ORIGINAL PAPER

DOI: 10.26794/2220-6469-2023-17-3-91-108
UDC 338.2(045)
JEL L50, O30, O32, O38

New Instruments for Investment Support of Technology Sovereignty Projects

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ABSTRACT

The growth of restrictive measures against the Russian Federation in the context of the high import dependence of the national economy calls for special attention to be paid to the country's achievement of technological sovereignty and the launching of a new sustainable investment cycle. This involves the task of dynamically increasing the creation of new medium- and high-technology industries, with a central role being given to the creation of a resource database of projects. Limited public budgets and the inaccessibility of external financial markets make it appropriate to consider domestic private and (or) resources as priority sources of financing debt, especially when the latter are not sufficiently involved in the investment process. In turn, it is unlikely to accumulate the funds of credit organizations and the business sector without the use of modern state support tools that would reduce the cost of capital for the implementation of investment projects and, thus, they redirected financial flows to the highest priority, albeit low-margin, of the real sector. Thus, the purpose of this article is to analyze new instruments of investment support of projects of ensuring technological sovereignty in the territory of the Russian Federation.

Keywords: technological sovereignty; investment support; instruments of stimulation; cluster investment platform; project finance factory; taxonomy of projects of technological sovereignty

For citation: **Sokolov A.B., Filatov V.I. New instruments for investment support of technology sovereignty projects.** ***The World of New Economy.*** **2023;17(3):91-108. DOI: 10.26794/2220-6469-2023-17-3-91-108**

INTRODUCTION

The restructuring of the world economy on a new technological basis in connection with the achievements of the fourth industrial revolution and increasing external economic and political challenges prompts the Russian government authorities to pay more attention to the issues of achieving technological sovereignty. It is understood as the ability to master at a competitive level the basic and most important for the country's economic development technologies of modern and prospective technological modes. Obviously, the solution to this problem requires the implementation of a whole range of new medium- and high-tech projects that would ensure the production of a wide range of goods for intermediate and final production consumption. At the same time, it is advisable to focus on projects in knowledge-intensive industries of the real sector, which are characterised by a high degree of dependence on imports, up to 60–80% in a number of areas (radio-electronic complex, computer production, pharmaceuticals, etc.). [1, p. 54; 2, p. 10].

At the same time, the formation of technological sovereignty projects[1] from the organisational and managerial point of view seems quite realistic, taking into account the dynamics of development of the project-oriented approach in Russia. Thus, its application allows to implement up to 40 thousand investment projects annually.[2] However, the accumulated potential can hardly be fully utilised without additional resource support. We are talking about potential attraction of at least RUB 8.5 trillion to priority projects, taking into account the greatest

[1] These are projects of a full innovation cycle for the production of medium- and high-tech products on the basis of own development lines.

[2] URL: https://www.ng.ru/kartblansh/2023–04–13/3_8706_kb.html (accessed on 15.05.2023).

needs in such industries as: microelectronics — RUB 1.8 trillion, aviation industry — RUB 1.4 trillion, shipbuilding — RUB 1.3 trillion, automotive industry — RUB 2 trillion.[3]

Undoubtedly, investment support is one of the central issues of achieving technological sovereignty, including understanding the sources (resource base) of projects. In this regard, the closed external financial markets and limited public funds are objectively constraining factors, taking into account which it is hardly possible to do without reliance on domestic capital of private and/or debt nature. Moreover, in accordance with the world practice of development projects, the share of public financing together with subsidies in the gross volume of sources — is no more than 10 per cent, while the share of private financing — is 23 per cent and that of debt financing — 67 per cent [3].

At the same time, we cannot allow a sharp reduction in state financing, but it is important to make it more balanced, encouraging private project initiative, especially in view of the extremely high contribution of enterprises and organisations subordinated to the state to GDP production, which is characteristic of Russia, amounting to about 70%, while 35–40% is sufficient. On the other hand, the funds of the domestic banking sector, which, with total assets of about RUB 120 trillion (76% of the total assets of the country's financial market of RUB 157 trillion), allocates no more than RUB 2 trillion for investment loans, are virtually unused today. [4]. In fact, today banks act as a cash and settlement organisation for private business and are not interested in performing the investment function. This is especially noticeable in the most technologically advanced industries and is associated with a low level of profitability, for example, in manufacturing industries the value does not exceed 10–14%, and the average level of profitability of goods in the manufacture of computers, electronic and optical products is 12% on average [5]. At the same time, such investment projects are centred around the introduction of technological innovations, which means that they are long-term, do not have guaranteed results and are not oriented towards the exploitation of the raw materials complex. In this regard, it makes no sense for a credit institution to take on additional risk when the margins of initiatives are relatively low. As a result, the Russian economy is characterised by a low share of investments and expenditures on scientific and innovative activities in GDP, respectively — 13.5 and 1% of GDP in 2021.[4]

The low motivation of the banking sector to act as a lender to medium- and high-tech enterprises in the manufacturing sector of the Russian economy leads to the fact that private businesses are forced to modernise production and carry out innovation activities,[5] relying primarily on their own sources. Thus, in the total amount of innovation expenditures totalling several trillion roubles, about 55% were financed by companies' own funds.[6] However, solely in-house resources are not enough for firms, and research shows that more than half of organisations identify this barrier as the main obstacle to technology adoption and commercialisation.[7] The lack of resources makes it impossible to build a large-scale investment policy and leads to the key problem of domestic technology companies — chronic underfunding. In turn, the lack of investment support for innovation activity results in inevitable lagging behind and losing in the

[3] URL: https://www.rbc.ru/economics/27/04/2023/644a29c19a7947e5f0803d14 (accessed on 10.05.2023).

[4] Russian Statistical Yearbook 2022. Rosstat; 2022.

[5] It is important to remember that innovation is an integral part of technological sovereignty projects.

[6] Indicators of innovation activity: 2022. Statistical collection. Moscow: Scientific and research university HSE; 2022. 292 p.

