The system of financial control of the projects of the Megascience class in the Russian Federation

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Abstract. This article is dedicated to the system of financial control of the projects of the megascience class in the Russian Federation. The author highlighted the structure of this system, defined the goal, objectives, and principles of financial control of projects of the megascience class, investigated the features of the implementation of external and internal state financial (budget) control of megascience projects. The article concludes that the priority of budget financing for megascience projects in the Russian Federation predetermines the leading role of budget control. The financial control model is also influenced by the organizational and legal form used in the implementation of megascience projects. The article demonstrates that the assignment of the functions of the operator of megascience projects to an international intergovernmental organization or a specially created organization with the distribution of shares among the countries participating in the project, allows to provide more transparency of information on the progress of its implementation in general and financing in particular. The study showed the need for wider application of independent audit control of megascience projects being implemented in the territory of the Russian Federation. Based on the results of the study, proposals were formulated aimed at increasing the efficiency of spending money in the process of implementing megascience projects and the transparency of the activities of scientific institutions with regards to the public.

1. Introduction
Megascience class projects are associated with solving a whole range of complex problems [1]. Such projects involve the development of large scientific installations that have no analogues, aimed at obtaining breakthrough knowledge and technologies for the benefit of all mankind. In this regard, it can be argued that the projects under consideration, first of all, are implemented in the public interest. Such studies are not commercially attractive for business, since, as a rule, they solve fundamental scientific problems and cannot be applied in order to generate profit [2]. All this, ultimately, determines the priority character of state financing of projects of the megascience class. In addition, the complexity of the tasks to be solved and the high cost of megascience class installations make international cooperation in this area economically feasible. A prerequisite for the successful implementation of megascience projects is effective financial control.

Financial control is the activity of authorized bodies and organizations aimed at verification of compliance with financial legislation and subordinate regulatory legal acts, and in certain cases also at identification of risks [3], determination of feasibility and/or effectiveness of the activities of subjects of financial legal relations.
Without control, the rule of law loses its main feature—generally binding nature. The law cannot rely solely on high legal awareness—it must have effective tools to stimulate lawful behavior.

2. The structure of the financial control system for projects of the megascience class

Financial control is a complex system that includes a number of elements (subsystems). It appears that this system includes:

- value-orienting subsystem—a set of goals, objectives and principles serving as the foundation of financial control within the framework of projects of the megascience class;
- regulatory subsystem—legislative acts regulating public relations that develop in the process of financial control in the area under consideration, other official documents that are not sources of legal regulation of these public relations;
- object subsystem (subsystem of objects of control)—what the control activity is aimed at, its object and subject;
- institutional and competence subsystem—a set of subjects exercising financial control of projects of the “megascience” class, as well as their rights and obligations;
- structural and functional subsystem—the structure (types and forms), as well as the mechanism of functioning (methods and procedures) of control activities.

The foregoing control elements of the projects of the megascience class ultimately determine the system of financial control in the field of money circulation. Let's characterize the most important of them.

3. Purpose, objectives and principles of financial control of projects of the megascience class

Science notes that “control is a legal structure designed to ensure strict and rigorous implementation of laws, compliance with legal discipline by state authorities, local governments, individuals and legal entities”[4]. Thus, we can conclude that the purpose of financial control in the area considered in this article is ultimately to ensure the legitimacy and effectiveness of the implementation of scientific projects of the megascience class.

This goal determines the formulation of a number of tasks, which include:

- prevention of misconduct and identification of violations of laws in the process of implementing projects of the megascience class;
- analysis of compliance with the plan for the implementation of megascience projects and ensuring the timely delivery of funds and other resources to the final recipients;
- determination of the completeness and reliability of accounting and reporting on ongoing operations;
- identification of possible reasons for deviation from the planned results, identification of gaps and development of proposals for improving the mechanism of legal regulation and implementation of megascience projects.

We emphasize that the range of tasks of financial control in the area under consideration is not limited to those listed above and they can have their own interpretation in relation to precise projects, each of which has its own specifics.

