

ҚАЗАҚСТАН РЕСПУБЛИКАСЫ ҒЫЛЫМ ЖӘНЕ ЖОҒАРЫ БІЛІМ МИНИСТРАЛІГІ
МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ РЕСПУБЛИКИ КАЗАХСТАН
MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE REPUBLIC OF KAZAKHSTAN

А.Н. ГУМИЛЕВ АТЫНДАҒЫ ЕУАЗИЯ ҰАТТЫҚ УНИВЕРСИТЕТІ
ЕВРАЗИЙСКИЙ НАЦИОНАЛЬНЫЙ УНИВЕРСИТЕТ ИМЕНИ А.Н. ГУМИЛЕВА
L.N. GUMILYOV EURASIAN NATIONAL UNIVERSITY



«ҰАТТЫҚ ВАЛЮТАНЫҢ ТҰРАҚТЫЛЫҒЫ МЕМЛЕКЕТТІҢ
ҚАРЖЫЛЫҚ КАУІПСІЗДІГІН ҚАМТАМАСЫЗ ЕТУ ФАКТОРЫ РЕТІНДЕ»
Қазақстан Республикасының ұлттық валютасының 30 жылдығына арналған
халықаралық ғылыми-тәжірибелік конференциясының
МАТЕРИАЛДАР ЖИНАҒЫ

СБОРНИК МАТЕРИАЛОВ

Международной научно-практической конференции,
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«СТАБИЛЬНОСТЬ НАЦИОНАЛЬНОЙ ВАЛЮТЫ КАК ФАКТОР
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«STABILITY OF THE NATIONAL CURRENCY AS A FACTOR OF ENSURING
FINANCIAL SECURITY OF THE STATE»

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Халықаралық ғылыми-тәжірибелік конференцияның еңбектер жинағында мемлекеттің қаржылық қауіпсіздігін қамтамасыз ету және Қазақстан Республикасы ұлттық валютасының тұрақтылық факторлары қарастырылған.

В сборнике трудов международной научно-практической конференции рассмотрены факторы обеспечения финансовой безопасности государства и стабильности национальной валюты Республики Казахстан.

In the collection of works of the international scientific and practical conference, factors of ensuring the financial security of the state and the stability of the national currency of the Republic of Kazakhstan are considered.

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FEATURES OF THE AUDIT OF THE EFFECTIVENESS OF NATIONAL RESOURCES

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Аннотация. Особенность и значимость национальных ресурсов в экономике заключаются в их разнообразии и уникальности, а также в роли, которую они играют в обеспечении экономического роста и развития страны. Однако для достижения полной эффективности необходимо не только наличие ресурсов, но и их эффективное использование, развитие инноваций и использование новых технологий. Национальные ресурсы также могут стать источником проблем и конфликтов. Их нерациональное использование, неэффективная эксплуатация или несправедливое распределение доходов от ресурсов могут привести к нарушению сбалансированного развития страны, коррупции и социальным конфликтам.

Понятие эффективность использования ресурсов многогранно, что в свою очередь определяет и вариантность в ее оценке. В зависимости от целей проверки, определяют экономичность, продуктивность и результативность использования ресурсов. Под экономичностью понимают достижение наилучшего результата в условиях ограниченности ресурсов. В настоящее время существует необходимость теоретического осмысления аудита эффективности национальных ресурсов, критериев эффективности, в частности для использования их в практической деятельности.

Статья подготовлена по грантовому финансированию по научным и/или научно-техническим программам на 2023-2025 годы МНВО РК BR21882352 «Разработка новой парадигмы и концепции развития государственного аудита, рекомендаций по улучшению системы оценки качества и управления и эффективного использования национальных ресурсов».

Ключевые слова. Аудит эффективности, национальные ресурсы, финансовые ресурсы, бюджетные средства, устойчивое развитие государства, сбалансированное развитие страны, коррупция, природные ресурсы

Annotation. The peculiarity and importance of national resources in the economy lies in their diversity and uniqueness, as well as in the role they play in ensuring the economic growth and development of the country. However, to achieve full efficiency, it is necessary not only the availability of resources, but also their effective use, the development of innovations and the use of new technologies. National resources can also become a source of problems and conflicts. Their irrational use, inefficient exploitation or unfair distribution of income from resources can lead to disruption of the balanced development of the country, corruption and social conflicts.

