousand people including	1943	1061	888	813	737	45,7	83,0	739	721	704
researchers	1227	518,7	425,9	391,1	368,9	34,7	86,6	379,4	361,3	344,1
Domestic research and development costs , % of GDP	2,03	0,85	1,05	1,07	1,16	51,7	110,5	1,10	2,0	3,0
Patent applications for inventions filed including	no	22202	28688	32254	42500	-	148,1	45517	64508	96762
national applicants	no	17551	23377	23644	28722	-	122,9	29269	40502	60960
Issued patents for inventions	no	19678	17592	23390	30322	-	172,4	34706	49026	73539
Number of created advanced manufacturing technologies, including	no	893	688	637	864	-	125,6	1398	2796	4194
using patents for inventions	no	no	222	234	355	-	159,9	589	1118	2097

This will entail a reduction in the number of organizations performing research, primarily research organizations. Based on the decrease in the number of researchers, in the calculation - 177 people per organization engaged in R & D, the number of research institutes in 2030 will be 1892. The number of universities engaged in research according to these forecasts should be no more than 40.

Trends and dynamics of the innovation and investment sector are not stable and do not show any clear patterns. This sector of the economy includes: science and scientific support, engineering and machine processing, chemistry and petrochemistry, construction and information technology and communications. Data on these sectors of the economy can be found in the data of Rosstat until 2005 inclusive. Later, these data could be taken conditionally, as the methodology of statistical observation changed. In general, the investment and innovation sector of the Russian Federation cannot be called effective. In 2014, with 19.3% of the workforce, 29.3% of fixed assets and 7.8% of investments, this sector of the economy produced about 24.5% of gross output. This sector of the economy was more efficient in 2004.

The most efficient are the sub-sectors of construction, engineering and metalworking, providing a maximum share of output, respectively 7 and 12% in 2014. In the "Forecast-2030" (Chapter 5), "Forecast of scientific and technological development of the Russian Federation" and "Russia-2050: strategy of development" there are forward-looking indicators which should be achieved by innovative-investment sector, in particular indicators on science and scientific services, partially for other sub-sectors. Other indicators by subsectors are calculated using the trend extrapolation method. The sum of the results of calculations for subsectors, respectively, will give a generalized result for the whole sector.

Share in the number of employed in mechanical engineering and metalworking.

The linear equation of the trend has the form y = bt + a (1)

$$R^2 = 1 - \frac{2.94}{22.16} = 0.867 \quad (8)$$

That is, in 86.73% of cases, t affects the change in y. In other words, the accuracy of the trend equation selection is high. Economic interpretation of model parameters is possible - with each time period t the value of Y decreases by 3.1 units on average.

Share of fixed assets in mechanical engineering and metalworking.

The equation of the trend:

y = -3,05 t + 11,167 (9)

Coefficient of determination.

$$R^2 = 1 - \frac{3.682}{22.287} = 0.835 \quad (10)$$

That is, in 83.48% of cases, t affects the change in y. In other words, the accuracy of the trend equation selection is high. Economic interpretation of model parameters is possible - with each time period t the value of Y decreases by 3.05 units on average.

Share of investments in mechanical engineering and metalworking.

The equation of the trend:

y = -1,61 t + 3,52 (11)

Coefficient of determination.

$$R^2 = 1 - \frac{5.507}{31.428} = 0.825 \quad (12)$$

That is, in 82.48% of cases, t affects the change in y. In other words, the accuracy of the trend equation selection is high. A possible economic interpretation of the model parameters - every time period t the value of Y decreases on average by 1.61 units and the average value of the analyzed index made up 3.52.

The share of employment in the chemical and petrochemical industries.

The equation of the trend:

y = 0, 05t2+0, 05t+1, 36 (13)

The index of determination.

$$R^2 = 1 - \frac{0.032}{0.092} = 0.652 \quad (14)$$

That is, in 65.22% of cases, t affects the change in y. In other words, the accuracy of the trend equation selection is average.