[7] Analytical report of Scientific and research university HSE "What prevents Russian business from developing innovations?" URL: https://www.hse.ru/mirror/pubs/share/780631876.pdf (accessed on 15.06.2023); Report of the Russian Union of Industrialists and Entrepreneurs "On the State of the Business Climate in Russia in 2022". URL: https://rspp.ru/activity/analytics/ (accessed on 19.06.2023).

competition (primarily to foreign enterprises). A characteristic indicator is the level of innovation activity of organisations, which in the country is at an incomparably low level of 10–15%, while in the USA and Germany it is 60–65%; in France — 50–55%; in the Republic of Korea — 45–50%; in Japan — 40–45%; in China — 35–40%.[8]

It should be noted that over the last few decades the authorities have made attempts to reverse the situation and encourage private investors and the banking sector to invest in the creation of new technologies and innovation activities. In particular, in the 1990s, government support was directed towards financial assistance to small enterprises, for example, a specialised "Fund for Assistance to Small Innovative Enterprises in Science and Technology" was set up. However, it should be recognised that stimulus measures were generally non-systematic and non-transparent, which led to a situation in which the scientific and technological sector was on the verge of survival, did not produce innovations and, moreover, was not attractive for capital investment against the profitability of the fuel and energy sector or the financial sector.

The next stage, which lasts from the mid-2000s to the present day, saw a transformation of the government's approach to scientific and technological development towards a more systemic approach. The main goal was to integrate Russia into the global scientific partnership, to expand production and technology chains and supply chains, as well as to form advanced institutions and practices. Thus, to support project initiatives, a national innovation system was built, a number of development institutions were launched (Rosnano JSC, Skolkovo Foundation, etc.), preferential regimes (technology innovation zones, advanced development territories, etc.) were developed and implemented, and a wide range of instruments to support innovative firms was organised, the list of which covered about 200 units by 2023.[9]

Indeed, such actions have led to a positive result in the form of stopping the process of further degradation of the scientific and technological sphere, however, unfortunately, it has not yet been possible to solve the complex problem of inactivity of the business and banking sector in financing innovations and the insensitivity of big business to the latest developments through the tools created by the state. National medium- and high-tech companies, the key drivers of scientific and technological development, continued to leave Russia in search of additional investments and new points of growth, as a rule, in countries with developed financial and venture capital markets. Thus, over the last few decades, a model of "open innovation system" has been formed in our country. Its characteristic features, on the one hand, are the absence of ready domestic samples of innovative products in a number of industries and areas (while investment support for commercialisation and mass production is insufficient), and, on the other hand, the preference of private business to import foreign technologies and complex solutions instead of implementing Russian ones.[10]

Ultimately, this model led Russia to become critically dependent on foreign suppliers of microelectronics, bioengineering products, computer technology, etc., but it failed to become a beneficiary of intellectual rent, conducting fundamental and applied research without further advancement in the innovation and investment process.

[8] Indicators of innovation activity: 2022. Statistical collection. Moscow: Scientific and research university HSE; 2022. 292 p.

[9] Order of the Government of the Russian Federation No. 1315 dated 20.05.2023 "On Approval of the Concept of Technological Development for the Period until 2030". URL: http://static.government.ru/media/files/KlJ6A00A1K5t8Aw93NfRG6P8OIbBp18F.pdf. (accessed on 04.07.2023).

[10] Analytical Report of CICAP «Scientific and Technological Sovereignty: New Goals and Challenges». URL: http://www.forecast.ru/_ARCHIVE/Presentations/DBelousov/2022–12–14Inno.pdf. (accessed on 15.06.2023).

However, the situation has been significantly complicated by the avalanche of restrictive measures imposed on Russia in 2022–2023, which made it difficult or impossible to supply knowledge-intensive products from some developed countries. Moreover, technological Western companies that had a significant share of the domestic market (if we are talking about the sale of products with high technological components) left us, and friendly countries proved unable to fully replace Western corporations without losses in terms of price/quality ratio. At the same time, it is important to take into account that even if the substitution had been possible, it would have led to a decrease in diversification and strengthened Russia's dependence on the above-mentioned countries, and would have only contributed to the emergence of new risks. Thus, the country has found itself in a new reality in which the use of the existing model of "open innovation system" is becoming less and less relevant.

Under such conditions, the most promising is the transition not only to a new model, but also to a new stage of scientific and technological development of the country, and its main content is the achievement of technological sovereignty. Obviously, it is impossible to make a qualitative transition in the absence of a full-cycle innovation system with a high share of domestic private medium- and high-tech enterprises. Consequently, it is necessary to change the priorities of the management system, as well as to transform the existing support instruments, including because "it is time to take stock of them (instruments) from the point of view of efficiency and effectiveness and then reassemble them in order to eliminate duplication, consolidation and focus on cross-cutting technological priorities".[11] Moreover, it is important to focus the instruments on increasing the interest of banking organisations in lending to project initiatives that strengthen technological sovereignty and to pay more attention to aspects of stimulating investment activity of private companies. This would not only help to attract the required amount of capital investment in investment projects, but would address the key problem of underfunding of organisations with an innovation component in a low profitability environment discussed earlier.

Accordingly, under the new conditions, a more serious scientific and methodological substantiation of the aspects of investment support for technological sovereignty projects should be formed, new mechanisms, forms and practices should be proposed, and existing ones should be strengthened, which would more actively involve the participants of the corporate sector in the reproduction process. Especially since for a long-time the researchers have focused their efforts on the issues of instrumental support for export [6, 7], projects in the field of import substitution and industrial policy [8, 9], small and medium-sized enterprises [10, 11], as well as innovative development in general [12, 13]. Of course, it cannot be said that they (instruments) were not touched upon by the authors at all[12] [14–16], but it happened most likely in an indirect form, and the works dealt largely with theoretical and general outlines, which means that the subject area remained not fully explored. In addition, it is worthwhile to dwell on the issues of instrumental support because over the past few years the Russian Government has been engaged in the organisation of new and/or modernisation of existing instruments for stimulating investment projects with the aim of strengthening

[11] Order of the Government of the Russian Federation No. 1315 dated 20.05.2023 "On Approval of the Concept of Technological Development for the Period until 2030". URL: http://static.government.ru/media/files/KlJ6A00A1K5t8Aw93NfRG6P8OIbBp18F.pdf. (accessed on 20.07.2023).

[12] Interview with Elena Alexandrovna Antipina, Director General of the Institute for Public-Private Planning. URL: https://cyberleninka.ru/article/n/nauchno-promyshlennye-klastery-dvoynogo-naznacheniya-kak-mehanizm-ukrepleniya-tehnologicheskogo-suvereniteta-rossiyskoy-federatsii/viewer

technological sovereignty. The key objective was to increase the interest of the corporate segment. This was achieved by reducing the cost of financial resources in the implementation of medium- and high-tech projects, in particular instruments of preferential lending, project financing and specialised taxonomies.