The concept of resource efficiency is multifaceted, which in turn determines the variability in its assessment. Depending on the objectives of the audit, they determine the efficiency, productivity and effectiveness of the use of resources. Economy is understood as achieving the best result in conditions of limited resources. Currently, there is a need for a theoretical understanding of the audit of the effectiveness of national resources, performance criteria, in particular for their use in practice.

Аңдатпа. Экономикадағы ұлттық ресурстардың ерекшелігі мен маңыздылығы олардың әртүрлілігі мен бірегейлігінде, сондай-ақ елдің экономикалық өсуі мен дамуын қамтамасыз етудегі рөлінде жатыр. Алайда, толық тиімділікке қол жеткізу үшін ресурстардың болуы

ғана емес, оларды тиімді пайдалану, инновацияларды дамыту және жаңа технологияларды қолдану қажет. Ұлттық ресурстар проблемалар мен қақтығыстардың көзі болуы мүмкін. Оларды ұтымсыз, тиімсіз пайдалану немесе ресурстардан түсетін кірістерді әділетсіз бөлу елдің теңгерімді дамуының бұзылуына, сыбайлас жемқорлық пен әлеуметтік қақтығыстарға әкелуі мүмкін.

Ресурстарды пайдалану тиімділігі ұғымы көп қырлы, бұл өз кезегінде оны бағалаудағы нұсқаны анықтайды. Бақылау мақсаттарына байланысты ресурстарды пайдаланудың тиімділігі, өнімділігі және тиімділігі анықталады. Үнемділік деп ресурстардың шектеулі жағдайында ең жақсы нәтижеге қол жеткізу деп түсіндіреді. Қазіргі уақытта ұлттық ресурстардың тиімділік аудитін, тиімділік критерийлерін, атап айтқанда оларды практикалық қызметте пайдалану үшін теориялық тұрғыдан түсіну қажет.

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Proper management and utilization of national resources is indispensable for the sustainable development of a nation. Governments must establish strategies and policies for the conservation and efficient use of these resources to ensure the well-being of the people and future generations in the context of rapid economic growth and increasing resource consumption, the issue of conservation and the duration of their use becomes particularly relevant. This requires the development and implementation of innovative technologies, reducing the environmental impact of natural resource use and creating a sustainable balance between economic, social and environmental interests.

Therefore, it is important to realize the importance of national resources and treat them responsibly. The state should create the right conditions for their use, respecting the principles of sustainable development, economic efficiency and social justice. This will allow the country to maximize its potential and ensure the well-being of its people. However, national resources can also become a source of problems and conflicts. Their irrational use, inefficient exploitation or inequitable distribution of resource revenues can lead to imbalanced development of the country, corruption and social conflicts.

National resources are tangible and intangible goods that are located on the territory of a certain country and are used for its economic development and meeting the needs of the population. Depending on the nature of these resources, they can be classified in the following categories