In turn, legal principles are the essential basis, fundamental ideas that underlie legal regulation and guide the activities of the subjects of legal relations. The principles are an additional structure of the entire system of legal regulation. They reveal the essence of law, its values and significance. We can say that the principles of law are the philosophy of law.

The principles of financial control of megascience projects include:
• General legal principles — principles of legality, equality of citizens before the law, unity of rights and obligations, etc.

• Principles of financial law — include the principles of priority of public tasks in the legal regulation of financial relations; social orientation of financial and legal regulation; unity of financial policy; distribution of functions in the field of financial activities based on the separation of powers, etc.

• The principles of financial control — the fundamental principles that lay the foundation for control activities - these are principles such as independence, objectivity, competence, proportionality and efficiency.

4. Legislative legal acts governing the implementation of financial control in the framework of the implementation of projects of the megascience class in the Russian Federation

The regulatory subsystem of financial control of projects of the megascience class consists of the provisions of the Constitution of the Russian Federation, international treaties and agreements, legislation, by-laws.

The legal foundations of financial control are introduced by the Constitution of the Russian Federation. In turn, the priority of budget financing of megascience projects leads to interest in the provisions of the main law of Russia concerning the legal regulation of budgetary relations.

So, according to Art. 71 of the Constitution of the Russian Federation, the federal budget is under the jurisdiction of the federation. At the same time, on the basis of part 5 of Article 101 of the Constitution of the Russian Federation, to exercise control over the execution of the federal budget, the Federation Council and the State Duma form the Accounts Chamber, the membership and procedure of which are determined by federal law.

In accordance with Part 4 of Art. 15 of the Constitution of the Russian Federation, generally recognized principles and norms of international law and international treaties of the Russian Federation are an integral part of its legal system. In this regard, the provisions of international treaties and agreements are of great importance.

One of the main international legal acts regulating financial control issues is the Lima Declaration of Guidelines on Auditing Precepts, which establishes the legal framework for the functioning of external financial control bodies. Also among the international acts in the area under consideration international agreements should be named, on the basis of which megascience projects are being implemented. An example is the agreement signed in 2016 between the Government of the Russian Federation and the International Intergovernmental Research Organization Joint Institute for Nuclear Research on the development and operation of a complex of superconducting rings on colliding beams of heavy ions NICA.

The foundations of state financial control in the budgetary field are introduced by the Budget Code of the Russian Federation. Chapter 26 “Fundamentals of state (municipal) financial control” establishes the legal norms governing the procedure for the implementation of external and internal state financial control. Here one should also mention the Federal Law of 05.04.2013 No. 41-FL “On the Accounts Chamber of the Russian Federation”, which regulates relations arising in the process of the implementation of external state audit (control) by the Accounts Chamber of the Russian Federation.

Decree of the President of the Russian Federation of May 7, 2018 No. 204 “On national goals and strategic objectives of the development of the Russian Federation for the period until 2024” stipulates that the Government of the Russian Federation, when developing a national project in the field of

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1 The RF Government Decree of April 27, 2016 No. 783-p “On the signing of the Agreement between the Government of the Russian Federation and the International Intergovernmental Research Organization Joint Institute for Nuclear Research on the development and operation of a complex of superconducting rings on colliding beams of heavy ions NICA” // CL RF. 2016. No. 19. Art. 2720

2 Budget Code of the Russian Federation of July 31, 1998 No 145-FL // CL RF. 1998. No. 31. Art. 3823.

3 CL RF.2018. No. 20. Art. 2817
science, should proceed from the fact that in 2024 it is necessary to ensure that the following goals and targets are achieved:

- ensuring the presence of the Russian Federation among the five leading countries of the world carrying out research and development in the areas determined by the priorities of scientific and technological development;
- ensuring the attractiveness of work in the Russian Federation for Russian and foreign leading scientists and young promising researchers;
- an outstripping increase in domestic spending on research and development from all sources compared to the growth of the country's gross domestic product.