Undoubtedly, these instruments are characterised by differences in terms of structure, processes, and ways of functioning (limitations in terms of sources and volumes of funds, level of concessional interest rate, support measures, implementation timeframe and co-financing potential, possibility of using information environments, etc.). However, at the same time, their (instruments) similarity lies in their general orientation, while they were created and (or) finalised to address specific new tasks. It is a question of counteracting the additional limitations of the Russian economy arising in 2022–2023, which occurs in the context of profound technological shifts associated with the results of the fourth industrial revolution and the transition to the sixth technological mode. In this respect, these instruments are aimed at solving the set tasks by stimulating private initiative in the implementation of new investment projects in the most vulnerable and import-dependent domestic innovation sectors of the economy. This prompts us to dwell on the instruments in more detail.

At the same time, it is important to note that a large-scale increase in investment support for innovation activity can be carried out in conditions of a general revival of the investment process in the Russian economy, the formation of a new dynamic long-term investment cycle based on a large-scale growth (up to 25–30% of GDP) of domestic demand for investment and the development of effective tools for interaction between the investment and innovation circuits of the national economy. As for the revival of investment activity, it appears that the Government of the Russian Federation associates this process with the implementation of the provisions of the adopted Federal Law No. 69-FL of 01.04.2020 "On the Protection and Promotion of Capital Investments in the Russian Federation", where Article 15 stipulates that within the framework of agreements on the protection and promotion of investments between the investor and state authorities at the federal and regional (constituent entities of the Federation) levels, as well as at the municipal level, organisations implementing investment projects may be provided with the following benefits: state support measures providing for reimbursement of costs in accordance with the budget legislation of the Russian Federation and (or) a tax deduction in accordance with the legislation of the Russian Federation on taxes and levies.[13]

THE PROJECT FINANCE FACTORY

One of the first instruments of the "new wave", which makes it possible to obtain financing on favourable terms for the implementation of large investment projects, is the Project Finance Factory (hereinafter — PFF) launched by the state corporation VEB.RF in 2018 and subsequently finalised in November 2022. The decision on its formation was made by Resolution of the Government of the Russian Federation No. 158 dated 15.02.2018 "On the Project Finance Factory programme".[14] The reason for setting up the Factory was that neither the implementation of specialised project finance companies, nor the development of the first state programme to support investment projects implemented in Russia on the basis of project finance,[15] were able to ensure the planned growth in lending to investment projects by 2017, and proved insufficiently effective in terms of expanding the use of this incentive tool. [17, 18].

[13] Federal Law No. 69-FL dated 01.04.2020 "On Protection and Promotion of Capital Investments in the Russian Federation". URL: http://www.kremlin.ru/acts/bank/45357

[14] It is this regulation that will be used as the main source of information in future PFF analyses.

[15] This refers to Resolution of the Government of the Russian Federation No. 1044 dated 11.10.2014 "On Approval of the Programme for Supporting Investment Projects Implemented in the Russian Federation on the Basis of Project Finance".

Table 1

Organizational model of project finance factory

Participant	Role, place and/or function
VEB.RF	The Corporation acts as the operator of the Factory and credit manager in the syndicate, conducts project selection and appraisal and is the recipient of the government subsidy, and has the obligation to repurchase or replace distressed SPFC PFF assets
SPFC PFF	It is a wholly owned subsidiary of VEB.RF, issues state-guaranteed bonds and acts as a lender under Tranche A
Ministry of Economic Development of Russia	Acts as the supervisor of the Factory and acts as the chief administrator of government grants
Russian Ministry of Finance	Provides state support measures (interest rate subsidies to lenders within the syndicate and a state guarantee for the PFF bonds)
Central Bank of the Russian Federation	Conducts special regulation of commercial banks in terms of lending to PFF projects
PFF participants, including lenders, project proponents, special project company (SPC — hereinafter)	Participate in investment financing of projects (commercial banks and international financial organisations), provide the required documentation (initiators), implement the initiative (project company)

Source: Resolution of the Government of the Russian Federation dated 15.02.2018. No. 158 "About the program "Project Finance Factory".

On the other hand, the creation of the Factory was associated with the reform of the state corporation VEB.RF, which involved clarification and reorganisation of the company's business processes, restructuring of the functional management model and adoption of a new development strategy until 2021. In the updated design, the tool was supposed to improve the "quality" of project financing, while the reform was associated with the fact that as of 2016 the corporation was in a situation close to default due to significant losses and a high debt load. The situation was further complicated by the introduction of external restrictive measures concerning the financial sector of the Russian economy.[16]

Thus, the PFF is a tool for financing investment projects in priority sectors of the Russian economy. The Facility involves the provision of funds to borrowers on the basis of syndicated credit (loan) agreements, contributing to an increase in the volume of lending to organisations implementing investment projects. Meanwhile, certain government support measures are applied within the framework of the instrument, including subsidies from the federal budget to reimburse expenses in connection with the provision of loans and credits within the framework of the Project Finance Factory instrument, as well as a Russian state guarantee for bond loans raised by a specialised project finance company.

It is important to take into account that the organisational model of the Factory is quite multidimensional and involves a wide range of participants and stakeholders (*Table 1*),

[16] URL: https://www.vedomosti.ru/finance/news/2016/03/03/632408-sanktsii-veba (accessed on 10.05.2023).

Table 2

Main changes in the instrument of the FPF

Characteristics	Terms and conditions until 09.11.2022	Terms and conditions after 09.11.2022
Total volume of tranches "A" (Factory limit)	Up to RUB 294 bln.	Up to RUB 500 bln.
Initiator participation	Above 20% of the investment project value	Above 20 per cent of the investment project value or above 15 per cent – if the project is approved in the period 2022–2023 with limited participation of VEB.RF: tranche "A" – not more than 10 per cent of the project value; the corporation's participation in financing the project as a whole not more than 25 per cent of the value
Requirement to the borrower	Special Project Company (SPC)	Special Project Company. In the case of investment projects implemented by existing borrowers, it is possible to build second stages or expand production facilities without forming an SPC
"Re-lending" (refinancing)	Support financing ("bridge loan") up to 3 years; credits (loans) up to 15% of the investment project cost by decision of the Supervisory Board of the Group of Companies	Support financing ("bridge loan") up to 3 years; credits (loans) up to 15% of the investment project cost by decision of the Supervisory Board of the Group of Companies; credits (loans) to finance expenses incurred during the pre-investment phase for projects approved in 2022–2023

Source: Resolution of the Government of the Russian Federation dated 15.02.2018. No. 158 "About the program "Project Finance Factory".

including federal government agencies, the Bank of Russia, VEB.RF, the Specialised Project Finance Company Project Finance Factory (hereinafter referred to as SPFC PFF).

