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# Performance Audit: Importance and Prospects within the Public Financial Control System

O.I. Lozitskaya<sup>a</sup>✉, N.L. Voronina<sup>b</sup>

Financial University, Moscow, Russia

<sup>a</sup> <https://orcid.org/0000-0001-7166-3213>; <sup>b</sup> <https://orcid.org/0000-0002-4769-5538>

✉ Corresponding author

## ABSTRACT

The article discusses the concept and application of performance audit in public administration integral to the modern public financial control system. **The aim** of the study is to analyze the public financial control system using modern approaches to audit performance and its development prospects in Russia. The authors use general scientific and special research **methods** (analysis, synthesis, induction, deduction), as well as methods of economic theory: positive analysis and scientific abstraction. The study analyzed basic approaches to defining the concept of "performance audit", its idea, the most important issues that it solves, and development prospects. The study proposed the concept of a two-level control system: the internal control bodies represented by the Federal Treasury of the Russian Federation should supplement the bodies conducting the performance audit. In the future, this will help build a full performance audit system of the use of public financial resources. As a **result**, the authors identified the problems of implementing the proposed concept. The key problem is the different statuses of the Federal Treasury of Russia and the Accounts Chamber of the Russian Federation, with different regulation of their activities. The authors named directions for the development of the public financial control system when it is impossible to implement the proposed system. In particular, they proposed to review and precisely regulate the activities of all public financial control bodies. The authors **concluded** that there is still no regulatory, legal and informational base necessary to switch to the proposed two-level performance audit system. Further studies may provide a deeper look at the possibilities and prospects of the integrated implementation of the performance audit system in the general government sector.

**Keywords:** performance audit; public financial control; public funds; internal control; financial resources; performance criteria

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## INTRODUCTION

Today, the Russian economy requires a complete review of the public financial control, which meets the goals and objectives to improve the performance efficiency of the budget system mechanisms of the Russian Federation. The modern stage of transformations in the state economy and administrative reform must revise the concept of performance audit, which will allow for systematic monitoring of proper use of public expenditures, as well as forecasting potential losses or benefits from the use of public resources. Today, there is a tendency in reforming public financial control in a gradual transition from routine monitoring of legality, expediency and accuracy of the formation, distribution and use of public resources and means to control from the perspective of economical, productive and efficient spending of public funds [1].

The economic development of Russia today is due to permanent changes, development of new ambitious goals and the need to address serious social, economic and political problems and challenges. A necessary condition for ongoing economic development is creating a platform for effective reforms for the successful performance of the state. In this situation, developing performance audit is a natural process associated with transformations in the public finance management system and the development of public financial control [2].

Financial mechanism is a basic mechanism of public administration and influence on the economic setup, whose fundamental part is the budget. The distribution and use of public funds, as well as other financial and material resources by the state, determines the effectiveness and efficiency of its activities as a whole.

Article 157 of the Budget Code legislates that the controlling bodies are entitled to performance auditing aimed at determining the efficiency and efficient use of public funds. Moreover, among the principles of the budget system of Russia, Article 34 of

the Budget Code names only the principle of effective use of budget funds<sup>1</sup>. However, in practice, a differentiated approach is used to understand the contents of performance audit [2]. Some scientists consider performance audit as a type of financial control, and others — as an instrument of public financial control [3].

Performance audit of state resources is a modern form of financial control [4]. It helps review the validity and rationality of the use of public funds. The problem of legislative consolidation of performance audit and its improvement is relevant to our country as never before. Public financial control varies from the traditional verification of accuracy, targeting, expediency and legality of the distribution of public financial resources to control from the standpoint of the effective, efficient and economical use of state resources in the form of performance audit [5, 6].

This approach is enshrined in the Lima Declaration of Guidelines. It notes that in addition to financial audit (verification of the proper use of funds and financial reporting), whose the importance is undeniable, there is also another type of control (it has a different task) — to determine efficient and economical use of public funds [7]<sup>2</sup>.