Share of fixed assets in chemistry and petrochemistry.

The equation of the trend:

y = 0,45t^2-0,85t+1,8 (15)

The index of determination.

$$R^2 = 1 - \frac{0}{1.58} = 1 \quad (16)$$

That is, in 100% of cases, t affects the change in y. In other words, the accuracy of the trend equation selection is high.

Share of investments in chemicals and petrochemicals.

The equation of the trend:

y = -0,938 ln(t) + 1,95 (17)

The index of determination.

$$R^2 = 1 - \frac{0.77}{1.108} = 0.305 \quad (18)$$

That is, in 30.51% of cases, t affects the change in y. In other words, the accuracy of the trend equation selection is average.

Share of employed in construction.

The equation of the trend:

y = 0,757t^2-0,72t+7,186 (19)

The index of determination.

$$R^2 = 1 - \frac{1.31}{14.52} = 0.91 \quad (20)$$

That is, in 90.98% of cases, t affects the change in y. In other words, the accuracy of the trend equation selection is high.

Share of fixed assets used in construction.

The equation of the trend:

$y = 0{,}171t^2 - 0{,}66t + 1{,}857$ (21)

The index of determination.

$$R^2 = 1 - \frac{0.653}{5.42} = 0.88 \quad (22)$$

That is, in 87.96% of cases, t affects the change in y. In other words, the accuracy of the trend equation selection is high.

Share of investments in construction.

The equation of the trend:

$y = -0{,}107t^2 - 1{,}05t + 2{,}854$ (23)

The index of determination.

$$R^2 = 1 - \frac{7.786}{18.972} = 0.59 \quad (24)$$

That is, in 58.96% of cases, t affects the change in y. In other words, the accuracy of the trend equation selection is average.

Share of employees in IT and communications.

The equation of the trend:

$y = 0{,}1\ t + 7{,}9$ (25)

Coefficient of determination.

$$R^2 = 1 - \frac{0}{0.02} = 1 \quad (26)$$

That is, in 100% of cases, t affects the change in y. In other words, the accuracy of the trend equation selection is high. Economic interpretation of the model parameters is possible - with each time period t, the value of Y increases by 0.1 units on average.

Share of used fixed assets in IT and communications.

The equation of the trend:

$y = -0{,}8\ t + 28{,}1$ (27)

Coefficient of determination.

$$R^2 = 1 - \frac{\sum(y_i - y_t)^2}{\sum(y_i - \overline{y})^2} = 1 - \frac{0}{1.28} = 1 \quad (28)$$

The coefficient of determination (and the trend equation in general) is statistically significant.

At the specification stage, a linear trend was selected. It is established that in the investigated situation 100% of the total variability Y is explained by the change of the time parameter.

Share of investments in IT and communications.

The equation of the trend:

$y = -2.45\ t + 6.85$ (29)

Coefficient of determination.

$$R^2 = 1 - \frac{0}{12.005} = 1 \quad (30)$$

That is, in 100% of cases, t affects the change in y. In other words, the accuracy of the trend equation selection is high. Economic interpretation of model parameters is possible - with each time period t the value of Y decreases by 2.45 units on average.

Thus, based on the calculated forecast indicators in the innovation and investment sector of the economy in 2030 compared to 2014, the number of employees will increase by 48.9%, the share of fixed assets will increase by 23.7%, the development will be carried out by investments, the share of which will decrease by 42.4%, but the share of output will increase by 72.7% (table 6). This sector of the economy in 2030 will be able to produce more products than use resources, which indicates the innovative nature of its development.

Summing up the above, it can be stated that the actual problem today is the lack of a targeted state policy in the field of innovation, defining the objectives of the innovation strategy and mechanisms for maintaining priority innovation programs and projects. The formation and implementation of innovation policy is based on the creation of such a system that will allow using the intellectual, scientific and technical potential of the country in production in the shortest possible time and with high efficiency.

