Model of Financial Incentives for Innovation Activity in Industrial Sector: Development and Forecasting of Efficiency

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ABSTRACT

The article presents the key provisions of the developed model of financial incentives for innovation activity for companies in the industrial sector. **The subject** of the study is economic relations formed in the process of financial incentives for innovation activity of industrial companies. **The aim** of the study is to present the authors' model of financial incentives for innovation activity in the industrial sector, as well as to evaluate its effectiveness using forecasting methods. **The relevance** of the study is due to the existence in modern conditions of significant obstacles to financial incentives for innovation in the industrial sector: the lack of equity capital of companies, sufficiently high costs for the implementation of innovation projects, the existence of financial risk of loss of solvency by the company, as well as a lack of budget financing of innovation and state material support. **The novelty** of the research consists in the development of a model of financial incentives for innovation, which could be used in practice by companies operating in the industrial sector in order to increase production potential through the implementation of innovation and R&D projects. The authors apply the following **methods**: statistical analysis, correlation and regression analysis, forecasting, scenario analysis and construction of the trend of the GDP of the Russian Federation. **Results**: the authors define the structure of the modern model of financial incentives for innovation activity for industrial companies, evaluate its effectiveness using the interdependencies between the GDP of the Russian Federation and key parameters reflecting the increase in innovation activities of Russian entrepreneurship. Statistical data for forecasting the GDP of the Russian Federation were collected for the period 2010–2021. **The authors conclude** that the most effective scenario for the Russian innovation economy is the practical use of the developed model of financial incentives for innovation activity in highly active and medium-active companies.

Keywords: financial incentive model; innovations; innovation activity; industrial sector; forecasting changes in the GDP of the Russian Federation; digitalization of the business environment; forms of financing; R&D

INTRODUCTION

In modern conditions, innovation activity is a key tool for the development of the national economy and scientific and technological achievements. Speaking about companies in industrial sectors, the author notes that their activity in the implementation of innovation activities becomes a prerequisite for increasing and maintaining the competitiveness of a particular country in the international community in the long term. It should be noted that in the context of digitalization of the business environment and globalization taking place around the world, the role of innovation is increasing over time, so the authors believe that there is a need to stimulate the activity of industrial sectors to produce and sell innovations through the development of a financial model that includes the possible practical application of modern achievements of the digital economy.

Despite the fact that attempts have been made in Russia to develop areas of innovation activity among companies in industrial sectors, with the international comparison of the global innovation index, there are issues in stimulating business to the practical implementation of innovation projects. Thus, according to the results of 2020, the value of the above parameter is 35.6% for Russia, slightly higher in the ranking of countries are Latvia (41.1%), Slovenia (42.9%), while Germany should be singled out among European countries with index in the amount of 56.6%, as well as the leader of this rating — Switzerland (the global innovation index reached 66.1%).[1]

As a result of an independent study, the authors identified significant obstacles to the development of innovation activities of industries: a lack of equity in companies, rather high costs for the implementation of innovation projects, the presence of financial risk of losing the company's solvency, as well as the lack of budget financing of innovations and state material support within the framework of ongoing national projects and development strategies [1]. Given the above results of the author's research, it was concluded that the key reason for Russia's lagging behind other countries in the development of the innovation activity of companies in industrial sectors is the financial restrictions of business, which do not allow to significantly increase the innovation activity of the domestic economy.

The relevance of the chosen research topic lies in the fact that in order to stimulate companies in the industrial sectors to produce and implement innovations in the market, special attention should be paid to financial support measures within the framework of public policy. For example, this is evidenced by the experience of European countries, which have focused on the implementation of projects for the production of innovations by companies, including financial support for research and development (hereinafter referred to as R&D), as well as on the commercialization of the result. At the same time, according to the authors, it is necessary to develop a financial model that will increase the innovation activity of companies in industrial sectors and the country as a whole by overcoming significant problems that negatively affect the economic potential of Russian entrepreneurship.