The public financial control system should include subsystems of state external and internal financial control [8].

According to the Budget Code, there are two types of control — internal and external — in the Russian Federation. The Federal Treasury of the Russian Federation is responsible for internal control, and the Accounts Chamber of the Russian Federation is responsible for external control; they should not duplicate each other's functions. Performance au-

<sup>1</sup> Budget Code of the Russian Federation dated July 31, 1998 No. 145-FZ (as amended on December 27, 2019).

<sup>2</sup> The Lima Declaration of Guidelines on Auditing Precepts was adopted in 1977 at the IX INTOSAI in Lima (Peru). It is the basic conceptual document of Supreme Audit Institutions (INTOSAI).

dit is conducted by the Accounts Chamber of the Russian Federation, which is reflected in the standard of the external state audit (control) of the Accounts Chamber — SGA 104 “Performance audit”. The Federal Treasury of the Russian Federation is responsible for control over the accuracy and legality of disclosure and movement of budget funds in personal accounts.

According to SGA 104, performance audit is a type of external state audit<sup>3</sup>. That is, speaking of performance audit, we refer to the work of the Accounts Chamber of the Russian Federation and corporate social responsibility (CSR) entities. The importance of performance audit is to evaluate the performance of public spending. This is a complex and multifaceted evaluation system, which includes the following functions:

- control in order to determine the economic relevance, legality and proper use of public funds;
- analysis of the effectiveness of using public funds
- control over the activities of state bodies in the financial sector, etc.

### PERFORMANCE AUDIT: ANALYSIS AND DEVELOPMENT PROSPECTS

In our opinion, there is now a number of imperfections in the definition and direct procedures for conducting performance audit, which reduce the quality of its implementation. As mentioned above, there is no single approach to the conceptual framework of this form of public financial control, which directly affects its consistency [9].

In international practice, performance audit is an integral part of external public financial control. The Office of the Auditor General of Canada (OAG) is vested with the responsibility for monitoring and reporting on the op-

erations of the Government of Canada<sup>4</sup>, which is a Member of Parliament. The OAG has a legislative basis in the Auditor General Act, the Financial Administration Act, and a number of other statutes. The Auditor General’s powers and responsibilities are set forth in legislation passed by Parliament, including the procedure for applying for a position and other provisions. Besides, they work on strategic development documents that also address issues of public audit, for example, the Federal Sustainable Development Strategy [10].

In Canada, financial audits, performance audits and special surveys are carried out. The financial audit is applied in the form of follow-up control and consists in analyzing the financial statements of both the whole state and individual departments of the Canadian government. Quantitative indicators of the execution of federal budget expenditures are mainly analyzed within its framework. More than half of the OAG’s work is to conduct financial audits. A special survey is a variety of thematic events that conducted on a regular basis in specific areas of activity [11].

Performance audit is an objective and systematic assessment of both the public finance management and the direct use of budget funds. The process of performance audit reveals effectiveness, efficiency and the external effect of directing budget funds to specific goals. Performance audit is considered the most time-consuming form of monitoring and expert analysis, and can take up to 18 months. This is due to the complexity of its organization and conduct. In this regard, the Office carefully selects objects and subjects of control and uses a risk-based approach to determine the most significant and relevant areas. Typically, performance audits are applied to public corporations.

In Finland, the supreme state audit institution is the National Audit Office of Finland

<sup>3</sup> The standard of external state audit (control) SGA 104 “Performance Audit” (approved by the Resolution of the Board of the Accounts Chamber of the Russian Federation dated November 30, 2016 No. 4 PK).

<sup>4</sup> Office of the Auditor General of Canada. URL: <http://www.oag-bvg.gc.ca> (accessed on 27.12.2019).

