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NAS RK is pleased to announce that Bulletin of NAS RK scientific journal has been accepted for indexing in the Emerging Sources Citation Index, a new edition of Web of Science. Content in this index is under consideration by Clarivate Analytics to be accepted in the Science Citation Index Expanded, the Social Sciences Citation Index, and the Arts & Humanities Citation Index. The quality and depth of content Web of Science offers to researchers, authors, publishers, and institutions sets it apart from other research databases. The inclusion of Bulletin of NAS RK in the Emerging Sources Citation Index demonstrates our dedication to providing the most relevant and influential multidiscipline content to our community.

Қазақстан Республикасы Ұлттық ғылым академиясы "ҚР ҰҒА Хабаршысы" ғылыми журналының Web of Science-тің жаңаланған нұсқасы Emerging Sources Citation Index-те индекстелуге қабылданғанын хабарлайды. Бұл индекстелу барысында Clarivate Analytics компаниясы журналды одан әрі the Science Citation Index Expanded, the Social Sciences Citation Index және the Arts & Humanities Citation Index-ке қабылдау мәселесін қарастыруда. Web of Science зерттеушілер, авторлар, баспашылар мен мекемелерге контент тереңдігі мен сапасын ұсынады. ҚР ҰҒА Хабаршысының Emerging Sources Citation Index-ке енуі біздің қоғамдастық үшін ең өзекті және беделді мультидисциплинарлы контентке адалдығымызды білдіреді.

НАН РК сообщает, что научный журнал «Вестник НАН РК» был принят для индексирования в Emerging Sources Citation Index, обновленной версии Web of Science. Содержание в этом индексировании находится в стадии рассмотрения компанией Clarivate Analytics для дальнейшего принятия журнала в the Science Citation Index Expanded, the Social Sciences Citation Index и the Arts & Humanities Citation Index. Web of Science предлагает качество и глубину контента для исследователей, авторов, издателей и учреждений. Включение Вестника НАН РК в Emerging Sources Citation Index демонстрирует нашу приверженность к наиболее актуальному и влиятельному мультидисциплинарному контенту для нашего сообщества.

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IMPLEMENTATION OF INNOVATIONS AS THE BASIS FOR IMPROVING TAX AUDIT

Abstract. This scientific article analyzes research and identifies the main directions to the definition of innovation in the sphere of state tax audit and management. The research of CIS scientists in the field of innovations in the public sector is described and the directions of modernization of tax regulation according to the strategic documents of the Republic of Kazakhstan are given. The dependence of tax revenue collection on the level of innovation activity of Kazakhstan, OECD countries and neighboring countries is considered.

Key words: innovations, tax audit, tax burden, state program.

Introduction. In the context of innovative development of the economy, the use of information technologies, material and technical equipment of tax authorities and improvement of qualification of employees of the tax service are of particular importance.

A key factor in improving the efficiency of tax administration should be a high degree of information interaction between the taxpayer and the Executive. To date, such interaction should be carried out in electronic form using modern telecommunications. Improving the functioning of the tax system through the introduction of new information technologies, equipment with modern systems of technological processes and operational management tools will lead to the improvement of the system of accounting of taxpayers, providing operational control of the activities of all subjects of taxation, as well as to the creation of a unified information system of tax authorities, taking into account the security of information.

The analysis of scientific researches allowed to reveal the main directions to definition of innovations in the field of the state control and management. Consider the following approaches in the world scientific literature

Thus, according to V. Bekkers, P. Foley and X. Alfonso, in many countries in the period of transformation, efforts are being made to modernize the administration, focused on improving the efficiency of internal government operations, communication with citizens by providing information and public services available in electronic form [1, 2].

C.A. Rusaw notes in his writings that transformation in the public sector is a complex process characterized more by changes in the political and legislative sphere than by market shifts [3].

W.H. Dutton and R. Eynon argue that innovation plays a central role in modernizing and transforming government, requiring not only the introduction of information services, but also new types of relationships between public sector actors and citizens [4].