For the successful development of innovation areas in industrial sectors, the importance of a smooth transition of companies to digitalization processes, the role of which is growing in modern realities, should be noted. This state of affairs will lead to the fact that an increase in the innovation activity of business and, accordingly, economic growth, reflected in the value of the gross domestic product (hereinafter referred to as GDP), will be achieved. However, in recent years there has been a very low level of innovation activity of companies in industrial sectors. In 2018 this figure was 15.6%, in 2019 it slightly decreased to 15.1%, and in 2020

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[1] Global Innovation Index 2020 Rankings. URL: https://www.globalinnovationindex.org/gii-2020-report# (accessed on 08.11.2021).

there is a slight increase of 1.1%.[2] At the same time, the author emphasizes the existence of a rather urgent problem related to financial incentives for companies in industrial sectors to implement innovation projects.

The topic of creating and implementing in practice a financial model for stimulating innovation in industries has been the subject of many scientific papers. The definition of the term "innovation" is given in the works of various Russian and foreign authors: N. Davidson, V. V. Karacharovsky, K. I. Kurpayanidi, N. I. Lapin, E. E. Rastvortsev, B. Twiss, J. Tidd, B. S. Utegulova, Yu. V. Yakovets [2–7].

The characteristics of the features of financial support for industrial enterprises in the development of innovation areas are presented in the studies of N. M. Abdikeev, A. A. Aliev, Yu. S. Bogachev, K. V. Ekimova, S. P. Kolchin, E. L. Moreva, V. A. Slepov, E. B. Tyutyukina [8–10].

Although in the available academic literature one can find a variety of studies on the topic of stimulating innovation activity in industries, the algorithms already developed and the activities presented do not lead to the very high efficiency of the process under study in their practical use in domestic business. In addition, it should be noted the importance of digitalization conditions for creating a model of financial incentives for innovation activities of companies operating in industrial sectors.

This article aims to present a model of financial incentives for innovation in industries, as well as to evaluate its effectiveness using forecasting methods.

The scientific novelty and practical significance of the work lie in the presentation of the developed model of financial incentives for innovation in industries, which could be used in practice by companies operating in industries in order to increase production potential through the implementation of innovation and R&D projects.

DEVELOPMENT OF A MODEL OF FINANCIAL INCENTIVES FOR INNOVATION ACTIVITIES IN INDUSTRIES

The development of innovation activity in industries is interconnected with the rate of economic growth of the country. Equally, a sufficiently high level of scientific and technological development, as well as the formed innovation potential of industrial enterprises, according to the author, will contribute to the transformation of domestic production, change in the established conservative model of Russian business, the introduction of breakthrough innovations, taking into account the activation of digital processes in the business environment.

In addition, the authors of this article believe that in order to significantly increase innovation activity in industries, a number of conditions must be met, which are as follows. Firstly, it is necessary to achieve a sustainable increase in the innovation activity of companies operating in industrial sectors, since from 2018 to 2020 the value of this parameter is extremely small, and the growth rate is unstable. Secondly, the role of innovative facilities infrastructure in the financial incentives for innovation activities is important, but in modern conditions, their functioning in the Russian economy is faced with strategic, marketing, information, and system-wide problems. Thirdly, budget financing of innovation projects implemented in the industrial business should be more than 50%, while this condition is actually observed, based on statistical data: 66.7% of the funds invested in projects are state financial support from the budget.[3] Fourthly, the state policy must be effective, in this case, it is necessary to develop ways of stimulating companies operating in industrial sectors in terms of the active implementation of R&D in practice. According to the authors, an effective state policy is a set of consistent steps aimed at financial incentives for companies to

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[2] Science and Innovation. URL: https://rosstat.gov.ru/folder/14477 (accessed on 08.11.2021).

[3] Science. Technology. Innovation. 2019. URL: https://www.hse.ru/primarydata/niio2019 (accessed on 09.11.2021).

implement innovation projects in practice. However, in accordance with the dynamics of the actual level of innovation activity of companies in the context of industries, which was mentioned above, the authors cannot note the effectiveness and consistency of the state policy pursued.

In addition, when developing a model of financial incentives for innovation in industries, the authors also take into account the identified obstacles that are of great importance in modern conditions: the lack of equity in companies, and the rather high costs of implementing innovation projects, the presence of financial risk of loss of solvency of the enterprise, as well as the lack of budgetary financing of innovations and state material support [1].

At the same time, under the model of financial incentives for areas of innovation in industries, the authors understand a functional system that includes several separate but interconnected areas (financial, integration and industry) that make it possible to identify the possibility of achieving an economic effect from the introduction of innovation projects into practice. Therefore, the purpose of creating a model of financial incentives is to develop such a mechanism, which is based on the relationship between financial, integration, and industry directions (*Table 1*).