(NAOF). The NAOF performs its duties laid down in the Constitution through financial audit, compliance audit, performance audit and fiscal policy audit<sup>5</sup>. A performance audit reviews the purposefulness of central government finances, ensuring that state funds are used in an economical, efficient and influential manner. Performance audits are only conducted for activities in which significant amounts of state funds are used or which have a significant impact on the state's profit, expenditure or assets [12, 13].

The NAOF conducts 12–15 performance audits each year. Performance audits focus on determining the quality of financial management, and full and comprehensive assessment of the potential opportunities to increase productivity and efficiency within the control object. Thus, the subject of control can be organizational structure, financial system, operational planning and management, operational results and their impact on the environment, productivity and efficiency of operations.

International practices show that the purpose of performance audits should not only be to actually determine how efficiently federal and other resources are used by objects of control to achieve established goals, but to assess the real effect that society receives from using these resources. Achieving the planned goals often does not entail the qualitative change expected to be obtained as a result of certain measures [14].

For example, the goal of the department project “Development of railway transport infrastructure” of the state program “Development of the transport system”<sup>6</sup> is to accelerate commodity distribution and increase mobility of the population by building 1.8 thousand km of additional tracks and railway

lines. However, not all of these lines are likely to be made in the areas with all the conditions and high demand from the population and organizations. There might be no accompanying infrastructure (for example, roads) or its deadlines might be violated. Technically, the goal indicator is accomplished, but the final goal is not achieved.

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*The two-level control system will allow not to duplicate the functions of the two subsystems, but will lead to more precise regulation of the scope of activities of a particular state financial control body.*

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Thus, the Accounts Chamber of the Russian Federation should conduct a performance audit not only based on performance evaluation in terms of achieving strategic goals, the economical use of federal budget funds and other resources. The socio-economic effect, the impact on a particular activity, plays the key role depending on the goals. This approach will help determine the expediency of measures implementation, department and other projects included in state programs, make the necessary changes on time, and conduct a comparative analysis.

An important problem in performance evaluation of budget funds is the complexity and lack of precise criteria for performance audit. SGA 104 “Performance audit”<sup>7</sup> establishes that performance includes three components: effectiveness, productivity and efficiency, which correlates with the above examples from international practices, but contradicts the provisions of the budget legislation of the Russian Federation. However,

<sup>5</sup> The National Audit Office of Finland. URL: <https://www.vtv.fi/en/audit-and-evaluation/> (accessed on 27.12.2019).

<sup>6</sup> On approval of the state program of the Russian Federation “Development of the transport system”: Decree of the Government of the Russian Federation of December 20, 2017 No. 1596. ATP Consultant-Plus.

<sup>7</sup> The standard of external state audit (control) SGA 104 “Performance Audit” (approved by the Resolution of the Board of the Accounts Chamber of the Russian Federation dated November 30, 2016 No. 4 PK).

the results of a specific event depend on the parameters set by the inspector at the preparatory stage in the relevant documents (program, plan and others), so they are partially subjective.

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*By releasing the Accounts Chamber from the first control stage, we increase its productivity in monitoring the effectiveness of spending public funds, and the cost of control measures is reduced by narrowing the scope of control.*

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Besides, this standard sets the direction for performance evaluation of the use of federal budget funds and other resources; one of them is the performance evaluation of budget expenditures, considering the features determined by the type of expenditure. The current valuation methodology of the Accounts Chamber<sup>8</sup> contains a number of general universal criteria for the performance evaluation of planning and utilization, based on which it is possible to write calculation formulas with approved indicators according to established criteria (see Table).

The presented calculation formulas of the approved indicators for the performance evaluation of planning and execution of both the individual budget of the budget system and specific types of budget expenditures can form the basis for the performance evaluation methodology of federal budget expenditures considering the specifics of a particular direction and type of expenditures.