An analysis by Joseph Feller, Patrick Finnegan, and Olof Nilson identified four types of innovation for public administration transformation: aggregation, syndication, consumption, and partnership. Thus, it is noted that the studied innovations have an impact on the revenues of the regional budgets, namely by increasing revenues as a result of joint branding of the region and the expansion of the small and medium-sized business sector [5].

F. Damanpour and M. Schneider assume that innovation can improve the quality of public services, as well as the ability of government organizations to address social problems through the creation of a well-

functioning management system. Such reforms are accompanied by the introduction and development of new public administration, e-government, and recently discussions about the transition from government to "Big society" [6].

According to J.Potts, the public sector should be guided by the economic principles of efficiency: minimize costs and maximize budget revenues. The use of innovation in the public sector contributes to the efficiency of the state like market actors. The author identifies five reasons for the need for innovation: economic growth, inefficient management structure, lack of competition in the public sector, the emergence of dysfunctional state regulators in relation to the private innovation sector, changing forms of public-private partnership [7].

PDunleavy emphasizes that the emergence of new technologies is accompanied by the entry into the new digital era of governance (DEG). DEG is characterized by the reorganization of public relations, the priority of which is the interests of citizens. The changes of the digital age inevitably affect the governments of States. The emergence of social networks, cloud technologies, application development promote advanced industrial societies in the direction of online civilization [8].

According to Ch. Pollitt, the public sector can be improved by importing business concepts and methods, focusing on the effectiveness of results, the replacement of hierarchical relationships with contractual ones and the widespread introduction of market-type mechanisms[9].

Jerry Fishenden, Mark Thompson identify three areas of innovation in the public sector: reintegration, holism and digitization of data. Reintegration, contrary to the concept of integrated management, includes outsourcing and simplified service chains. The second direction, holism, is the reorganization of services for citizens, and includes a "single" system of services supported by data storage, simplification and integration of processes, as well as audit by citizens and evaluation of services based on social networks. Third, digitization, involves a strategy of "100% online channels" in which the services are automatic processes by default, open data, public "cloud web services", the government is an open book (the maximum possible openness in providing information about the formation of the income and expenditure of the state), the sharing of services [10].

Consider the research of CIS scientists in the field of innovation in the public sector. Thus, V.F.Islamutdinov notes that management innovations should be implemented in a comprehensive manner: both in the management structure, and in technical, personnel, information support, and in other areas for the effective achievement of strategic goals [11].

According to Lobanov V. V., in the world practice there is a certain algorithm of modernization of the system of public administration in post-socialist countries, when at the first stage the main attention is paid to legal acts and legislation. Then they move on to the creation of stable functioning institutions and organizations in the system of public administration. And then they are actively working on improving the efficiency of the entire system based on the analysis of current problems and the developed "ideal" model of public service.

In the work of Ponomarev A. I., modernization model of efficiency in the administration of tax policy is implemented in the following areas: organizational and methodological improvement of the activities of the tax authorities, simplifying the process of paying taxes, the gradual replacement of paper documents, streamlining of mutual relations of tax authorities with taxpayers, creation of a more comprehensive and transparent tax management system [12, 13].

M. V. Mishustinotes that the use of modern information technologies contributes to the transition of the tax service to a qualitatively new level of tax administration. The key effects are greater stress resistance to economic shocks, and therefore the preservation of stable budget revenues at all levels, as well as increased transparency through remote interaction between taxpayers and tax authorities.

In the studies by Y. A. Petrov, it appears that the modernization of tax administration is possible only through the implementation of a fundamentally new – innovative – approach to reform of the tax system. Its essence is that any taxes are considered as social institutions, the establishment and change of which are respectively fundamental and improving innovations, accompanied by external effects (positive and negative) and causing the effect of counter-innovation on the part of taxpayers [14, 15].

Klimova N. V. emphasizes that the innovative vector in the improvement of tax administration should simultaneously provide a stable dynamic of innovative processes, economic growth, increasing the competitiveness of business and welfare of the population[16].

Methods. General scientific and special methods such as: method of system analysis; method of content analysis; method of comparative analysis; method of analysis and synthesis; method of system approach are used.