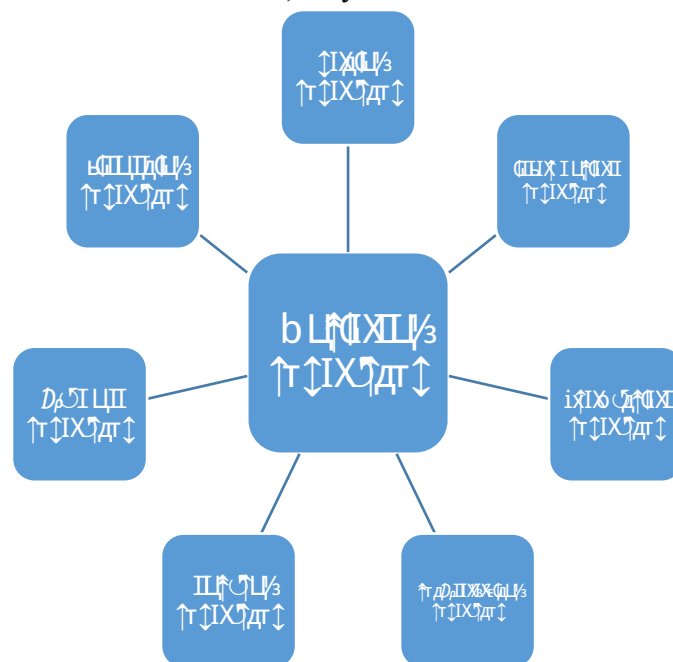


Figure 1 – Classification of national resources. Note - Summarized by the author

Natural resources: these are resources that are derived from nature and include mineral resources (oil, gas, coal, ores), forests, water resources (rivers, lakes) and agricultural land.

Human capital: it is the accumulated knowledge, skills and experience of a country's labor force. It includes education, training, health and labor skills of the population. Financial resources: these are monetary resources that can be used to finance various projects and programs. They include public reserves, investments, national budget and private capital.

Technological resources: these are knowledge, know-how and technologies that are used in production and economic development. They include patents, inventions, innovation and information technology.

Social resources: these are the institutions, social network and cultural values that form the basis of social development and welfare. They include education system, health care, legal system and cultural patrimony.

Information resources are knowledge, identities and instructions for their realization, recorded in any form, on any medium.

Production resources are the capabilities that a society possesses to create goods and services (material, natural, labor, financial, informational, etc.) [1].

All these types of national resources are interrelated and affect the economic development and welfare of a country. Each country must manage its national resources effectively to ensure sustainable development and the achievement of its goals. By having sufficient quantity and diversity of national resources, a nation can provide itself with essential products and also withstand competition in the world market. This allows a country to have a reliable source of income, strengthen its economic independence and develop on the basis of its own resources. Scientific, technological, natural and human resources play a key role in ensuring the security of the state. Scientific and technological resources enable a country to develop new technologies and innovations, which contributes to competitiveness and security. Natural resources such as energy, water, land and mineral resources are fundamental for sustainable development and self-sufficiency of the country. Human resources, including education, health and skills of the population, play an important role in the security and development of the state.

Countries with diverse and abundant national resources have an advantage in ensuring their security. Having sufficient resources ensures economic resilience and enables a country to cope with external challenges, such as changes in world markets, energy crises and environmental threats. At the same time, countries without sufficient access to resources become vulnerable and dependent on external supplies, which can threaten their security and independence.

However, national resources can also become a source of problems and conflicts. Their irrational use, inefficient exploitation or inequitable distribution of resource revenues can lead to imbalanced development of the country, corruption and social conflicts.

Before talking about performance audit as a type of public audit and control, it is necessary to consider the concept of "efficiency". Currently, there are many approaches to the definition of this concept, including definitions given by Ricardo D., Tomson A., Drucker P. F., Mescon M. H., Sukharev O. and others. (table 1).

Table 1 -Approaches to the definition of the concept of "efficiency"

The authors of the definition	Content of the concept
Ricardo D	Efficiency is the ratio of a result to a certain type of cost
Nureev R. M.	Efficiency is the ratio of the result to the means of achieving it

Tomson A.	Efficiency - the ratio of the quantity of sources for production to the quality of products produced by their use
Drucker P. F., Sayfulin R. S., Ustenko O. L., Sheremet	Efficiency is not only the connection of the result with the intended goals, but also the obtaining of the effect in terms of the optimal use of resources
A.D. Meskon M. H., Albert M., Hedouri F.	Efficiency - the market value of output divided by the total cost of the organization's resources
Sukharev O.	A system can be efficient when one or more elements are inefficient (their inefficiency is compensated by the profitability of other elements)
Note – Compiled from source [2, 3]	

At the same time, the definition of this concept in relation to public administration is of particular interest, because, first, it determines the essence of public administration, based on its functions, and second, based on the methodology of management, justifies or denies certain forms of it. To analyze the mechanistic, socio-psychological, cybernetic (synergetic) approaches to determining the effectiveness of public administration. Let us consider the main features of these approaches and their main representatives in Table 2.