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<sup>8</sup> Criteria and methodology for performance evaluation of budget expenditures, considering the characteristics determined by the type of expenditure: approved by the co-chairs of the Working Group on the development of criteria and methods for performance evaluation of budget expenditures by Deputy Minister of Finance of the Russian Federation A. Lavrov and chief of staff of the Accounts Chamber of the Russian Federation Yu. V. Voronin. ATP Consultant-Plus.

It is necessary to improve the information exchange between the bodies of external and internal public financial control, in particular, to update competence and procedure for cooperation during the performance audit. The Federal Treasury cannot carry out a full performance evaluation of disbursing public funds. It should not do this, anyway. First, it would duplicate the functions of the Accounts Chamber of the Russian Federation. Second, it does not have evaluation standards; therefore, the evaluation would be subjective. However, the Federal Treasury could play an important role in preparing and planning activities for performance auditing by the Accounts Chamber of the Russian Federation.

We believe that the public financial control system regarding the performance audit should look as follows (see Figure).

Level 1 exercises control over the correct utilization of budget funds, in particular from the Federal Treasury in the field of verification of personal accounts. This level should separate those who have not violated formal requirements from those who have. Measures against violators are immediately taken at this level, and the Accounts Chamber of the Russian Federation is informed of the need for subsequent control measures at a particular object to determine the effectiveness of using budget funds.

If targeting and legality are fine, then external control comes into play — the Level 2 check with the internal control data. At this stage, the effectiveness of using public funds regarding all financial and economic activities of the control object is under consideration, since internal control has less authority to accurately determine the fulfillment of performance criteria (efficiency, effectiveness, productivity) [15, 16].

At present, the Accounts Chamber uses a risk-based approach in its activities, which implies certain procedures for planning and conducting control and expert analysis. The information received by the Federal Treasury will allow to identify objects of control with