In addition to the relationship between financial, integration and industry areas, the model of financial incentives for innovation activities in industries should take into account the property of complexity, due to the above-mentioned conditions for a significant increase in innovation activity. Under the complex model of financial incentives for innovation activities in industries, the author understands a functional system that includes areas (financial, integration and industry), practice-oriented tools, namely: commercial, budgetary, partnership, competitive, regulatory and cooperative, which contribute to the activation of innovation processes in the Russian business environment in

the context of the adoption of an effective, consistent policy of state regulation (*Fig. 1*).

The above structure of the developed model of financial incentives for innovation in industries is due to several goals. Firstly, companies operating in industrial sectors will be able to increase investment potential through the interaction of the three components of the model: directions, consistent, effective government policies, and forms of financing. Secondly, the growth of investment potential can become a prerequisite for the active import of digital technologies that allow the transformation of domestic production. Thirdly, in order to expand the markets for innovative products, foreign financing should be attracted, which will be carried out through the practical application of the developed model. Fourthly, the volume of ongoing operations to finance innovation projects will increase to a certain extent due to the expansion of forms of financing.

Currently, it is necessary to reflect the essence of each significant element in the structure of the developed model of financial incentives for innovation in industries. There are four forms of financing of innovation projects: budgetary, loan, investment, and financing within the framework of a public-private partnership project (hereinafter referred to as PPP). Definitely, the forms of financing innovations can be different, but the authors of the article proceed from the fact that during 2018–2020 the share of budget financing did not exceed 17%, and the funds for innovative facilities infrastructure and foreign funds are rather small in the costs of companies operating in industrial sectors. At the same time, the share of own financing of innovation projects exceeds 60% [11]. The insufficiently active use of regulatory spheres to stimulate innovation should be noted, which also had a negative impact on the current situation.

Taking into account the fact that the financial support of innovation projects in the industry should be sufficient in terms of volume, the study of the author

Table 1

Characteristics of directions as the basis for creating a model of financial incentives for innovation activities in the industrial sector

Direction	Definition	Types of direction
Financial	A method, reflecting the process of financial support and use of capital aimed at creating a new idea or participating in an innovation project	1. Commercial: own financing of an innovation project by a company or attracted financing from innovative facilities infrastructure, financial and credit organizations, and institutional investors. 2. Budgetary: financing of an innovation project from the state budget
Integration	A method of bringing together the efforts of several entities to achieve a common long-term goal	1. Partnership: efforts are combined between technologically related business units. 2. Competitively oriented: efforts are combined between entities whose activities are homogeneous in terms of industry
Industry	A method reflecting industry and market differences between companies operating in industrial sectors, considered in state regulation policy	1. Regulatory: involves the introduction of target-oriented documents that take into account industry and market differences between companies operating in industrial sectors. 2. Cooperative: involves joining forces between companies operating in industrial sectors and development funds, and research centers in order to implement joint innovation projects.

Source: developed by the authors.

of the article [1] revealed the absence of own sources of financing. According to the author, it is necessary to consider the presence of a conservative model in Russian entrepreneurship, which does not currently allow highly efficient development of innovation activity and significantly increases the innovation activity of companies operating in industrial sectors. Consequently, the structure of the developed model of financial incentives for innovation in industries, taking into account the property of complexity, includes not only private financing, which also implies PPP projects, but also budgetary, investment (project financing by investment companies, investment banks and venture funds, whose role is quite significant in stimulating innovation projects [12]), and debt financing (project financing by commercial banks).