Achievement of the designated goals and solution of the assigned tasks is possible only in conditions of proper funding of science. At the same time, it is obvious that the state plays the leading role in the financial support, coordination and management of scientific activities at the present stage [5]. First of all, this applies to various kinds of fundamental theoretical research, the conduct of which cannot interest business, but is important for the whole society. In this regard, it can be argued that funding for science occurs in the public interest, which determines the priority of state budget funding.

Based on Art. 6 of the Budget Code of the Russian Federation, budget expenditures are recognized as monetary funds paid from the budget, with the exception of funds that, in accordance with this Code, are sources of financing the budget deficit. The classification of costs is given in Art. 21 BC RF. In this regard, it is interesting to note that in clause 3 of the named article, the costs of financing science are not allocated as a separate section of the classification of budget costs. As subsections, you can find various kinds of applied scientific research in the field of national issues, national defense, national security and law enforcement, national economy, housing and communal services, environmental protection, education, culture, cinematography, etc. Thus, we can conclude that, within the framework of the functional classification of costs enshrined in the Budget Code of the Russian Federation, firstly, there is no mention of scientific research that is not of an applied nature (they will be classified as other costs), and secondly, the costs of applied research differentiated between different spheres of social life, i.e. there is no unity and interconnection between different areas of applied research. It seems that this problem should be solved by fixing a separate independent section in the classification of budget expenditures, which would provide for expenditures on scientific research of both applied and fundamental nature.

Since the mid-2000s, work has begun on the implementation of measures aimed at increasing the efficiency of the use of budget funds, the so-called “result-oriented budgeting” [6]. The authors note that result-oriented budgeting is a principle that was incorporated into the program of reforming the budgetary system of the Russian Federation, the main goal of which was to reorient all subjects of budgetary activity from the simple use of budgetary funds to activities that would bring real benefits to the state. Today, the ineffective use of budget funds is the main problem of the domestic budget system. One of the directions for the implementation of result-oriented budgeting was the transition to a completely different system of budgeting which is of program nature” [7]. In turn, the program-targeted approach to financing implies that the overwhelming part of the budget expenditures of the budgetary system of the Russian Federation (about 75-90%) should be carried out within the framework of state programs [8].

The latter is especially important in the context of the topic under consideration, since it is within the framework of state programs that funds are allocated to finance science in the Russian Federation.

Today budgetary funds for financing science are allocated within the framework of the annually approved budget law. At the same time, state programs approve a plan for the distribution of expenses for several years. This is the way how medium-term planning of budget expenditures for financing science is ensured.

It should be noted that, starting from 2018, all state programs are developed taking into account the goals and targets of national projects. In accordance with clause 3 of the Regulation on the organization
of project activities in the Government of the Russian Federation, national project is a project (program) that ensures the achievement of goals and targets, the fulfillment of tasks determined by Decree of the President of the Russian Federation of May 7, 2018 No. 204 “On national goals and strategic objectives of the development of the Russian Federation for the period up to 2024”.

Among other things, the Government of the Russian Federation has developed a national project “Science”, the implementation of which provides for the allocation of 635.9 billion rubles until 31.12.2024, of which 404.8 billion rubles - federal budget funds, 231.2 billion rubles - off-budget sources. The national project “Science” includes three federal projects with the following amount of funding:

- development of advanced infrastructure for research and development in the Russian Federation - 350 billion rubles;
- development of scientific and scientific-production cooperation - 215 billion rubles;
- development of human resources in the field of research and development - 70.9 billion rubles.

The listed legislative acts, ultimately, predetermine the goals and objectives of megascience projects, their target and cost indicators, mechanisms for the implementation of the projects under consideration, as well as the general principles of financial control. Financial control has its own characteristics in relation to the scientific field in general and the field of implementation of scientific projects of the megascience class.

5. Types of financial control of megascience projects in the Russian Federation

Financial control carried out in the process of implementation of projects of the megascience class is complex and has several main directions. These directions include state financial (budget) control - internal and external, as well as independent audit control. Further on we consider these directions in more detail.