Many stakeholders envisage the formation of an extended benefits circuit.

From this point of view of the state, the Factory is one of the ways to achieve the national development goals of the Russian Federation (ensuring GDP growth rates above the world average, growth of investment in fixed capital up to 25% of GDP, growth of exports of non-resource non-energy goods by more than USD 250 billion, etc.), optimal spending of budget subsidies, the multiplier effect of state support, the necessary quality of selection of investment projects and improvement of expertise.

In turn, as for project initiators, it is in their interests to increase the terms and volumes of lending at a floating interest rate, hedge the growth of the key rate thanks to government subsidies for the entire period of lending, tranche "C" to pay interest on tranches "A" and "B" at the investment stage, and standardise approaches to project finance in the country.

In the interests of partner commercial banks, risks are shared in financing, interest rate risks are reduced through interest rate subsidies, and the capital burden is reduced due to the special procedure for calculating capital adequacy and provisioning for loans and borrowings provided under the PFF.

However, in order to receive the above preferences, it is necessary for an investment project to meet certain criteria, the main ones being: a minimum cost of RUB 3 billion, a maximum payback period of 30 years, with a financing term of no more than 20 years, taking into account the amount of the borrower's own funds of no less than 20% of the total cost.[17]

[17] Resolution of the Government of the Russian Federation No. 158 of 15.02.2018 On the Project Finance Factory Programme (accessed on 13.05.2023).

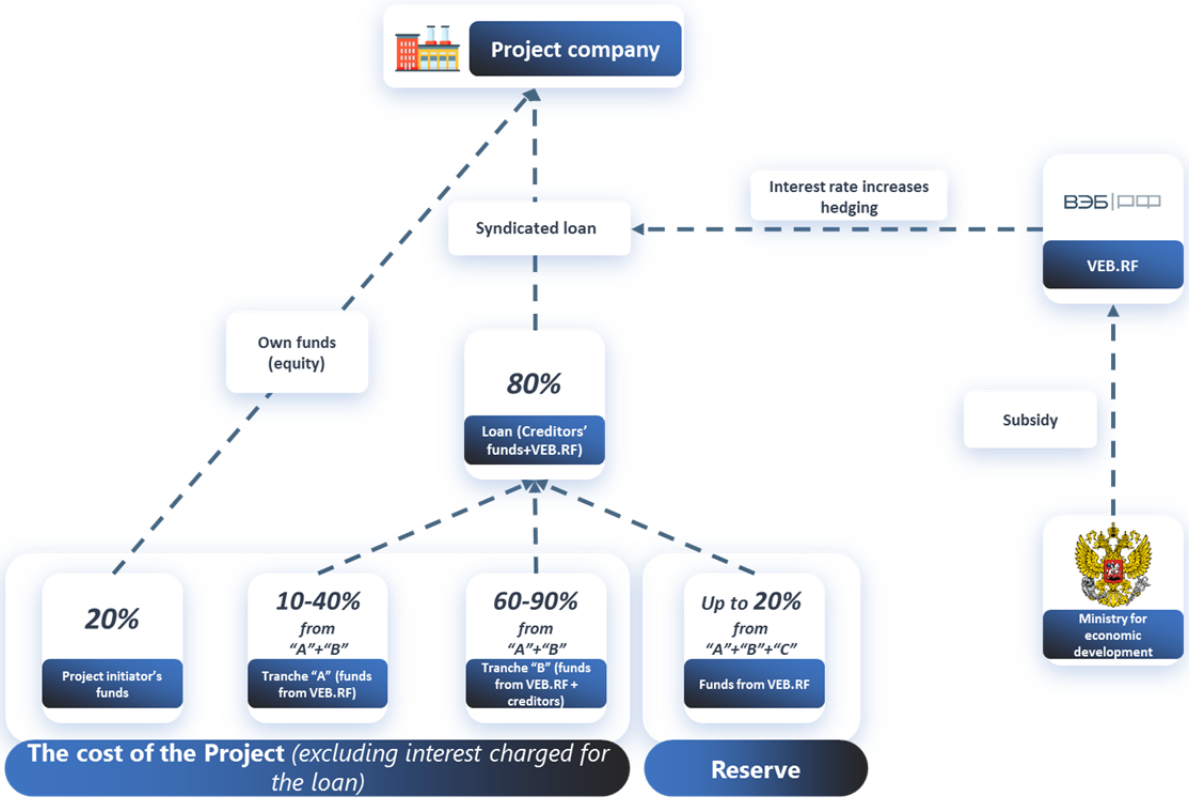

Fig. 1. **Structure of the FPF instrument**

Source: Resolution of the Government of the Russian Federation dated 15.02.2018. No. 158 "About the program "Project Finance Factory".

At the same time, due to the introduction of a new wave of restrictive measures against Russia in the first half of 2022, the PFF instrument was significantly modified and supplemented in terms of some conditions already in November 2022. Meanwhile, the above-mentioned criteria have also been innovated. The main changes to the PFF instrument are reflected in *Table 2*.

In general, such changes should be characterised as positive and adding flexibility to the instrument, which is due, among other things, to an increase in the instrument's limits by RUB 200 billion, while reducing the level of the initiator's own participation by 5 p.p. This makes it possible to more actively involve companies that have problems with initial capital, which is particularly important given the key criterion for project selection in the form of minimum cost.

In addition, the instrument was further refined in May 2023 due to an initiative to create specialised equity funds aimed at financing projects with insufficient resources of the initiators.[18] The alterations, in particular, stipulate that the amount of own funds formed at the expense of the funds should be no more than 50 per cent of the required own funds and no more than 10 per cent of the project cost. In turn, the share of own funds formed at the expense of the project initiator should be not less than 10% of the project cost. In addition, a possibility was worked out to replace tranche "A" financing with guarantees provided by VEB.

[18] The sources of funds are VEB.RF and commercial banks. The target volume of the funds is up to RUB 200bn, with the size of each fund not exceeding RUB 50bn and VEB.RF's participation not exceeding 1/3. The launch of the funds will ensure financing of projects lacking funds of the initiators for the amount of RUB 2 trillion or more.