Separately, it is worth dwelling on the financing of innovation projects within the framework of PPP. The fact is that the use of this form of financing can help not only to eliminate the problem of insufficient equity capital in companies operating in industrial sectors but also to develop partnerships that can increase the innovation activity of Russian entrepreneurship. At the same time, in addition to the material advantages of PPP, according to the author, attention should also be paid to another positive side of the interaction between business and the state: there is the possibility of developing a digital platform that will lead to the achievement of institutional goals of increasing the innovation and digital activity of domestic companies through the formation of a strategic alliance between private and public sectors.
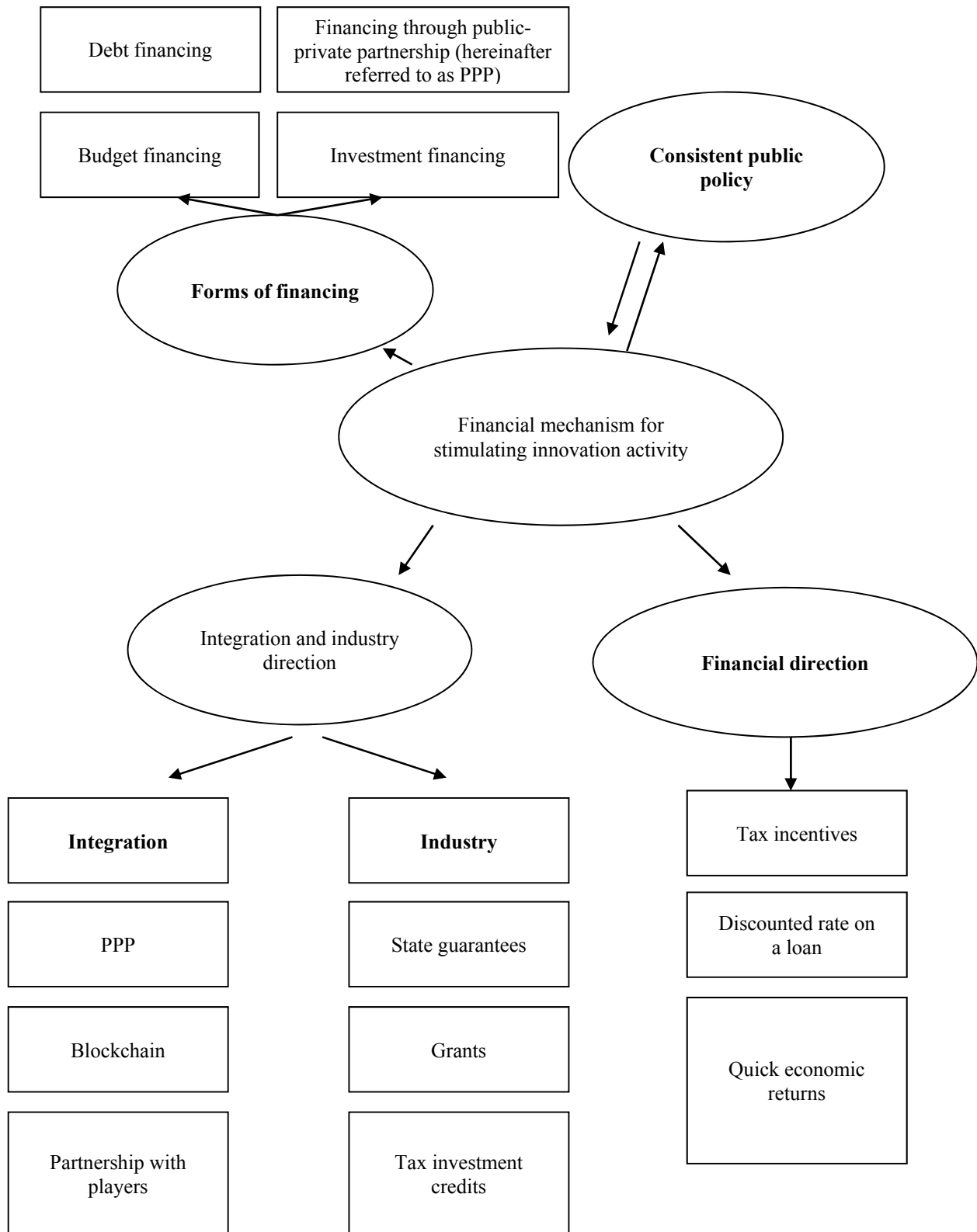
Fig. 1. **The structure of the developed model of financial incentives for innovation activities in the industrial sector**

Source: developed by the authors.

The next element of the structure of the developed model of financial incentives for areas of innovation is an effective, consistent policy of the state. From the point of view of the current state of affairs, the authors of the article propose a set of principles that will improve the efficiency of state policy through the prism of stimulating innovation projects in industries:

1. Interaction of key players in the developed model of financial incentives for innovation projects. Here it is worth talking not only about the functionality of the proposed system but also about its integrity, therefore, in the context of the implementation of a consistent state policy, it is necessary to maintain interaction between the participants in the model, namely: venture funds, commercial and investment banks, investment companies, companies operating in industrial sectors, public sector.