5.1. External financial (budget) control

External state financial (budget) control in the Russian Federation is carried out by independent control and accounting bodies. The main control and accounting body of Russia is the Accounts Chambers. The Accounts Chamber is a permanent supreme body of external governmental audit (control), formed in the manner prescribed by this Federal Law, and accountable to the Federal Assembly.

The tasks of the Accounts Chamber include the organization and control over the targeted and efficient use of federal budget funds, budgets of state extra-budgetary funds; audit of the feasibility and effectiveness of achieving the strategic goals of the social and economic development of the Russian Federation; determination of the reliability of the budget reporting of the chief administrators of the federal budget funds and the budgets of state extra-budgetary funds of the Russian Federation and the annual report on the execution of the federal budget, budgets of state extra-budgetary funds of the Russian Federation, as well as a number of other tasks.

As part of its activities, the Accounts Chamber carries out control and expert-analytical activities. The Accounts Chamber has the right to conduct audits of any recipient of budget funds.

Based on the results of the control and expert-analytical activities carried out in 2019, the Accounts Chamber in the annual report formulated a number of problems that hinder scientific development, including the implementation of megascience projects in Russia. Such problems in the Report on the work of the Accounts Chamber of the Russian Federation in 2019 include the following:

- lack of a comprehensive system for monitoring the performance of research activities;

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4 CL RF. 2018. No. 20. Art. 2817.
• the main source of funding for science is still the budget - about 60-70% of research costs are provided at the expense of public funds;
• activities in the Russian science sector are unattractive for scientists, including due to insufficient development of the corresponding infrastructure and low wages;
• an integral system of measures of state support for the development of science and the system of principles for the formation and application of these measures is not legally enshrined [10].

Important conclusions were also made in the Report on the results of the expert and analytical event “Identification of the main reasons hindering scientific development in the Russian Federation: assessment of scientific infrastructure, sufficiency of motivational measures, ensuring the attractiveness of the work of leading scientists”. It was noted that at the time of publication of this report (February 7, 2020), the Government of the Russian Federation still had not approved the Federal Scientific and Technical Program for the Development of Synchrotron and Neutron Research and Research Infrastructure for 2019–2027, and “the Council for the Implementation of the Federal Scientific and Technical Program also had not approved the characteristics of the developed and modernized megascience class facilities and, accordingly, the additional need for budget allocations from the federal budget for financial support of measures to develop unique scientific facilities of the megascience class has not been determined” [11]. At the same time, many Russian megascience projects, with varying degrees of intensity, have been implemented for more than ten years.

In order to solve existing problems in the implementation of the main directions of scientific development, the Accounts Chamber proposed:

• legislatively consolidate the system of measures of state support for the development of science;
• move to new rules for increasing salaries of scientists and researchers;
• implement a comprehensive system for monitoring the performance of research activities;
• distribute budgetary allocations for R&D taking into account the effectiveness of research activities;
• increase budget allocations for the development of scientific infrastructure, as well as improve the efficiency of using the existing infrastructure.

The Accounts Chamber also pointed out the need to approve the federal scientific and technical program for the development of synchrotron and neutron research and research infrastructure for 2019–2027. This program was approved by the Decree of the Government of the Russian Federation of March 16, 2020 No. 2875.

5.2. Internal financial (budget) control
In accordance with paragraph 3 of Art. 265 of the RF BC, internal state (municipal) financial control is the control activity of the Federal Treasury, state (municipal) financial control bodies, which are executive authorities of the constituent entities of the Russian Federation (local administrative bodies). The main role in the implementation of internal control over the allocation of federal budget funds is played by the Federal Treasury of the Russian Federation.