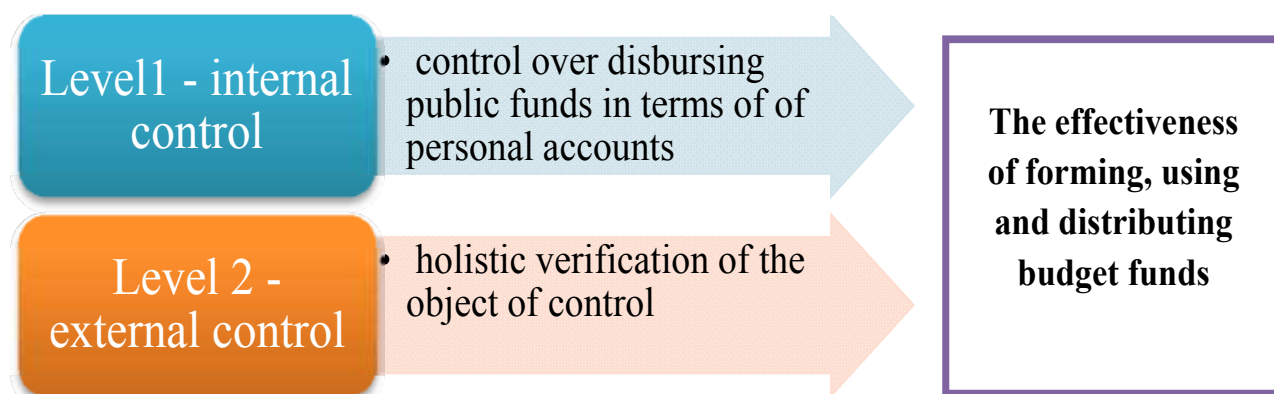
Table

**Criteria and calculation formulas for the performance evaluation  
of certain budget planning and utilization**

Criteria	Calculation formula	Legend
Complete rationale for expenditures on achieving the desired results, including objectivity and reliability of indicators	$C_{cre} = \frac{\sum E_r}{\sum E_{rr}}$	$C_{cre}$ is the coefficient of complete rationale for expenditures; $\sum E_r$ is the amount of expenditures that the rationale is provided for; $\sum E_{rr}$ is the amount of expenditures requiring the rationale
Accurate and complete distribution of budget allocations	$C_{ba} = \frac{\sum BA_c}{\sum BA_{fl}}$	$C_{ba}$ is the coefficient of budget allocations; $\sum BA_c$ is the amount of complete budget allocations; $\sum BA_{fl}$ is the amount of complete budget allocations provided for by the federal law on the federal budget
Complete rationale for unexpended balances of budget funds, if any	$C_{crb} = \frac{\sum UBr}{\sum UB_{rr}}$	$C_{crb}$ is the coefficient of complete rationale for unexpended balances; $\sum UBr$ is the amount of unexpended balances that the rationale is provided for; $\sum UB_{rr}$ is the amount of unexpended balances requiring the rationale
Compliance with the requirements for openness and transparency of information on the type of expenditures	$C_{cr} = \frac{\sum E_{cr}}{\sum E_{mcr}}$	$C_{cr}$ is the coefficient of compliance with the requirements; $\sum E_{cr}$ is the amount of expenditures in compliance with the requirements for openness and transparency; $\sum E_{mcr}$ is the amount of expenditures that must be presented in accordance with the requirements
Budgetary violations identified during preliminary, subsequent and operational financial control	$C_{bv} = \frac{\sum V_1}{\sum V_0}$	$C_{bv}$ is the coefficient of budgetary violations; $\sum V_1$ is the amount of violations detected in the reporting year; $\sum V_0$ is the amount of violations identified for the year preceding the reporting one

Source: compiled by the authors.





**Fig. Public financial control system at the performance audit**

Source: data visualization by the authors.

a high risk of inefficient using budget funds, other violations and shortfalls.

This approach does not imply that the scope of performance audit will exclude recipients of budget funds and non-participants in the budget process receiving funds from the corresponding budget of the budget system of the Russian Federation, in whose activities the Federal Treasury did not reveal violations or shortfalls after internal state financial control.

For example, when planning the activities of the Accounts Chamber for the next year, the reasons to include a control (expert and analytical) measure in the work plan, besides risks may be: the obligation to comply with the norms of the Federal Law “On the Accounts Chamber of the Russian Federation”<sup>9</sup>, and other laws empowering the Accounts Chamber; instructions, appeals and requests of the chambers of the Federal Assembly, the President of the Russian Federation; lack of control (expert and analytical) measures at a specific control object over the past three years; proposals by structural divisions of the Accounts Chamber and others.

The two-level control system will allow not to duplicate the functions of the two subsystems, but will lead to more precise regulation of the scope of activities of a particular

state financial control body. This will be an interaction between the two levels, which will allow more effective control of budget funds and will lead to closer cooperation between state financial control bodies. At the moment, conducting an audit of the control object, the Accounts Chamber of the Russian Federation should do a full audit cycle, which is a waste of time and resources [17]<sup>10</sup>. While conducting control, the Federal Treasury can only indicate accuracy in terms of legality, but not efficiency [18].

In order to see prospects in performance audit of public financial control, we should first set up an effective system of state bodies. By releasing the Accounts Chamber from the first control stage, we increase its productivity in monitoring the effectiveness of spending public funds, and the cost of control measures is reduced by narrowing the scope of control.

However, there is a number of obstacles to the implementation of the proposed two-level system for performance audits. Since the Federal Treasury and the Accounts Chamber are two different types of state (municipal) financial control bodies, they have differ-

<sup>9</sup> Federal Law dated 05.04.2013 No. 41-FZ “On the Accounts Chamber of the Russian Federation”. ATP Consultant-Plus.