Russia ranks 82nd place in the world in terms of government orders for advanced technologies. According to this indicator, Russia is worse than other BRICS countries. Russia ranks 61st place in the world in terms of cooperation between universities and industrial enterprises, 50th in terms of costs for innovative developments, and 53rd in terms of quality of research institutes. And it is these problems that need to be given close attention.

Table 6 - Composition and dynamics trends of the innovation and investment sector (share, %: a – in the number of employed; b – in the value of fixed assets; c – in investments; d – in gross output at current prices)

Industry sector	Share	1990	1998	2004	1998 to 1990	2004 to 1998	2008	2014	2014 to 2004	2014 to 2008	2020	2030	2030 to 2014
Innovation and investment sector	a	30,0	18,9	17,7	0,6	93,7	18,8	19,3	109,0	102,7	30,0	28,7	148,9
	b	16,5	10,3	6,7	0,6	65,0	31,3	29,3	437,3	93,6	39,4	36,2	123,7
	c	13,5	11,4	9,4	0,8	82,5	15,4	7,8	83,0	50,6	10,5	4,5	57,6
	d	26,4	17,3	18,0	0,7	104,0	28,2	24,5	136,1	86,9	31,7	42,3	172,7
Science and scientific service	a	3,7	2,0	1,9	0,5	95,0	1,4	1,3	68,4	92,9	1,2	1,2	92,3
	b	2,2	1,5	1,3	0,7	86,7	0,8	0,8	61,5	100,0	1,4	1,4	175,0
	c	-	-	0,7			0,2	0,8	114,3	400,0	0,8	0,9	112,5
	d	2,6	1,4	1,4	0,5	100,0	1,3	1,7	121,4	130,8	1,2	1,3	76,5
Mechanical engineering and metalworking	a	12,8	7,6	6,6	0,6	86,8	Н.д.	Н.д	-	-	12,1	9,0	-
	b	8,9	3,5	2,8	0,4	80,0	Н.д.	Н.д	-	-	8,1	5,1	-
	c	8,0	3,2	3,7	0,4	115,6	2,3	0,4	10,8	17,4	1,9	0,3	75,0
	d	13,0	6,2	6,4	0,5	103,2	9,2	12,0	187,5	130,4	16,8	23,5	195,8
Chemistry and petrochemistry	a	1,5	1,3	1,3	0,9	100,0	1,6	1,6	123,1	100,0	1,5	1,7	103,8
	b	3,1	1,8	1,4	0,6	77,8	Н.д.	Н.д	-	-	1,4	1,9	
	c	1,7	1,6	1,8	0,9	112,5	2,7	1,3	72,2	48,1	2,0	1,3	100,0
	d	3,4	2,5	2,7	0,7	108,0	1,6	2,4	88,9	150,0	2,7	3,1	129,2
Construction	a	12,0	8,0	7,1	0,7	88,8	8,0	8,4	118,3	105,0	7,2	8,8	104,5
	b	3,7	3,2	1,3	0,9	40,6	1,6	1,2	92,3	75,0	1,2	1,4	114,0
	c	3,6	6,0	1,8	1,7	30,0	0,9	0,9	50,0	100,0	1,4	0,04	4,4
	d	no	6,7	5,8			7,4	7,0	-	94,6	9,5	12,8	182,9
IT and communication	a	No data			-	-	7,8	8,0	-	102,6	8,0	8,1	101,3
	b				-	-	28,9	27,3	-	94,5	27,3	26,5	97,1
	c				-	-	9,3	4,4	-	47,3	4,4	2,0	44,3
	d				-	-	8,7	1,4	-	16,1	1,5	1,6	114,3

As negative factors it is necessary to note departmental disunity and weakening of scientific potential of science. The national science is characterized with: high degree of complexity of the organizational structure and departmental disunity (more than 20 ministries and agencies involved in solving problems); the diversity of forms of scientific-technical and innovation activities; a significant proportion of research problems of regional, sectoral and cross-sectoral nature; the long duration of the some problems studying at the time related to the reproductive process. This specificity creates certain difficulties in the management of agricultural research and agricultural science in general.