Results. Within the framework of the study the directions of modernization of tax regulation in accordance with the strategic documents of the Republic of Kazakhstan are considered.

One of the points of the state program of industrial and innovative development of the Republic of Kazakhstan for 2015-2019 is to improve the administration of tax legislation on the principle of "one window", which is aimed at stimulating investment and innovation activity of business according to OECD standards.

The state program "100 steps for 5 institutional reforms" identifies the following objectives of modernization of tax policy: optimization of tax policy and procedures, integration of customs and tax systems, introduction of universal tax declaration of income and expenses, creation of a network of centers for receiving and processing tax returns, risk management system.

The state program "Digital Kazakhstan" provides for the following key projects in the framework of modernization of tax administration: introduction of the principle of Paper-Free (reduction of paper turnover), development of open platforms (Open API), Big Data and artificial intelligence; improvement of tax administration and transition to electronic Declaration.

In the address of the President of the Republic of Kazakhstan Nursultan Nazarbayev to the people of Kazakhstan on January 31, 2017, the key task is to bring the fiscal policy to the new economic realities. Among the priority areas of improvement of tax policy are the following: stimulation of business exit from the "shadow" and expansion of the tax base in the non-commodity sector, optimization of existing tax benefits, improvement of tax administration mechanisms.

Some researchers believe that, the innovative economy provides the world economic superiority of the country for most developed countries in the modern world [17, 18].

Consider the dependence of tax revenue collection on the level of innovation activity of Kazakhstan, OECD countries and neighboring countries. According to the global innovation index 2018, the leading countries in terms of innovation activity are Switzerland, Sweden and the Netherlands. Kazakhstan ranks 74th in this rating [19].

Data on the level of tax burden of the studied countries are selected according to the world Bank. Summary data for the analysis are presented in table 1.

Construct correlation based on effective field variable Y (the level of tax burden, %) of X to argue (global innovation index). We determine the median values of X and Y, which will indicate the quadrants of the correlation field, characterizing the nature of functional dependence (figure).

The first quadrant is represented by the developed countries of Western Europe: the Netherlands, Sweden, Great Britain, Finland, Denmark, Ireland, Luxembourg, France, Norway, Austria, Iceland, as well as the advanced OECD countries: Israel, Australia, New Zealand and Estonia. In this section of the correlation field there is a direct relationship: the higher the level of innovation, the higher the tax burden. This fact is explained by the high state participation in the creation of conditions for innovative activity in order to expand the tax base. The state accumulates tax revenues, directing them subsequently to the creation of innovative industries, thereby increasing the level of national gross product. Consequently, the innovative activity of these countries is supported by the state tax administration, redistributing high tax revenues to support high-tech business initiatives.

The second quadrant is represented by countries with advanced innovation economies: Switzerland, USA, Germany, Singapore, South Korea, Japan, Canada, China and Hong Kong. In this sector, the inverse relationship is revealed: a high level of innovation with a low tax burden. The state, by lowering tax rates, increases the net profit of companies, thereby stimulating innovation activity in a highly competitive market. The distinctive feature of these systems is the decentralized structure of innovation regulation. The state creates favorable conditions for economic activity, and business, in turn, generates advanced innovative projects. China experience in tax incentives for innovative development is noteworthy. The state provides tax incentives for companies that use their own financing to invest in innovative technologies, and offers preferential tax status for high-tech mini - and micro-enterprises.