Table 3

Subsidizing Growth at a Key Rate

Calculation of the subsidy	December 2018	December 2020	March 2022	October 2022
Introductory data	The loan rate is the amount of the key rate of the Bank of Russia + 2.5%; target consumer price index — 4%, federal loan bond-with indexed denomination (fixed in 2018) — 2.92%			
CAP*	6.92%			
Key rate of the Central Bank	7.5%	4.25%	20%	7.5%
Full interest rate on the loan	10%	6.75%	22.5%	10%
Subsidy**	0.58%	0%	13.08%	0.58%
Effective interest rate for the client including subsidy	9.42%	6.75%	9.42%	9.42%

Source: compiled by the authors on: URL: https://xn-90ab5f.xn—p1ai/biznesu/fabrika-ektnogo-finansirovaniya
Note: * — Calculated as the sum of the "CPI" and "OFZ" indicators; ** — Calculated as the difference between the Bank of Russia Key Rate and "CAP".

RF to commercial banks that provided tranche financing.[19]

Thus, understanding of the stakeholders, criteria and conditions of the Factory allows formalising the structure of the instrument in *Fig. 1*. Meanwhile, one should keep in mind the option of changing the conditions described in *Table 2,*[20] *as well as the possibility of financing tranche "A" by banks with VEB.RF providing a guarantee for this tranche.*

Based on the structure of the instrument, it is worthwhile to dwell in more detail on the level of interest rates on loans under investment projects, as this is one of the most attractive advantages of the Factory. Thus, for transactions approved in Q3 and Q4 2022, the CAP[21] amounted to 7.56 and 7.15% respectively.[22] An example of subsidising the key rate of the Bank of Russia for an investment transaction under long-term planning, dated December 2018, is given in *Table 3*.

In turn, in terms of procedures and processes for using the Factory tool, it is worth noting that a unified information system "DataRoom" (hereinafter — UIS "DataRoom") is used for the purposes of interaction between the parties, which provides access to information on investment projects for the participants and the Ministry of Economic Development of the

[19] Resolution of the Government of the Russian Federation No. 158 dated 15.02.2018 "On the Project Finance Factory Programme".

[20] First of all, it means that for investment projects approved in the period 2022–2024, the share of the initiator's own funds may be from 15% of the project cost, with limited participation of VEB.RF: tranche A — not more than 10% of the project cost; total participation of VEB in financing — not more than 25% of the project cost.

[21] "CAP" — the maximum level of interest rate.

[22] Information and analytical materials of VEB.RF. URL: https://xn-90ab5f.xn — p1ai/biznesu/fabrika-proektnogo-finansirovaniya/ (accessed on 05.05.2023).

country. In addition, a certain selection process has been formalised, consisting of three key stages:

1. Selection of investment projects for the Factory. As part of the stage, VEB.RF checks each specific project for compliance with the instrument's criteria, and the borrower gives his consent to include the project in the PFF. Next, the state corporation decides on the potential for this inclusion, while lending organisations express interest in providing financing. As a result, a register of potential PFF projects is created.

2. Structuring. In the current iteration, VEB.RF provides a unified information space through the use of UIS "DataRoom". In turn, the interested parties jointly structure financing taking into account the application of state support. As a result, a syndicated loan agreement is concluded and a register of investment projects of the Factory is formed.

3. Financing, monitoring and control. In the context of the third stage, the investment project is financed, where VEB.RF acts as a credit manager, and subsidies and state guarantees are obtained. Lenders get access to information resources on the implementation of the investment project. The stage results in monitoring and control of the project at all stages of its life cycle.[23]

To summarise the discussion of the PFF, it should be noted that the practical implementation of the instrument as of the end of 2022 has ensured the signing of 17 investment projects worth about RUB 1.1 trillion, with 18 projects approved for RUB 537 billion. An example of a specific project in the area of technological sovereignty is the construction of an ammonia and urea (carbamide) plant. The investment volume amounted to USD 1.7 billion, with a production potential of 1.1 million tonnes of ammonia and 1.4 million tonnes of urea (carbamide) per year.[24]

CLUSTERED INVESTMENT PLATFORM

The creation of the "Cluster Investment Platform" (CIP — hereinafter) tool was announced in December 2022 as part of one of the reports at the meeting of the Presidential Council on Strategic Development and National Projects.[25] According to the authors' idea, the new support instrument was supposed to stimulate investment activity in manufacturing industries, become the main instrument for the country to achieve technological sovereignty and competitiveness, and ensure the acceleration of economic growth. It was supposed to be available not only for profitable but also for low-margin projects. In the case of the latter, this meant initiatives aimed at creating priority high-value-added products, for example, in the food, energy, biosecurity, and transport sectors. In general, the main contours of the CIP at the preliminary stage are presented in *Table 4*.

In terms of quantitative indicators, 164 investment projects worth RUB 5.2 trillion have been pre-selected within the Cluster Platform, of which an estimated RUB 2.9 trillion will be provided by investors, while RUB 2.3 trillion will be financed through concessional loans (at preferential rate). At the same time, at the initial stage, the budget envisages RUB 5 billion for the implementation of the instrument in 2023, taking into account the possibility to apply for additional allocations as needed. According to the Russian Government's plan, one of the results of the CIP should be the attraction of up to RUB 10 trillion to the industrial sector.

As a result, in February 2023, after specifying a number of key characteristics and parameters and developing the procedure for concluding a loan agreement (contract), a regulatory decree of the Government of the Russian Federation No. 295 dated 22.02.2023 "On state support

[23] Ibidem.

[24] Ministry of Economic Development of Russia. URL: https://www.economy.gov.ru/material/file/650131761432617b4ed43efa51431cd8/klyuchevye_itogi_deyatelnosti_minekonomrazvitiya_rossii_za_2022_god_i_zadachi_na_2023_god.pdf (accessed on 07.05.2023).

[25] Administration of the President of the Russian Federation: official website. URL: http://kremlin.ru/events/president/news/70086 (accessed on 04.04.2023).