2. The principle of marketability of the developed model. The fact is that while maintaining constant interaction between all participants, financing of innovation projects will be carried out only in market conditions, considering existing competition.

3. The principle of regulation. On the one hand, the public sector ensures control over the actions of all participants in the model being developed and the transparency of the current legislation in the framework of operations to finance innovation projects. On the other hand, key players are obliged to comply with the main provisions of the legal framework created in Russia.

4. Information support. Each participant of the developed model must have sufficient and reliable information about the innovation project. For example, before investing existing capital, an investor needs to know the stages of the innovation cycle in the industrial sector, the purpose of the project, the net present value, or the internal rate of return. At the same time, a fairly quick exchange of such information can take place within the digital platform, and the public sector guarantees the absence of distorted statistical data on a single innovation portal.

The last element of the structure of the developed model of financial incentives for innovation activity is the directions: financial, industry, and integration. The financial direction includes tax incentives, a preferential interest rate on a loan, and a quick economic return on an innovation project being implemented. More details should be said about the last instrument of the financial direction. Any market as a system includes two enlarged product groups: traditional and innovative. At the same time, the receipt of economic returns from the ongoing innovation project can be seen through the positive value of net present value and internal rate of return, as well as a very low payback period for financial investments. The authors of the article believe that the greater the value of the parameters of the net present value and the internal rate of return, the higher the probability of choosing this particular innovation project, since its attractiveness for the investor will be very high. However, for a company operating in the industrial sector, the demand for new products plays a special role: a sought-after innovative product will increase the monetary volume of sales, which can become the basis for economic returns from the innovation project being implemented. In addition, within the framework of market relations, special preference in financing is given to breakthrough innovations and methods that increase the company's production potential [13]. Therefore, their fairly rapid generation will allow for a very short period of time to receive income, taking into account the spread of an innovative approach or method to other related industries.

To ensure high efficiency in the activities of companies operating in industrial sectors, it is necessary to conduct R&D. Although certain problems arise in the implementation of R&D on an ongoing basis in Russian entrepreneurship [14], tax incentives and preferential interest rates on tax investment loans can contribute to their elimination. In this case, the approach presented by the author will stimulate various areas of

innovation in industries, considering the recommendations presented. At the same time, on the one hand, the relevance of solving the problems associated with stimulating R&D in the industry is certainly visible. On the other hand, tax methods can also be used in public policy as a tool that creates favorable conditions for the development of innovation activity [15]. Therefore, according to the author of the article, further attention should be paid to such measures as tax incentives for companies operating in industrial sectors and conducting R&D in domestic conditions, and preferential interest rates on tax investment loans.

The very low efficiency of R&D in industrial sectors is also due to the fact that the state is simultaneously the initiator of such R&D, the customer, and the contractor [16, p. 63–64]. In this regard, in the structure of the developed model of financial incentives for the areas of innovation activity of industries, sectoral areas are identified, including grant support, state guarantees, and the provision of tax investment loans. Here it should be noted the importance of cooperation between companies operating in industrial sectors and research centers, which will stimulate the implementation of R&D programs..

FORECASTING THE EFFICIENCY OF THE DEVELOPED MODEL OF FINANCIAL INCENTIVES FOR INNOVATIONS IN THE INDUSTRY

After developing a model of financial incentives for innovation in industries, it is necessary to analyze its effectiveness through the prism of the Russian economy. Under the effectiveness of the model of financial incentives for innovation in industries, the authors of the article understand the presence of a positive mutual influence on the innovation activities of companies and the gross domestic product of the Russian Federation (hereinafter referred to as the GDP of the Russian Federation), since this parameter is a key macroeconomic indicator in the system of national accounts (hereinafter referred to as the SNA). At the same time, the

higher the value of financial investments in innovation projects, the higher the GDP of the Russian Federation. Its growth is explained by the following aspects. Firstly, the integral growth of the GDP depends on tax revenues to the state budget, which will be higher with an increase in the innovation activity of companies in industrial sectors. Secondly, the indirect growth of the GDP of the Russian Federation depends on the increase in demand for innovative products sold. Thirdly, a direct increase in the GDP of the Russian Federation will be achieved through the active implementation of innovation projects within the framework of using the model of financial incentives for innovation activity in the industry created by the authors. Considering the above facts, the analysis of efficiency should be carried out by predicting changes in the GDP of the Russian Federation using the apparatus of correlation regression and scenario analysis of the selected indicator.