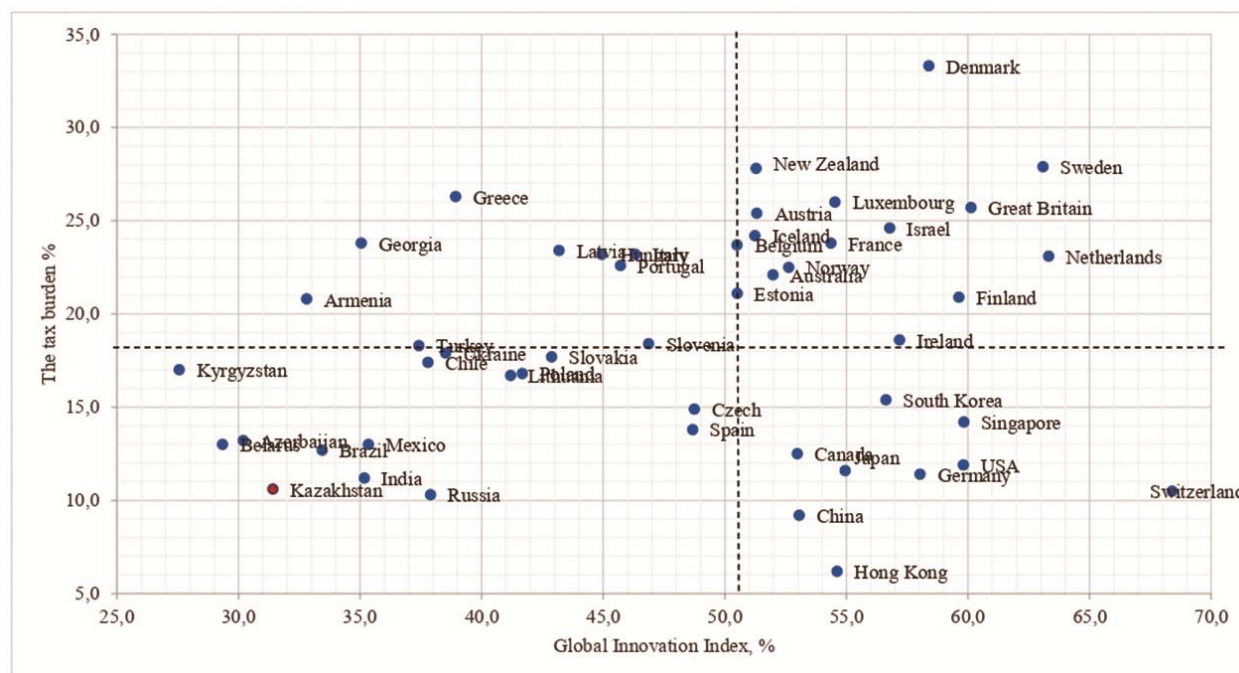
The third block includes emerging market countries: Czech Republic, Slovakia, Lithuania, Ukraine, Poland, Chile, Russia, Mexico, India, Brazil, Kazakhstan, Belarus, Azerbaijan and Kyrgyzstan, as well as

advanced economies: Spain and Turkey. This quadrant is characterized by direct dependence: low level of innovation and, therefore, low level of tax burden. The market capacity of these economies does not allow to develop innovations at a forced pace, thereby expanding the tax base. High dependence on natural resources and weak support for innovation activities lead to low levels of tax collection. According to the report on the Global innovation index, these countries will achieve a significant tax effect with the active support of innovation or the creation of a competitive business environment. It should be noted that Kazakhstan and other EAEU member States are represented in this group. This indicates a common economic and innovative development within the integration processes of the union.

The fourth quadrant is represented by the countries of Eastern Europe (Slovenia, Hungary), as well as part of the OECD countries (Belgium, Greece, Latvia, Portugal), and the near abroad (Georgia, Armenia). This block is characterized by a high level of tax burden with insufficient development of innovations. The government with a sufficiently high level of tax revenues does not contribute to the financing and implementation of innovative projects. Strengthening the policy of support for high-tech and knowledge-intensive industries will ensure a transition to a higher quality level in the likeness of the first group of countries.