In Russia, most of the megascience projects are implemented on the basis of budgetary scientific institutions - the Federal State Budgetary Institution of Science G.I. Budker Institute of Nuclear Physics of the Siberian Branch of the Russian Academy of Sciences (INP), the Federal State Budgetary Institution “Research Center “Kurchatov Institute” (NRC Kurchatov Institute), the Federal State Budgetary Institution “B.P. Konstantinov St. Petersburg Nuclear Physics Institute” of the National Research Center “Kurchatov Institute” (PNPI), the Federal State Budgetary Institution “A.A. Logunov

5 The RF Government Decree of March 16, 2020 No. 287 “On approval of the Federal Scientific and Technical Program for the Development of Synchrotron and Neutron Research and Research Infrastructure for 2019 – 2027” // CL RF. 2020. No. 13. Art. 1913.
Institute of High Energy Physics of the National Research Center “Kurchatov Institute” (IHEP). Financing of the activities of these budgetary institutions, including the implementation of megascience projects, is carried out through accounts opened with the Federal Treasury. Thus, the Treasury carries out preliminary control, checking the validity of each operation carried out by budgetary institutions. In addition, a feature of the Russian system in organizing internal financial (budget) control is that subsequent control is also carried out by the Federal Treasury.

When conducting internal financial (budget) control, the Federal Treasury has the right to conduct inspections, audits and surveys. Also, when exercising its powers, the Treasury sends to the objects of control acts, conclusions, submissions and/or instructions, sends to financial authorities (governing bodies of state extra-budgetary funds) notifications on the application of budgetary coercive measures, carries out proceedings on cases of administrative offenses in the manner prescribed by the legislation on administrative offenses, and also exercises a number of other powers.

Analysis of the reporting materials of the Federal Treasury concerning the implementation of internal financial (budget) control shows that control over the spending of budgetary funds by scientific institutions is not singled out as an independent direction of control activities, and no attention is paid to financial control over the implementation of scientific projects in general and scientific projects of the megascience class in particular.

5.3. **Independent audit**

International experience shows the importance of independent audits of megascience projects [12]. Unlike Russia, where, as already mentioned, these projects are in most cases implemented on the basis of budgetary institutions, abroad the functions of the operator of megascience projects are often assigned to an international intergovernmental organization [13] or a specially created organization with the distribution of shares among the countries participating in the project (for example, ITER, FAIR [14], CERN [15], etc.), which allows for greater transparency of information on the progress of its implementation in general and funding in particular. These organizations publish financial statements annually, which are subject to independent audits [16].

In Russia, there is no independent audit of budgetary institutions implementing megascience projects. Moreover, among all the megascience projects in the territory of Russia, only the NICA project is being implemented by an international intergovernmental organization - the Joint Institute for Nuclear Research (hereinafter also referred to as JINR). Meanwhile, neither the JINR Charter 6, nor the Agreement between the Government of the Russian Federation and the international intergovernmental research organization Joint Institute for Nuclear Research on the creation and operation of a complex of superconducting rings on colliding beams of heavy ions NICA contain provisions for an independent audit of either JINR itself or the progress implementation of the NICA project.

It seems that the introduction of independent audits will help to improve the efficiency of the use of funds in the process of implementing megascience projects in the Russian Federation.

6. **Conclusion**

Thus, this study allows us to draw a number of conclusions:

1. Financial control is one of the prerequisites for the successful implementation of megascience projects. It allows to assess the effectiveness and purposefulness of the use of funds, prevent possible financial violations, assess existing problems, and formulate proposals aimed at overcoming these problems. At the same time, the exceptional complexity of this kind of projects determines the presentation of increased requirements for the competence of auditors.

2. The priority of budget financing for megascience projects in the Russian Federation predetermines the leading role of budget control. In addition, the financial control model is also influenced by the organizational and legal form used in the implementation of megascience

6 Charter of the Joint Institute for Nuclear Research // URL: http://www.jinr.ru/wp-content/uploads/Advisory_Bodies/Charter_JINR_1999_rus.doc (date of reference – 8.02.2020).
projects. It seems that the assignment of the functions of the operator of megascience projects to an international intergovernmental organization or a specially created organization with the distribution of shares among the countries participating in the project, allows to provide more transparency of information on the progress of its implementation in general and financing in particular.