Table 2- Approaches to determining the effectiveness of public administration

Approach	Representatives of the direction	Content of the approach
Mechanical	Taylor F., Veber M., Wilson B.	Efficiency is manifested in the achievement of formal goals within specific timeframes when there is only one method and mode of execution that is better and faster than all others; in the presence of a bureaucratic management organization as the most effective one
Socio-psychological	Meyo E., Bernard Ch., Follet M.	Efficiency is a complex multidimensional phenomenon whose evaluation criteria include personnel policy, personnel motivation, and interpersonal relations within the organization
Cybernetic (synergetic)	Haken G., S.P.Kurdyumov, E.N. Knyazeva	Efficiency is manifested in the openness of the organization, active interaction with the external environment, feedback system modeling, non-linearity of the structure
Note - Summarized by the author		

The concept of resource utilization efficiency is multifaceted, which in turn determines the variability in its assessment. Depending on the objectives of the audit, as noted above, determine the economy, productivity and efficiency of resource utilization. Cost-effectiveness is understood as the achievement of the best result in conditions of limited resources.

Head of State K. Tokayev in the Address to the people of Kazakhstan from March 16, 2022 "New Kazakhstan: the path of renewal and modernization. Noted the paragraph on the need to strengthen parliamentary control over the quality of execution of the national budget, improving the methodology of the state audit of efficiency [3]. In general, performance audit is a set of techniques and methods of checking, evaluating and analyzing the economy, productivity and

performance of activities to achieve the goals within a certain timeframe and with a given quality. At present, there is no general concept in economic science, revealing theoretical and methodological foundations of the efficiency audit of the use of state budget funds, and its development is only at the initial stage. This is due, in our opinion, to the fact that the audit of the effectiveness of the use of budgetary funds is a new concept in the theory and practice of public financial control. Consequently, both time and sufficient practical experience are needed to implement the efficiency audit. The main objective of the efficiency audit will be to qualitatively improve the process of public financial resources management by providing the public administration system with reliable, complete and objective information on the issue of efficiency of the use of funds involved in the budget process.

Decree of the President of the Republic of Kazakhstan dated September 10, 2022 № 1005 "On approval of the Concept of public finance management of the Republic of Kazakhstan until 2030". Noted in the paragraphs: the basic principles and approaches to the formation of public finance management policy, the policy of formation and use of the National Fund of the Republic of Kazakhstan, improving the efficiency and economic returns of budget expenditures, a new system of budget planning based on the principles of frugality and responsibility; ensuring accountability and accountability of budget expenditures, the effectiveness of state property management.

Thus, today one of the most urgent topics in the sphere of public finance is the reforming of the budget process, which implies effective and rational use of budgetary funds and financial resources not only in the development of strategic state programs, but primarily in their implementation by the participants of the budget process. Organization of rational and efficient spending of budgetary resources is necessary in any modern society, because it significantly affects the achievement of optimal parameters of economic functioning and the solution of priority tasks facing the state. Theoretically, any society seeks to use its national resources as efficiently as possible. Consequently, the need to assess the effectiveness and efficiency of budget spending is dictated by the requirements of society. The question arises: what is efficiency? This concept is not approved at the legislative level. Taking into account the opinion of experts in the field of public finance, as well as we can conclude that the effectiveness of budget spending should be understood as the achievement of the set goals and objectives within the framework of the implementation of public programs by the ratio of the result obtained and the costs incurred. Accordingly, the efficiency criteria characterize the amount of made expenditures on the services (works performed) provided by the state.

Currently, there is a need for theoretical understanding of efficiency criteria, in particular for their use in practice. This issue is complex, insufficiently covered in the economic literature and methodologically elaborated. For the qualitative implementation of the audit of the effectiveness of the use of budgetary funds requires a more detailed development of performance evaluation indicators, which the author considers on the example of state programs.

As can be seen, the state audit and financial control changes from the traditional check of correctness, targeting, expediency and legality of the distribution of public financial resources to control from the position of effective, efficient and economical use of public resources in the form of performance audit..