Table 1 – Indicators of the global innovation and tax burden index by country for 2018

№	Country	Global innovation index	Taxburden, %	№	Country	Global innovation index	Taxburden, %
1	Australia	52,0	22,1	26	Lithuania	41,2	16,7
2	Austria	51,3	25,4	27	Luxembourg	54,5	26,0
3	Azerbaijan	30,2	13,2	28	Mexico	35,3	13,0
4	Armenia	32,8	20,8	29	Netherlands	63,3	23,1
5	Belarus	29,4	13,0	30	N. Zealand	51,3	27,8
6	Belgium	50,5	23,7	31	Norway	52,6	22,5
7	Brazil	33,4	12,7	32	Poland	41,7	16,8
8	Britain	60,1	25,7	33	Portugal	45,7	22,6
9	Hungary	44,9	23,2	34	Russia	37,9	10,3
10	Germany	58,0	11,4	35	Singapore	59,8	14,2
11	HongKong	54,6	6,2	36	Slovakia	42,9	17,7
12	Greece	38,9	26,3	37	Slovenia	46,9	18,4
13	Georgia	35,1	23,8	38	USA	59,8	11,9
14	Denmark	58,4	33,3	39	Turkey	37,4	18,3
15	Israel	56,8	24,6	40	Ukraine	38,5	17,9
16	India	35,2	11,2	41	Finland	59,6	20,9
17	Ireland	57,2	18,6	42	France	54,4	23,8
18	Iceland	51,2	24,2	43	Czechia	48,8	14,9
19	Spain	48,7	13,8	44	Chile	37,8	17,4
20	Italy	46,3	23,2	45	Switzerland	68,4	10,5
21	Kazakhstan	31,4	10,6	46	Sweden	63,1	27,9
22	Canada	53,0	12,5	47	Estonia	50,5	21,1
23	China	53,1	9,2	48	South. Korea	56,6	15,4
24	Kyrgyzstan	27,6	17,0	49	Japan	55,0	11,6
25	Latvia	43,2	23,4	50	Median line	50,5	18,3



Correlation plot of interdependence of the tax burden on the level of innovation activity for 2018 by country

According to Nobel prize winner John Forbes Nash's game theory, no contestant can increase winnings by changing their strategy unless other contestants change their strategies. Applying this theory to the innovative development of the regions, it can be concluded that the tax potential of the Republic can be achieved only at a uniform rate of implementation of high technologies in each individual area [20].

Increasingly, new sources of information, such as social networks and other web-based communication platforms, provide public services with sources of innovative ideas and new tools to connect with citizens and engage in discussions on social issues. The use of extensive and diverse information contained in the society as a whole can offer opportunities for creating innovative tax audit potential, including through the provision of new knowledge, creativity and feedback.

The openness of tax audit results to external users of information is also associated with new ways of information management. There are many examples from foreign practice, when citizens are given the opportunity to regularly submit ideas or feedback to government agencies. Intensive use of technologies such as crowdsourcing, BIG DATA and OPEN DATA allows tax authorities to use extended information that will contribute to obtaining better results of tax audit. Within the framework of the strategic plan of the Ministry of Finance of the Republic of Kazakhstan it is planned to introduce the technology «BIG DATA» on the basis of which modern digital solutions in the field of tax administration will be applied. The relevant system will ensure the formation of the necessary data for the transition to the universal Declaration of income.

According to Deloitte research, at the present stage, the stable functioning of the tax system requires the creation of a transparent structure, which, based on the aggregation, confirmation and analysis of data, will allow to identify deviations and avoid possible risks [21].

In accordance with the OECD recommendations, a model of tax audit transformation in terms of innovative development is proposed. The key element of the proposed model is the transition from post-audit (post-audit) to pre-audit (pre-audit). In our opinion, on the basis of the above analysis, as the state tax audit system improves, two key indicators are achieved, namely the minimum level of the tax gap and the reduction of audit costs by increasing the taxpayer's liability.

In our opinion, the described structure corresponds to the Deep Learning approach, which is one of the advanced scientific approaches in modern science in the field of process modeling. The Deep Learning method consists in recognizing the error at each stage of the process and preventing it from moving to the

next stage. The system allows you to minimize the use of human labor by analyzing input and output data and building on their basis of an analytical model of development.

The main advantage of the proposed model is the ability to: link many factors and the result in the form of the probability of obtaining the desired result in various combinations of direct and indirect factors; track changes in the resulting indicator by changing the input data online; build forecasts for future periods; automate the decision-making process; monitor the overall state of the system.