To predict changes in the GDP of the Russian Federation, the authors of the article take into account the division of all companies operating in industrial sectors into three groups, carried out earlier in [17], due to the difference in their functioning in the conditions of innovation activity: highly active, medium active and low active. In accordance with this, the authors propose two significant scenarios for increasing innovation activity in industries. The first scenario is base, it is typical for all selected groups of companies in modern conditions, when active financial incentives for Russian entrepreneurship, considering the flow of digital processes, are not sufficiently available. The second scenario is stimulating, it has three sub-scenarios, each of which is determined by the peculiarities of dividing industrial companies into highly active, medium active and low active (*Table 2*). At the same time, the stimulating scenario indicates the implementation of a model of financial incentives for innovation in industries, taking into account digital processes.

According to the selected scenarios, the authors of this article predicted the change

Characteristics of scenarios for forecasting changes in the GDP of the Russian Federation, taking into account the classification of companies by the level of innovation activity

Scenario	Type	Scenario prerequisites	Group of industries by the level of innovation activity	Expected result and effect from innovation funding, %
1	Base	The development of a financial mechanism to stimulate the innovation activities of industrial corporations in the context of the digitalization of the economy is not carried out	All groups	0
2	Stimulating	Financial mechanism for stimulating the innovation activity of industrial corporations in the context of the digitalization of the economy is being implemented	Low active	From 0 to 0.7
3	Stimulating		Medium active	From 0.7 to 1.4
4	Stimulating		Highly active	From 1.4 to 2.1

Source: developed by the authors.

in the GDP of the Russian Federation in the time period 2022–2030 taking into account actually available statistical data for 2010–2021. A variety of factors influence the dynamics of the selected macroeconomic indicator [18]. Therefore, it is necessary to consider those factor variables that reveal the essence of ongoing innovation projects in industrial sectors. To build a correlation-regression model for predicting changes in the GDP of the Russian Federation, they can be divided into three groups: scenario, base and control. Scenario factors include only one variable — the level of innovation activity of companies operating in industrial sectors. As the main factors, the author of the article selected such parameters as the costs of innovation infrastructure facilities for technological innovations in the industry, the volume of foreign financing of innovation projects in the industry, the average number of employees of companies functioning in industrial

sectors and implementing technological innovation projects, the number of industrial companies that have invested their own funds in R&D programs. Control factors are additional variables that can be used to account for the effectiveness of the model of financial incentives for innovation projects in the industry. Among them, the following indicators can be distinguished: the index of industrial production, the share of innovative products in the total volume of shipped products in industrial production, and the size of developed technologies in industrial production (*Table 3*).

In accordance with the theory of probability and mathematical statistics, to evaluate the regression model, it is necessary to construct an equation that is a mathematical formula applied to independent variables in order to model the GDP of the Russian Federation with high accuracy. The general form of the regression equation is represented by formula (1):

Table 3

Characteristics of the result-effective and factor variables in forecasting changes in the GDP of the Russian Federation in the framework of correlation and regression modeling

Applied econometric package variable	Variable characteristic	Variable used in the regression model	Strength of the relationship between the factor and result-effective variables
Result-effective variable			
GDP (Gross domestic product)	Financial incentives for innovation activity	Logarithm of the GDP of the Russian Federation	1.00
Factor variable			
IA (Innovation activity)	Scenario	Assessment of the level of innovation activity of companies in industrial sectors	0.53
FII (Facilities infrastructure for innovation)	Base	Logarithm of the cost of innovative facilities infrastructure for technological innovation in industry	0.59
FFI (Foreign financing of innovation)	Base	Logarithm of the volume of foreign financing of industrial innovation projects	−0.15
EFI (Employees functioning in innovations)	Base	Logarithm of the average number of employees of companies functioning in industrial sectors and implementing technological innovation projects	0.79
RD (Research and development)	Base	Logarithm of the number of industrial companies that have invested their funds in R&D programs	0.81
IP (Index of production)	Control	Index of industrial production	0.37
IGWS (Innovative goods, works, services)	Control	The share of innovative goods, works, and services in the total volume of shipped industrial products	0.72
SPT (Size of production technologies)	Control	Logarithm of the size of developed technologies in industrial production	0.82

Source: developed by the authors.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots + \beta_n X_n + \varepsilon, \quad (1)$$

where β_0, β_1, β_2, β_3, β_n — are coefficients of correlation-regression modeling of independent variables; Y — the dependent variable; X_1, X_2, X_3, X_n — independent variables; ε — a variable reflecting the probability of a random error.