<sup>10</sup> Golikova T. 2016. Speech at the plenary meeting of the State Duma of the Federal Assembly of the Russian Federation on bill No. 15455-7 “On the federal budget for 2017 and for the planning period of 2018 and 2019”. URL: <http://audit.gov.ru/news/tatyana-golikova-dohody-federalnogo-byudzheta-v-2017-2019-godah-budut-vyshe-zaplanirovannyh-28704> (accessed on 04.04.2020).

ent statuses and, therefore, their activities are regulated in different ways [19]. The Accounts Chamber of the Russian Federation is an independent body of public audit (control), accountable to the Federal Assembly. The Federal Treasury of the Russian Federation is directly subordinate to the Ministry of Finance. It does not have its own normative legal acts, except for the Budget Code and regulations (while the Accounts Chamber of the Russian Federation also relies on the Federal Law “On the Accounts Chamber of the Russian Federation” of 04.05.2013 No. 41-FZ, standards and other internal documents) [20].

### CONCLUSIONS

Despite the advantages described above, it is now impossible to switch to the two-level system of performance audit (whose name should also be changed, since audit is the prerogative of the Accounts Chamber of the Russian Federation only) without revising and accurately regulating the activities of all public financial control bodies. The development of a unified information system, closer cooperation between internal and external control, the development of comprehensive standards and regulations for the public (municipal) control system as a whole will lead to increasing quality of activities of both the Accounts Chamber of the Russian Federation with regard to performance audits, and the Federal Treasury of the Russian Federation, necessary for support and more focused organization of performance audit by the Accounts Chamber of the Russian Federation. Even if it is impossible to implement our

concept of adding internal control bodies represented by the Federal Treasury of the Russian Federation to the bodies conducting performance audit, in view of the obstacles described above, we consider it necessary to increase cooperation between them. The Federal Treasury of the Russian Federation will assist the Accounts Chamber of the Russian Federation, providing information on possible inefficient use of budget funds as a result of its control measures. For the Accounts Chamber of the Russian Federation, it is a signal to pay closer attention to certain objects dealing with budget funds. The coordination and cooperation that will not allow to worsen inefficient use of public resources, will identify and prevent violations at the early stages. All this will improve the process of performance audit, and will lead to a more rational use of public budget funds.

The process of legislative and methodological consolidation of fundamental concepts and procedures for the performance audit as an integral part of public financial control is not complete. The current methodology for performance evaluation of using federal budget funds and other resources does not have specific calculated indicators, which can lead to various approaches when carrying out specific control and expert analytical measures. Customization, improving information exchange, applying a risk-based approach, emphasis on analysis of organizing and functioning of financial management of control objects are quite controversial issues when setting the task to improve public financial control in the Russian Federation. Each of them requires further in-depth research.

### REFERENCES

1. Samarukha V. I., Derevtsova I. V. Public financial control in the Russian Federation. Irkursk: Baikal State Univ. Publ.; 2018. 160 p. URL: <http://sgal.bgu.ru/pub.aspx?id=23254> (accessed on 31.01.2020). (In Russ.).
2. Khabibullin T. R. Audit of efficiency in the system of public financial control. *Molodoi uchenyi = Young Scientist*. 2016;(11):1367–1371. (In Russ.).
3. Saunin A. N. Audit of the effectiveness of using public funds. Moscow: MSU Publ.; 2015. 336 p. (In Russ.).