It is important that the developed model meets the requirements of the actual idea of management by key performance indicators (KPI), widely covered in the professional literature. The possibilities of the proposed model allow us to implement a multivariate approach to the preparation of the appropriate tax policy necessary to make timely and effective decisions based on the development strategy of the tax system. The complexity of decision-making in the field of tax audit is reduced, the quality and speed of their adoption are increased.

Currently, the tax audit system is based on the verification of annual tax reports, a third of which are still filed in paper form. In this regard, the function of tax audit is reduced to the identification of committed actions that are contrary to tax legislation. The process of processing and analysis of tax information leads to the formation of a time lag, which is economically inefficient, according to the concept of the time value of money.

Based on the analysis, it was revealed that the post-audit phase is presented in the form of two levels: immature audit stage (immature post-audit) and mature audit stage (mature post-audit). In our opinion, the immature audit phase can be described by the following characteristics:

- Organoleptic assessment methods for audit purposes involve the control of actual compliance, requiring the direct presence of auditors. Such methods include examination, visual observation, object examination, questioning and testing. Despite the widespread use of these methods in the practice of tax audit, this approach requires high costs of resources and time, and is subject to corruption risks.

- Internal data sources are limited in use by other public authorities, thus making it difficult to collect and analyze data for audit purposes. New Zealand's experience has shown that an enhanced and improved way of sharing data (both public and private) significantly reduces tax audit costs through easy-to-use online servers.

The mature post-audit phase is defined by the following distinctive features:

- Automatic methods of tax reporting processing for audit purposes and selective selection based on the risk management system at the post-audit stage. These methods result in saving time, costs and more accurate reflection of tax reporting data. However, the relevant types of information processing and risk management system reveal, but do not prevent, the facts of non-fulfillment of the tax obligation by the taxpayer. In Singapore, for example, the No-Filing Service (NFS) is designed to eliminate the need to file personal tax returns for taxpayers. NFS was trialled in 2007 with 45,000 taxpayers and rose to 1.39 million in 2017. Taxpayers can view their "tax liability assessment Notice" on the web portal. Using reliable data to automate the tax filing process reduces the risk of non-compliance with tax laws and the need for contact between the taxpayer and the tax authority.

- A wide range of internal and external data sources is possible through the widespread use of BIG DATA and OPEN DATA technologies. Information with varying degrees of detail from partner public services provides a full range of input data during the audit. In the practice of the Russian Federation, the assessment of property taxes is made on the basis of information that is provided in an XML file by the property register, which contains descriptions of the properties and parameters of the tax base. Tax information, regardless of their location, can be obtained by taxpayers through a personal secure account on the web portal of the tax administration.

Thus, the post-audit stage is characterized by the presence of technological tools of the audit process. However, the audit is carried out in relation to the committed facts of improper planning, control and regulation, as well as non-fulfillment of tax obligations.

The transformation phase requires not only the transformation of technical equipment, but also the corresponding legislative registration of areas of improvement of tax audit. In parallel, it is necessary to develop audit using third-party tax-related information through a broader dialogue on acceptable audit formats and standards. An important requirement, in our opinion, is the high potential of tax auditors in the field of advanced analysis.

The stage of transformation, in our opinion, can be divided into two levels: the stage of development of external tools and the stage of development of internal tools. The first stage is characterized by the introduction of external tools that can adapt existing systems and make more fundamental changes, adapt outdated systems and make more fundamental changes related to the implementation of ready-made technological solutions. The transformation process also requires political and public support, given that it will include major tax administration reform programs, including privacy and data security issues. At the same time, the implementation of the digitization process for tax audit purposes at the state level contributes to the simplification and reuse of information.

External tools at the transformation stage include:

- Legislative support and support for reducing the cost of tax audit, which contribute to the legal consolidation of the principle of efficiency.

- Support from other government agencies is accompanied by a solution to the issue of duplication of functions and powers of state authorities.