3. Today in Russia, only the activities of the Accounts Chamber within the framework of external state financial (budget) control are aimed at assessing the achievement of strategic objectives in the implementation of the main directions of state policy in the scientific field [17]. The Accounts Chamber has formulated a number of noteworthy proposals aimed at increasing the efficiency of the use of public funds and achieving the planned results within the framework of megascience projects. The activities of the Federal Treasury in the framework of internal state financial (budget) control are not so emphasized and need more openness.

4. The study showed the need for wider application of independent audit control of megascience projects being implemented in the territory of the Russian Federation. Independent audit control will make it possible to more objectively assess the efficiency of spending money and increase the transparency of the activities of scientific institutions to the public.

References

[1] Kozheurov Ya S and Teymurov E S 2019 Concept, features and legal nature of global research infrastructure Actual Problems of Russian Law 106 pp 130–141
[2] Gorlova E N and Tkachenko RV 2019 The Concept of “Megascience” Class Projects: the Case of ITER and FAIR Installations Actual Problems of Russian Law 102 pp 205–213
[3] Nurakhov N N, Andreyandrey A S M, Kolesnikova E A, Petrov A A and Tsvetus N Y 2020 Analysis of risks and challenges to creating and operating Mega science research facilities Journal of Advanced Research in Dynamical and Control Systems. 12 Special Issue 6 pp 580–587
[4] Krokhina Yu A 2011 Financial Law of Russia: textbook (Moscow: Norma) p 130
[5] Arzumanova L L and Boltinova O V 2019 Megascience projects financing in the territory of Russia IOP Conf. Series: Journal of Physics: Conf. Series 1406 012005
[6] Boltinova O V 2020 Federal budget expenditures for the development of megascience class installations in national projects of the Russian Federation Actual Problems of Russian Law 114 pp 42–47
[7] Pronin A B 2015 Financial and Legal Regulation of Budgetary Control in the Constituent Entities of the Russian Federation: dissertation ... cand. jurid. sciences (Moscow) p. 122
[8] Boltinova O V and Arzumanova L L 2019 Legal regulation of megascience projects in Russia Actual Problems of Russian Law 104 pp 39–42
[9] Boltinova O V 2020 Federal budget expenditures for the creation of Mega science installations in national projects of the Russian Federation Actual Problems of Russian Law 114 pp 42–47
[10] Report on the work of the Accounts Chamber of the Russian Federation in 2019 // URL: https://ach.gov.ru/promo/annual-report-2019/ (date of reference – 8.02.2020)
[11] Report on the results of the expert-analytical event “Identification of the main reasons hindering scientific development in the Russian Federation: assessment of scientific infrastructure, sufficiency of motivational measures, ensuring the attractiveness of the work of leading scientists” // URL: http://audit.gov.ru/upload/iblock/94c/94cb719b9702e15f8092d998273c68a0.pdf (date of reference – 8.02.2020)
[12] Moshkova D M 2019 Public-private partnership in implementing “mega-science” projects IOP Conf. Series: Journal of Physics: Conf. Series 1406 012012
[13] Gorlova E 2019 Legal status of scientific collaborations in the implementation of megascience projects IOP Conf. Series: Journal of Physics: Conf. Series 1406 012013
[14] Moshkova D M and Lozovskij D L 2019 Legal aspects of the implementation of Megascience projects *Courier of Kutafin Moscow State Law University (MSAL)* 59 pp 34–41

[15] Smirnov S 2019 Russia - CERN cooperation: current status and perspectives *IOP Conf. Series: Journal of Physics: Conf. Series* 1406 012003

[16] Sitnik A A and Tkachenko R V 2020 Legal Regulation of Financing Mega-Science Projects *Actual Problems of Russian Law* 114 pp 48–64.

[17] Tkachenko R V 2019 Projects of the class “Megasciens” as one of the main directions of implementation of the budget policy of Russia *Courier of Kutafin Moscow State Law University (MSAL)* 59 pp 42–47