Efficiency audit is an objective and systematic assessment of both the process of public finance management and the use of budgetary funds itself. It determines the economy, efficiency and external effect of budget funds allocation for certain purposes. Efficiency audit is considered to be the most labor-intensive form of control and expert-analytical activities and may take up to 18 months. This is due to the known complexity of the process of its organization and conduct.

Thus, on the basis of the most popular existing evaluation techniques, we present a number of general universal criteria for assessing the efficiency of planning and execution of certain types of expenditures, on the basis of which it is possible to compile calculation formulas with approved indicators for the established criteria (Table 3).

Table 3 - Criteria and formulas for calculating the efficiency assessment of planning and execution of certain types of budget expenditures

Criteria	Formula	Symbols
Completeness of justification of expenditures to achieve the specified results, including objectivity and reliability of indicators	$K_{\text{ПОР}} = \frac{\sum P_0}{\sum P_{\text{ДО}}}$	$K_{\text{ПОР}}$ – the coefficient of completeness of cost justification; $\sum P_0$ – amount of expenses for which justifications are provided; $\sum P_{\text{ДО}}$ – the amount of expenses for which justification must be provided;
Timeliness and completeness of budget allocation distribution	$K_{\text{БА}} = \frac{\sum \text{БА}_{\text{Д}}}{\sum \text{БА}_{\text{ПЛ}}}$	$K_{\text{БА}}$ – budgetary allocation ratio $\sum \text{БА}_{\text{Д}}$ – the amount of budgetary allocations $\text{БА}_{\text{ПЛ}}$ – the amount of budget allocations provided for by the federal law on the federal budget
Completeness of justification of the reasons for unutilized budget balances, if any	$K_{\text{ПОО}} = \frac{\sum \text{НО}_0}{\sum \text{НО}_{\text{ДО}}}$	$K_{\text{ПОО}}$ – the ratio of completeness of justification of unutilized balances $\sum \text{НО}_0$ – amount of unused balances $\sum \text{НО}_{\text{ДО}}$ – the amount of unutilized balances for which justification must be provided
Compliance with the requirements for openness and transparency of information on the type of expenditure	$K_{\text{СТ}} = \frac{\sum P_{\text{СТ}}}{\sum P_{\text{ДСТ}}}$	$K_{\text{СТ}}$ – compliance rate $\sum P_{\text{СТ}}$ – amount of expenditures presented in accordance with the requirements of openness and transparency $\sum P_{\text{ДСТ}}$ – the amount of expenditures to be submitted as required
Presence of budgetary irregularities detected during preliminary, subsequent and operational financial control	$K_{\text{БН}} = \frac{\sum H_1}{\sum H_0}$	$K_{\text{БН}}$ – budget violation rate $\sum H_1$ – amount of detected violations in the reporting year $\sum H_0$ – the amount of identified violations for the year preceding the reporting year
Note - Summarized by the author according to the source [4, 5].		

In this regard, today it is possible to achieve the effective use of financial resources only by linking the interests of budget recipients and the manager of budgetary funds, which, in our opinion, is not quite right. Of course, mutual interest of budget recipients and their main managers (administrators) in achieving the goals should be, but it is not enough to ensure the effectiveness of public finances, the effective use of national resources is a much broader concept. External control should be focused on the quality of fulfillment of budget assignments, functional responsibilities, targeted use of funds, assessment of budget expenditures efficiency, audit of contracts and other things.

A performance audit conducted by SAI is an independent, objective, and credible examination of whether State businesses, systems, operations, programs, activities, or organizations are operating in accordance with the principles of economy, efficiency, and effectiveness and whether there is room for improvement.