Table 4

The main outlines of the CIP during the preliminary phase

Characteristics	Contents
Loan amount	Volume — Up to 100 billion roubles
Interest rate	The preferential interest rate was to be set at 30 per cent of the key rate of the Bank of Russia + 3 per cent, with separate decisions of the Russian Government allowing for a reduction of the interest rate for certain projects
Preferential rate period	At the stage of capital investments and 2 years after the production run
Fiscal benefits	For the benefit of companies implementing SPIC 1.0 (Special Investment Contract), in the form of a reduction of profit tax to 0% and insurance contributions to 7.6%
Disclaimer on low-margin projects	If the project is low-margin but strategically significant, it was proposed to introduce the possibility of receiving a repayment of 25% of the investment component of the loan within three years after going into production, but with a ceiling of no more than 50% of revenue*
Support measures	Ensuring long-term guaranteed demand in public procurement, as well as in the procurement of individual legal entities**. Implementation through special and offset contracts, public-private partnership agreements and life cycle contracts At the development stage — identification of anchor customers from among monopolies, corporations, industry leaders (RZhD, Rosatom, OSK, Gazprom, etc.). Reduction of control measures and inspections, as well as application of tax and customs monitoring procedures

Source: compiled by the authors on: URL: http://kremlin.ru/events/president/news/70086
Note: * — The subsidy was planned to be selective and provided on the basis of a competition; ** — This refers to the Federal Law "On the procurement of goods, works, services by certain types of legal entities" dated 18.07.2011 No. 223-FZ.

for organisations implementing investment projects aimed at the production of priority products" was adopted. The regulatory legal act approved a new support tool, the effect of which is in line with the state programme "Development of Industry and Enhancement of its Competitiveness", and the Russian Government allocated RUB 1 billion from the federal budget for this purpose.[26] The Industrial Development Fund (hereinafter referred to as the "IDF") acts as the operator of the CIP.

Thus, the "Cluster Investment Platform" is an instrument of preferential lending to organisations implementing investment projects aimed at the production of priority industrial products. At the same time, despite the name, companies intending to use the tool do not need to be part of a technological cluster. In turn, it is fundamental that the products are included in the list of priority products, which is approved by the Interdepartmental Commission of the Ministry of Industry and Trade of Russia.[27]

In order for products to be included in the above list, the borrower should apply to the sectoral department of the country's Ministry of Industry and Trade with a proposal for their inclusion. The key criteria for identifying priority products are their compliance with the section "C — Manufacturing Products" of OKPD (Russian Classification of Products by Economic

[26] Order of the Government of the Russian Federation No. 449-o dated 22.02.2023. URL: http://publication.pravo.gov.ru/document/0001202302270038?ysclid=lnsliaueok744565916

[27] As of April 2023, the List adopted on 23.03.2023 is up to date. URL: https://gisp.gov.ru/documents/16848559/ (accessed on 22.04.2023).

Table 5

Main aspect of concessional lending under the CIP

Characteristics	Content
Volume of lending to participants	The loan amount is from RUB 5 billion to RUB 100 billion.— intended for the implementation of investment projects under which long-term contracts for the supply of priority products have been concluded (term of at least 5 years and amount of at least RUB 10 billion)
	The loan amount — from 1 to 100 billion RUB.— is intended for the implementation of investment projects involving the production of medicines and materials used for medical purposes
	The loan amount ranges from RUB 1 to 100 billion.— is intended for the implementation of investment projects envisaged by agreements of intent between the Russian Government and interested organisations in the interests of developing high-tech industries
	The loan amount — from 2 to 100 billion RUB.— Generally intended for the implementation of investment projects
Period of preferential lending	Period — from the date of conclusion of the loan contract (agreement) until the expiry of 2 years after the date of completion of the investment phase
Amount of preferential rate	The amount is 3% + key rate of the Central Bank of the Russian Federation * 0.3
Subsidy to the bank for compensation of income shortfalls	Calculated in the amount of 90% of the key rate of the Bank of Russia
Co-financing	Available. In this case, the amount of the preferential loan may not exceed 80% of the total cost of the investment project

Source: Resolution of the Government of the Russian Federation from 22.02.2023 No. 295 "On the state-granted support of organizations implementing investment projects aimed at production of priority products".

Activities)[28] 2[29] on the one hand, and with one of the following lists on the other hand:

- sectoral import substitution plans[30] provided that the level of consumption of domestically manufactured products in the total volume of Russian consumption is less than 40% (in case there is manufacturing of products in the country);
- critical components;
- vital and essential medicines for medical use;
- strategically important medicines, the production of which must be ensured in Russia.[31]

Obtaining a favourable loan requires that the investment project has a certain sectoral affiliation and corresponds to one of the 20 main areas, among which are: aviation, medical, machine-tool industry, shipbuilding. At the same time, the borrower is required to allocate the funds in targeted areas, such as: development of project documentation, design, survey and development works, creation and acquisition of property, plant, and equipment.

The main characteristics of the instrument in terms of co-financing, size and terms of lending, including the period of concessional lending, are presented in *Table 5*, but in accordance with the order of the Government of Russia these parameters can be changed, and special conditions of support can be used.

In order to obtain financing, investors have the opportunity to independently choose credit organisations with which the issue

[28] All-Russian Classifier of Products by Types of Economic Activities.

[29] Excluding classes "10", "11", "12", "14", "15", "16", "31" OKPD 2.

[30] These are sectoral plans of the Ministry of Industry and Trade of Russia.

[31] Order of the Ministry of Industry and Trade of the Russian Federation No. 833 dated 14.03.2023 "On Approval of the Methodology for Determining the List of Priority Products".