Taking into account the fact that all factor variables have different dimensions, correlation-regression modeling should be based on the logarithm of some of the presented indicators [19] (*Table 3*). In this case, the model can be described by the equation given in formula (2):

$$LN(GDP)_t = \beta_0 + \beta_1 LN(FII)_t + \beta_2 LN(FFI)_t +$$
$$+ \beta_3 LN(EFI)_t + \beta_4 LN(RD)_t + \beta_5 IA_t + \beta_6 IP_t + \quad (2)$$
$$+ \beta_7 IGWS_t + \beta_8 LN(SPT)_t + \varepsilon_t,$$

where β_0, β_1, β_2, β_3, β_4, β_5, β_6, β_7, β_8 — coefficients of correlation-regression modeling of changes in the GDP of the Russian Federation.

Now we should move on to direct analysis of the parameters using a correlation model that allows us to see the strength of the relationship between the selected parameters (*Table 3*).

Comparing the values of the parameters obtained in the course of the study in the correlation model with the Chaddock scale[4] (*Table 4*), one can see a fairly high strength of the relationship between the GDP of the Russian Federation and the volume of mastered technology in industrial production. In addition, there is a high strength of the relationship between the GDP of the Russian Federation and other factor variables: the number of industrial companies that have invested their own funds in R&D programs,

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[4] To assess the correlation coefficients or determine the statistical dependencies of quantitative indicators, the Chaddock scale is widely used when building multifactor regression models. The Chaddock scale is popular in economic, sociological, medical and marketing research. It was introduced in 1925 by the American scientist Robert Chaddock. This scale became the first tool for analyzing the strength of the relationship between indicators.

Table 4

Cheddock scale, designed to determine the strength of the relationship between the analyzed parameters

Value of the multiple correlation coefficient (*R*)	Evaluation of the strength in a relationship
0.1–0.3	Weak
0.3–0.5	Moderate
0.5–0.7	Noticeable
0.7–0.9	Strong
0.9–0.99	Very strong

Source: compiled by the authors on the basis of [20, p. 71].

the average number of employees of companies functioning in industrial sectors and the implementation of technological innovation projects, the share of innovative goods, works, services in general volume of shipped industrial products.