Let us calculate 2 scenarios: pessimistic and optimistic. We proceed from the fact that according to the "Forecast-2030" (Chapter 5), "Forecast of scientific-technological development of the Russian Federation" we will consider 2 scenarios: the first involves the increase in the share of expenditure in GDP by 2010 to 2%, the second decrease in the domestic share of domestic expenditure in GDP of 1 per cent. As additional criteria, we choose the amount of internal R & D costs, R & D costs per 1 researcher engaged in scientific research. Using the extrapolation method, we obtain the following results. A pessimistic scenario assumes a slight increase in government support for research and development funding, without creating mechanisms to attract business to finance research. Thus, the calculations show that the amount of internal R & D expenditure in 2030 will be 786.1 billion rubles; the share of domestic expenditure in GDP is 1.1%. This will contribute to the collapse of the innovation and investment sector, and the level of development of science will

not allow creating intensively new technologies at a faster pace. In a realistic scenario, it is expected to improve radically the material and technical base, change the scientific organizational structure and funding mechanisms. This scenario will allow increasing the share of costs in GDP by 2020-2025 to 2%, then by the economy "start", and GDP increase, the share of internal costs by 2010 will decrease to 1.2%. Internal costs in the amount of GDP will be 1.2%, the volume of internal costs on R & D - 1887.6 billion rubles, the gross domestic expenditure on research and development per 1 employee engaged in research and development will be 1058.5 thousand rubles.

Table 7- Programming of the ST and innovation sector of Russia until 2030

	Program content	**Approximate amount of investments by type of sources (budget/extra-budgetary)**	**The program results** **(Growth of industry turnover, employment, exports/ imports, GDP, etc.)**	**Program effectiveness**
Pessimistic program	This scenario assumes a slight increase in the amount of state support for funding research and development, without creating mechanisms to attract business to finance research	80% budget funds, 20% extra-budgetary funds. Total R & D costs - 786.1 billion rubles.	Domestic expenditures in GDP-1.1%, the amount of domestic R & D expenditures - 786.1 billion rubles. Domestic expenditures on research and development per 1 employee engaged in research and development -786.1 thousand rubles	The low share of costs in GDP will contribute to the collapse of the innovation and investment sector, and the level of development of science will not allow creating intensively new technologies at a faster pace.
Realistic program	This scenario will increase the share of costs in GDP by 2020-2025 to 2%, and then due to the economy "start", and the increase in GDP, the share of domestic costs by 2010 will decrease to 1.2%. This scenario involves a radical improvement in the material and technical base, change in the scientific organizational structure and funding mechanisms.	70% budget funds, 30% extra-budgetary funds. The total expenditure on R & D – 1085.5 billion rubles.	Domestic expenditures in GDP is 1.2%, the amount of internal costs on R & D-1887.6 billion rubles, the gross domestic expenditure on research and development per 1 employee engaged in research and development -1058.5 thousand rubles	Despite the low share of domestic costs in GDP, in such a short period it is possible to "restart" the economy, mainly due to the innovation and investment sector, which will lead to the creation of new technologies, will solve the problem of salaries in the field of R & D, which will motivate the attraction of talented young scientists.

Despite the low share of domestic costs in GDP, in such a short period it is possible to "restart" the economy, mainly due to the innovation and investment sector, which will lead to the creation of new technologies, will solve the problem of salaries in the field of R & D, which will motivate the attraction of talented young scientists.

CONCLUSIONS

For the successful development of the innovation and investment sphere of the Russian Federation, measures are needed, both organizational and financial, aimed at increasing the share of domestic costs in GDP to 3-5%. Only such measures will be able to revive both the scientific sphere and the economy as a whole, first of all, by attracting talented young people and creating advanced technologies. To solve this problem, it is necessary to involve business in the process. This should be done using regulatory measures, such as tax deferrals, or reduced tax rates, or adjusting the tax base for individual taxes to the amount of money spent on the creation and implementation of innovations.

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