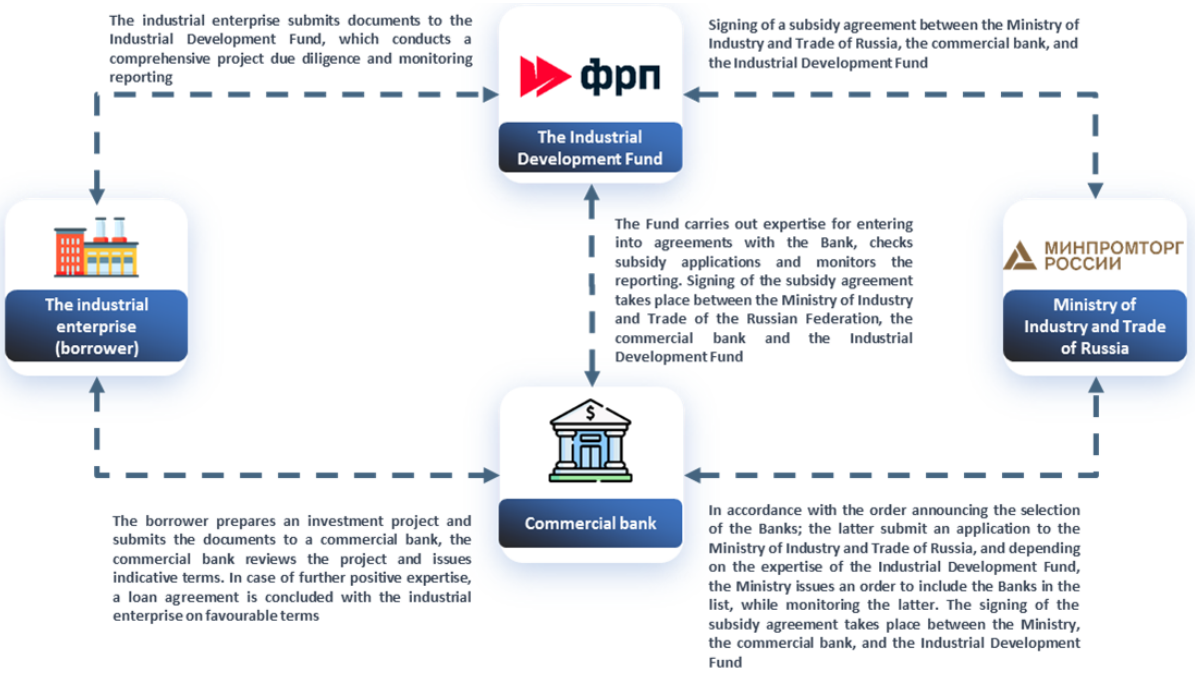

Fig. 2. **Model for interaction between CIS participants**

Source: Resolution of the Government of the Russian Federation from 22.02.2023 No. 295 "On the state-granted support of organizations implementing investment projects aimed at production of priority products".

of providing funds is being worked out. As for the latter, they have a specific procedure for selecting and receiving a subsidy. An important place in these processes is occupied by the Industrial Development Fund, which considers the applications received and prepares materials on the possibility of concluding an agreement (granting a subsidy) or notifies credit organisations of the need for revision. In addition, the Industrial Development Fund, which is vested with the functions of the Platform operator, advises borrowers, and carries out comprehensive expertise and monitoring of projects.

In general, there are four parties involved in the provision of concessional financing under the CIP instrument, including: the industrial enterprise (borrower), the Industrial Development Fund, the lending institution and the Ministry of Industry and Trade. (*Fig. 2*).

In addition, the Industrial Development Fund, acting as a one-stop shop and receiving documents from the borrower, is able to provide, together with the CIP instrument, other support measures, which include: fiscal benefits through preferential regimes (special investment contracts, special economic zones, territories of advanced socio-economic development, etc.), subsidy programmes (R&D subsidies, pilot batches of products, etc.), simplifications of administrative supervision and control (exemption from inspections, tax and customs monitors), etc.

Other measures include the possibility to obtain a loan from the Industrial Development Fund under special conditions. However, it is possible to combine preferential lending using the Platform and loans from the Industrial Development Fund if they are for different investment projects or if the borrower repays the loan from the Fund within 12 months from the date of the CIP loan agreement. The right to use the proceeds of the received loan for the purpose of repayment of the loan is available.

Applications for granting the support tool are supposed to be accepted at least once a year,

and the first submission was made in the period from 29.03.2023 to 14.04.2023. Meanwhile, after the end of the date of acceptance, it was decided to extend it until 1 October 2023 in the interest of increasing the number of recipients of the CIP tool. It is planned to select investment projects at least once a month as they are ready for consideration by the Interdepartmental Commission.

Summing up the discussion of the Platform, it is important to take into account that even a relatively short practical application of the CIP instrument, which reduces the interest rate for real sector companies to 5.25%, has led to an increase in the number of new projects and financing volumes at a relatively low budgetary cost of RUB 1 billion,[32] with a prospect of RUB 5 billion by the end of 2023. In addition, by the end of the first wave of applications, 46 projects with a total value of RUB 1.2 trillion were in a high state of readiness.[33]

TAXONOMY OF TECHNOLOGICAL SOVEREIGNTY PROJECTS

The above tools of the Project Finance Factory and the Cluster Investment Platform are similar in terms of content from the point of view of solving the problem of investment support for the implementation of priority projects, but the potential for supporting investment projects in the field of technological sovereignty is not limited to them. In particular, it is worth noting another tool for stimulating technological development, the initiative to create which was put forward by the Bank of Russia,[34] — a taxonomy. This tool, although it has been used previously in other areas, for example, in the interests of implementation of projects in the field of sustainable development [19, 20], but before the Central Bank's proposal it was not associated with Russia's technological sovereignty. Given that the financing of projects with a high technological component implies increased risk for the investor, according to the authors of the report, the instrument should establish risk-sensitive incentive regulation for investment projects according to the relevant taxonomy of the Government of the country.

In general, the initiative of the Central Bank of Russia was favourably assessed by the Government. In particular, it was concluded that the new instrument will make it possible, through regulatory relief, to increase the volume of investment in priority projects to RUB 10 trillion[35] and to increase the share of initiatives, for example in the manufacturing industry in the corporate loan portfolio of banks, from about 12–15 to 25–30 per cent.[36]

It is important to take into account that the taxonomy envisages the formation of transparent standards and criteria, and its key advantage is that credit institutions will be able to finance technological sovereignty projects with a reduced capital burden. Moreover, the lower the level of risk and the higher the significance of the investment project, the higher the downward evaluation coefficient. Certainly, a complete reduction of regulatory conditions is not expected; rather, we should talk about the application of a risk-sensitive approach with the possibility of using reduced risk weights depending on the stability of credit organisations and the quality of risk management. The approach will result in a reduction of the interest rate on loans in priority areas in accordance with the criteria (taxonomy) from 0.5 to 1% compared to the market level.[37]

[32] As of April 2023, the data are.

[33] Federation Council of the Federal Assembly: official website. URL: http://council.gov.ru/events/news/144128/ (accessed on 30.05.2023).

[34] Analytical Report of the Bank of Russia "Prospective Areas of Development of Banking Regulation and Supervision". URL: https://www.cbr.ru/Content/Document/File/143838/dbra_20221227.pdf (accessed on 05.05.2023).

[35] Government of the Russian Federation: official website. URL: http://government.ru/news/48256/ (accessed on 27.05.2023).