4. Sutopo B., Wulandari T.R., Adiati A.K., Saputra D.A. E-government, audit opinion, and performance of local government administration in Indonesia. *Australasian Accounting, Business and Finance Journal*. 2017;11(4):6–22. DOI: 10.14453/aabfj.v11i4.2
5. Golikova T.A. The transition from financial audit to public audit is a qualitatively new stage in the development of public financial control in Russia. *Vestnik AKSOR*. 2014;(4):4–6. (In Russ.).
6. Tereshchenko D.S. Performance audit as a special form of public audit. *Publichno-pravovye issledovaniya*. 2017;(3):34–63. (In Russ.).
7. Karepina O.I. Development of the audit of public spending efficiency. *Mezhdunarodnyi bukhgalterskii uchet = International Accounting*. 2014;(30):42–51. (In Russ.).
8. Golikova T.A. The main directions of improving financial control. *Vestnik AKSOR*. 2013;(4):5–7. (In Russ.).
9. Kells S. The seven deadly sins of performance auditing: Implications for monitoring public audit institutions. *Australian Accounting Review*. 2011;21(4):383–396. DOI: 10.1111/j.1835–2561.2011.00150.x
10. Palmer L. An analysis of reports from the office of the Auditor General of Canada: How audit guidelines shape the documents that inform government and citizens. *Canadian Journal for Studies in Discourse and Writing/Rédactologie*. 2008;22(1):52–71. DOI: 10.31468/cjsdwr.550
11. Mayne J. Performance auditing: cozy, comfortable and in need of challenge. *Optimum Online*. 2010;40(3). URL [https://www.academia.edu/6468855/Performance\\_Auditing\\_Cozy\\_Comfortable\\_and\\_in\\_Need\\_of\\_Challenge](https://www.academia.edu/6468855/Performance_Auditing_Cozy_Comfortable_and_in_Need_of_Challenge) (accessed on 31.03.2020).
12. Johnsen Å., Meklin P., Oulasvirta L., Vakkuri J. Performance auditing in local government: An exploratory study of perceived efficiency of municipal value for money auditing in Finland and Norway. *European Accounting Review*. 2010;10(3):583–599. DOI: 10.1080/09638180126803
13. Johnsen Å., Reichborn-Kjennerud K., Carrington T., Klarskov Jeppesen K., Taro K., Vakkuri J. Supreme audit institutions in a high-impact context: A comparative analysis of performance audit in four Nordic countries. *Financial Accountability & Management in Governments, Public Services and Charities*. 2019;35(2):158–181. DOI: 10.1111/faam.12188
14. Pollitt C. Performance audit in Western Europe: Trends and choices. *Critical Perspectives on Accounting*. 2003;14(1–2):157–170. DOI: 10.1006/cpac.2002.0521
15. Jokipii A., Di Meo F. Internal audit function characteristics and external auditors' co-sourcing in different institutional contexts. *International Journal of Auditing*. 2019;23(2):292–307. DOI: 10.1111/ijau.12162
16. Lukashov A.I. Development of internal public financial control in the general government sector. *Vestnik Finansovogo universiteta = Bulletin of the Financial University*. 2014;(2):24–29. (In Russ.).
17. Goreglyad V. Modernization of the financial control system. *Gosudarstvennaya sluzhba = Public Administration*. 2015;(1):50–55. (In Russ.).
18. Semenenko A.M. Audit of the effectiveness of the use of budget funds of a constituent entity of the Russian Federation (on the example of the Belgorod region). *Molodoi uchenyi = Young Scientist*. 2019;(2):265–269. URL: <https://moluch.ru/archive/240/55514/> (accessed on 31.01.2020). (In Russ.).
19. Pavlyukova A.O., Lozitskaya O.I. Performance audit of budget spending: Features and problems. In: Economic science today: Theory and practice. Proc. 9<sup>th</sup> Int. sci.-pract. conf. (Cheboksary, 23 Feb., 2018). Cheboksary: Interaktiv plus; 2018:134–138. (In Russ.). DOI: 10.21661/r-469556
20. Bagratuni K. Yu. Emphasis on improving state financial control in implementing state programs. *Ekonomika i predprinimatel'stvo = Journal of Economy and Entrepreneurship*. 2016;12–4:90–92. (In Russ.).

## ABOUT THE AUTHORS



**Ol'ga I. Lozitskaya** — Cand. Sci. (Econ.), Senior Lecturer, Department of Public Finance, Financial University, Moscow, Russia  
olozitskaya@gmail.com



**Natal'ya L. Voronina** — Master's student, Public Sector Finance, Financial University, Moscow, Russia  
n.voronina.00@bk.ru

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