Equally, a significant relationship between the GDP of the Russian Federation as an indicator of the effectiveness of the developed model of financial incentives for innovation projects in industry and the parameters characterizing the implementation of R&D and the introduction of technological innovations indicates that in the future we can expect an increase in the share of innovative goods in the total volume of shipped products. In addition, there is a weak relationship between the GDP of the Russian Federation and the volume of foreign financing of innovation projects in the industry. At the same time, it should be noted that the share of foreign investments in the innovation activities of companies is very low (in the structure, the indicator did not reach 1%)
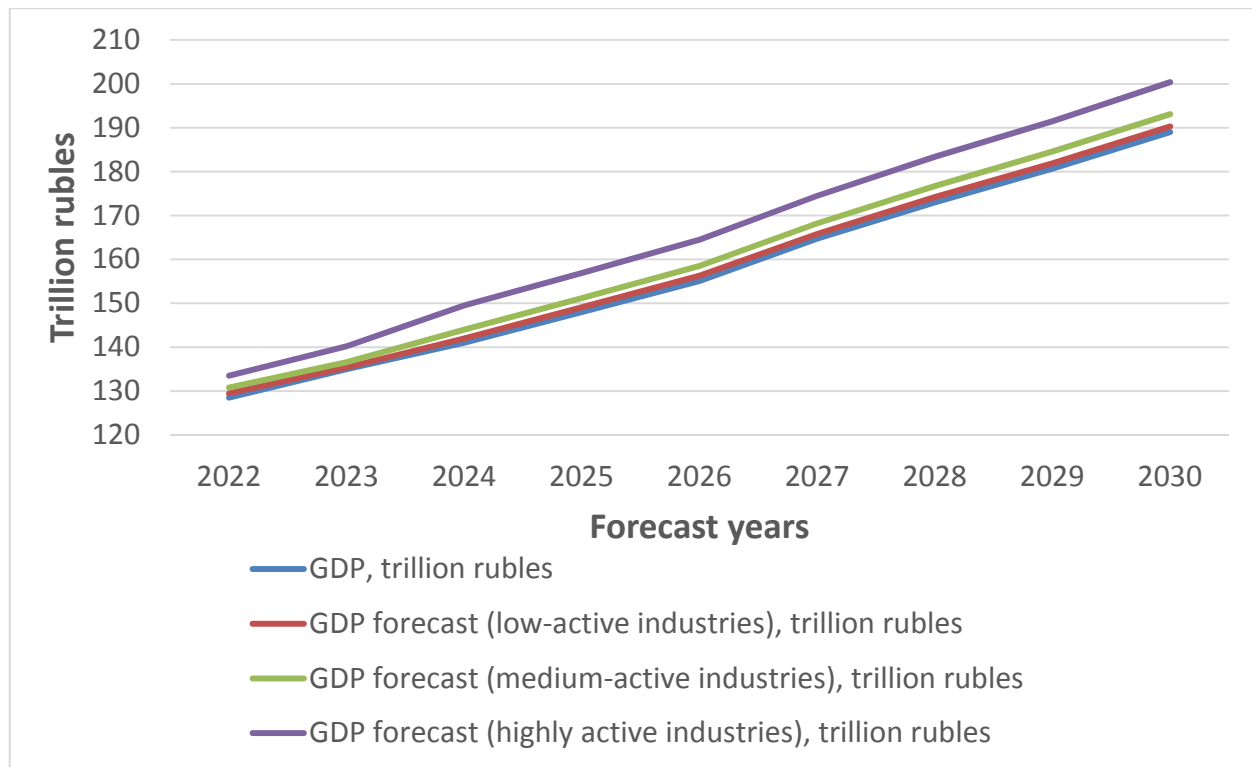
Fig. 2. **Forecasting changes in the GDP of the Russian Federation as an indicator of the effectiveness of the developed model of financial incentives for innovation projects**

Source: developed by the authors.

[11]. A significant outflow of capital abroad, which started in 2014 with the introduction of international sanctions, is one of the reasons for the weak relationship between the two indicators under consideration. It is necessary to emphasize the fact that there is a noticeable relationship between the GDP of the Russian Federation and the costs of innovation facilities infrastructure for technological innovation in the industry. This indicates the key role of venture funds in the framework of the developed model of financial incentives for innovation in the industry.

To predict changes in the GDP of the Russian Federation, the author of this article takes into account the selected scenarios for stimulating innovation activity in industries, as well as the division of all companies into three groups according to the level of innovation activity (*Fig. 2*).

In accordance with the presented forecast of changes in the GDP of the Russian Federation, the implementation of the developed model of financial incentives for innovation projects in highly active and medium-sized companies should be considered the most effective scenario for the development of the domestic innovation economy.

CONCLUSIONS

Summing up, it can be noted that at the present stage of the innovation development of the domestic economy, the activities of companies operating in industrial sectors are extremely important for the development of production and technical potential. Undoubtedly, it is impossible to stimulate innovation projects in the industry without an effective financial model, due to which companies would have enough resources to implement various areas of innovation.

The identified problems associated with insufficient financing of innovation projects, as well as very low growth in the level of innovation activity in industrial production, led to a lack of efficiency of state policy, which is also a prerequisite for developing a financial incentive model for innovation activities. It should

include such significant components as forms of financing, principles of effective, consistent state policy, as well as areas that allow stimulating innovation activity in industrial production: financial, industry and integration.

In order to understand how effective the developed model of financial incentives for innovation is for companies operating in industrial sectors, the author predicted the change in the GDP of the Russian Federation as a fundamental indicator of the development of the domestic economy. Based on the research results, it was established that the developed model of financial incentives for the innovation activity of industrial companies will contribute to the transformation of the national economy towards an innovation-oriented one, taking into account the active participation of key players: commercial and investment banks, investment companies, venture funds and the public sector. The results of the study can form the basis of the modern development of the Russian innovation economy.

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