[36] By authority of technological sovereignty. URL: https://www.kommersant.ru/doc/5954450 (accessed on 01.05.2023).

[37] Ibidem.

In turn, the Russian Government has prioritised two groups of projects: technological sovereignty and structural adaptation of the economy. Focusing on the first category, it should be noted that 13 industries were selected, including agricultural and specialised machine building, machine-tool and aviation industries, pharmaceuticals, and electronics. These are mainly areas with a production localisation level of less than 50%.[38] However, despite the development of priority areas, it will not be until the second half of 2023 that the organisation will be able to take full advantage of the tool in practice.

However, the market character of the taxonomy should already be noted. This is due to the fact that the instrument makes it possible to solve state tasks not by strictly directive methods using budgetary resources, but through the formation of favourable conditions in the form of lower interest rates. At the same time, the credit institution independently develops the terms of lending taking into account capital saving, which facilitates its flow into priority areas without substituting the market mechanism.

On the other hand, the possibility of using the tool together with certain measures of state support, which is planned to be fixed and implemented by the state authorities, seems to be significant. First of all, we mean the potential interaction of the taxonomy with the above-mentioned cluster investment platform and project finance factory. Building interaction with other tools actually makes the taxonomy of technological sovereignty projects a system-forming stimulus tool, into the contours of which other initiatives and measures of state support can be gradually built. In other words, the taxonomy is used to create a holistic system of support tools in the area under consideration.

[38] URL: http://publication.pravo.gov.ru/Document/View/0001202304170025?ysclid=lnsmuna286235023999&index=1

CONCLUSIONS

Thus, the analysis allows us to conclude that Project Finance Factory, Cluster Investment Platform, and taxonomy can potentially become effective credit and financial instruments to increase capital investment in new medium- and high-tech investment projects in key areas of structural transformation of the Russian economy. The proposed instruments are associated with the goals of achieving technological sovereignty of the Russian Federation, transition to innovation-oriented economic growth and technological support of sustainable development of production systems. Among their main advantages are the reduction of the cost of credit funds in the implementation of investment projects in the relevant sectors and the active involvement of private investors and banking sector organisations in the process of restarting the investment cycle.

At the same time, despite their practical effectiveness, the instruments have a number of specific and general disadvantages.

If we talk about the project finance factory, it requires a large amount of initial investment on the part of the project initiator, and even a reduction in requirements seems insufficient for projects exceeding several tens of billion roubles, which may be of strategic sectoral and/or regional importance.

The Cluster Investment Platform implies a rather significant limitation in the receipt of applications in terms of time, which means that when implementing a multi-stage and complex project with a large number of actors, the investor may not have time to prepare design and estimate documentation within the established period. Another important negative aspect is the rather low volume of financing in the amount of RUB 5 billion and the lack of coordination with other complementary support instruments that are not under the jurisdiction of the Ministry of Industry and Trade of the country.

When it comes to taxonomy, it is not possible to fully assess the effectiveness of this tool

at this stage. Moreover, there are no publicly available materials according to which the regulatory reliefs are supposed to be developed. As a consequence, it is quite likely that there will be a risk that they turn out to be insufficient and the resulting interest rate reduction is not significant enough to contribute to the attraction of investor funds in the planned volume.

In general, the instruments are not yet expected to fully interact with each other. Moreover, there is no interrelation with other tools for supporting investment projects, including contractual and fiscal ones. The attempt to link the taxonomy with the Cluster Investment Platform and Project Finance Factory — is a correct step from the point of view of building a unified system of tools to support investment projects of technological sovereignty, as well as the fact that the Cluster Investment Platform assumes packaging of the product with specific measures, but it can hardly be considered sufficient.

In addition, the lack of transparency and accountability of the functioning of investment support instruments at the stage of project selection should be noted. Thus, despite the interaction with the tools through information systems (GIS "Industry", UIS "DataRoom"), no list of funded projects is freely available, and it is impossible to assess their regional, sectoral and industry affiliation, as well as the contribution of each of them to the achievement of technological sovereignty.

To a large extent, these shortcomings are caused by the fact that the system is oriented towards the formation of a package of innovation projects that are built "from below",— based on the proposals of interested innovators outside the system of technological priorities for the development of specific sectors of the national economy and industry within the framework of the long-term strategy of technological development of the country.

The following measures could contribute to overcoming the above-mentioned and other negative aspects:

1. Formation of an updated long-term strategy for technological development of the country, which would outline specific areas of technological development (a list of promising technologies) for specific sectors and industries of the national economy on the basis of a technological audit as a basis for the creation and selection of technological projects for investment support.

2. Formation of an open register of investment projects of technological sovereignty, which would reflect the main investment, fiscal and social indicators. It is important to make the register available to stakeholders, including potential contractors, which will stimulate the possibility of technological co-operation and the creation of new supply chains.

3. Expanding opportunities for borrowers to apply support measures of the Industrial Development Fund and (or) the Ministry of Industry and Trade not only within the framework of the Platform, but also in the context of the Project Finance Factory and taxonomy, and at the next step — together with support measures of other authorities and (or) development institutions to build a single "seamless" system of investment support instruments for technological sovereignty. This could involve, for example, joint co-operation with instruments such as the "Agreement on the Protection and Promotion of Capital Investment" or the "Industrial Mortgage Agreement".

4. Creation of a single information space for investors through the integration of GIS "Industry", UIS "DataRoom" with other state information systems (GAS "Management", GIS "Capital Investment", etc.), which is an important action to accelerate data exchange, reduce transaction costs, as well as a necessary solution for the implementation of the previous point.

5. Provision within the Cluster Investment Platform of an extension of the application

deadline by one calendar year at the monthly meeting of the interdepartmental commission in order to provide applicant companies with a longer period of time to prepare project documentation (business plan, investment plan, financial model, etc.). This would be important for organisations to structure investment projects on their own without incurring additional costs in the form of engaging consulting and investment companies due to the short timeframe for submitting an application for a support tool.

6. In the interests of investors with an acceptable level of own funds (about 5–7.5 per cent), but implementing priority investment projects in the field of technological sovereignty, it is advisable to give them the opportunity to use the equity funds being created, which could compensate for the lack of the initiator's funds for participation in the Project Finance Factory.

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Conflicts of Interest Statement: The authors have no conflicts of interest to declare.

The article was received on 30.06.2023; revised on 20.07.2023 and accepted for publication on 20.08.2023. The authors read and approved the final version of the manuscript.