In general, Performance Audits cover the full range of government activities, including organizational, financial and administrative systems (INTOSAI-P-1, Section 4). A performance audit may focus on a single program, policy, organization, or fund, or it may focus on results or systems, looking at programs, policies, and organizations that contribute to an outcome or system. The primary purpose of a performance audit is to constructively promote economical, efficient, and effective management and to promote accountability and transparency. A performance audit

seeks to provide new information, analysis or insights and, where appropriate, recommendations for improvement (ISSAI 300/12, ISSAI 3000/18). By providing new analytical findings, making information more accessible to stakeholders, providing an independent and authoritative viewpoint or conclusion based on audit evidence, and providing recommendations based on the analysis of audit results, performance audits provide new information, knowledge, and value (ISSAI 300/ 10)

Economy, efficiency and effectiveness are central elements of a performance audit. They are also a good way to distinguish a performance audit from a compliance audit. These principles are defined in ISSAI 300/11 and their meaning is clarified in GUID 3910/35-48. The process itself is summarized in Figure 6.

Economy is the minimization of the cost of resources used in performing an activity. The resources used should be available in a timely manner, in the right quantity and quality, and at the best price. Efficiency is to maximize the use of available resources. It is concerned with the relationship between the resources used (inputs) and the results obtained in terms of quantity, quality and time. Efficiency evaluates the relationship between inputs and outputs.

Efficiency audits focus on areas where it can benefit citizens and which have the greatest potential for improvement, and provide constructive recommendations for audited organizations to take appropriate actions to improve efficiency (ISSAI 300/12) [6].

Figure 2 – Performance audit process



Note - Summarized by the author

An important point when conducting an efficiency audit is that even at the stage of preparation, any state program is subject to mandatory public discussion and preliminary discussion at meetings of public councils of responsible executors. At the same time, the opinion of the public is also important because, as a rule, often the so-called institutional factors of the effectiveness of state programs and projects are practically forgotten behind the attempt to achieve the best financial indicators. The effectiveness of state projects and programs, especially those developed and implemented with budgetary funds, at the taxpayer's expense, is the most important object of attention of state and public control. This is regulated by legal documents that require detailed consideration of the effectiveness of government projects and programs. Thus, an efficiency audit and a competent assessment of the socio-economic efficiency of public spending is certainly necessary and very important.

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ВОЗМОЖНОСТИ ИСПОЛЬЗОВАНИЯ ИСКУССТВЕННОГО ИНТЕЛЛЕКТА ДЛЯ РАЗВИТИЯ РЫНКА ЗЕЛЕННЫХ БУМАГ В КАЗАХСТАНЕ

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Аннотация. В работе рассматриваются сущность зеленых бумаг, рост спроса на зеленые облигации в аспекте финансирования устойчивых проектов. Рассмотрены моменты развития зеленых бумаг в Казахстане. Акцентирован зарубежный опыт в области применения искусственного интеллекта для прогнозирования рынка зеленых бумаг. Изучена возможность применения искусственного интеллекта для прогнозирования рынка зеленых бумаг, а также тенденции развития нейронных сетей.

Ключевые слова: зеленые бумаги, искусственный интеллект, зеленые облигации, искусственный интеллект, нейронные сети

Аннотация.

Жұмыс жасыл облигациялардың мәнін, тұрақты жобаларды қаржыландыру тұрғысынан жасыл облигацияларға сұраныстың өсуін зерттейді. Қазақстандағы жасыл бағалы қағаздардың даму сәттері қарастырылды. «Жасыл» бағалы қағаздар нарығын болжау үшін жасанды интеллектті пайдалану саласындағы шетелдік тәжірибеге баса назар аударылады. Жасанды интеллектті жасыл бағалы қағаздар нарығын болжау үшін пайдалану мүмкіндігі, сондай-ақ нейрондық желілердің даму тенденциялары зерттелді.

Түйін сөздер: жасыл қағаздар, жасанды интеллект, жасыл байланыстар, жасанды интеллект, нейрондық желілер

Annotation.

The paper examines the essence of green bonds, the growth in demand for green bonds in terms of financing sustainable projects. The moments of development of green securities in Kazakhstan are considered. Foreign experience in the field of using artificial intelligence to forecast the green securities market is emphasized. The possibility of using artificial intelligence to forecast the green securities market, as well as the development trends of neural networks, has been studied.

Keywords: green paper, artificial intelligence, green bonds, artificial intelligence, neural networks

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