- The development of a coordinated digital government and information sharing involves the creation of a partnership information platform linking different government structures. For example, Norway has developed the portal for electronic dialogue and exchange of information between government agencies, individuals and organizations. The main advantage of this system was the harmonization of deadlines, as well as the reduction in the number of electronic forms submitted from five in 2002 to one in 2017, respectively.

- Independence and transparency imply partial autonomy of the tax authorities in matters of control, as well as publication of the audit results. In Malaysian practice, the Internal Revenue Board became a semi-autonomous revenue management Agency in 1996 and adopted corporate governance standards. Although tax policy decisions remain under the jurisdiction and control of the Treasury Department, the IRBD and its Board of Directors have increased the level of autonomy to manage their finances and human resources. In January 2015, the IRBD switched to the principle of self-financing through Agency fee, which represents some share of the annual volume of direct taxes. The similar approach is used in the number of countries in Asia, Africa and South America. IRBD can respond more quickly to changes in the business environment; and more easily implement measures to improve business and efficiency.

- the introduction of the Institute of tax mediation will reduce the time and financial resources for the settlement of tax disputes, thereby speeding up the process of collecting additional tax revenues to the state budget.

- Changes in the legal framework make it possible to expand the rights of tax auditors to access information of third parties.

- Intensive development of investments in digital services implies obtaining more reliable audit results through the introduction of high-quality innovative software products.

Internal instruments of the transformational stage of tax audit include:

- Comprehensive database of legal and physical entities and the IDs of the taxpayers for use of third-party information when conducting the audit.

- Simplified the process of filing a tax return.

- Guarantee the correctness of the tax reporting.

- High technological and qualification requirements to participants of tax audit (external and internal recipients).

- Electronic system for filing tax returns

Summarizing the above, it should be noted that the transformation phase of tax audit requires the creation of a favorable environment, both technological and legislative. Thus, these external and internal instruments increase the level of trust in tax administrations on the part of taxpayers, thereby increasing the efficiency of the entire tax system.

The pre-audit phase represents the most advanced level of the tax system functioning, as it minimizes the time lag for detecting non-fulfillment of tax obligations, as well as prevents attempts to evade taxes. The preliminary audit stage is divided into two levels: the highest level and the advanced level.

The highest level of development of the preliminary audit is the formation of stable information flows of data from third parties, external and internal mechanisms for changing the structure of the tax administration system. These tools will allow the tax authorities to check taxable income directly at the time of their occurrence, pre-fill in tax returns and, subsequently, to abandon the use of this form of control.

The main mechanism of an effective system at this stage is the pre-filling of tax returns on the basis of advanced Analytics. A number of tax administrations in advanced countries have already moved to pre-fill in taxpayer declarations, which the taxpayer must then either agree to (by reasonable agreement) or provide additional information that may lead to an adjustment of accrued tax liabilities.

The effective functioning of the relevant system requires the introduction of taxpayer identification, the creation of its tax history, as well as information of financial institutions related to the reflection of operating flows.

For example, the tax practice in Australia could demonstrate a successful pre-audit system. The Australian taxation office (ATO) provides taxpayers with the opportunity to pre-fill in the tax base directly on individual tax returns, including data on wages, remuneration percentages and private health insurance received from employers, banks and insurance organizations. The information provided by this system improves the activity of ATO, thus facilitating the process of fulfillment of tax obligations. The extended database of transactions created in cooperation with taxpayers allows data Analytics and risk modeling. Advanced level of development of the preliminary audit is to:

- standardization of rules for the provision of tax services and their strict compliance, which is the establishment of uniform rules for the implementation of state tax audit, aimed at ensuring the quality of audits.

- mutually agreed and irrevocable approach of the tax reporting and information implies the limit on the accuracy and transparency of accrual of tax liabilities.

This approach is most important for the Republic of Kazakhstan, because, according to the report of the Accounts Committee «The execution of the state budget for 2017», the amount of VAT refund for previous years increased by 113.7 billion tenge compared to 2016.

Thus, effective transformation of tax audit in innovative development of economy provides achievement of two main indicators: minimization of tax gap at high level of responsibility of taxpayers that leads to increase of efficiency of activity of tax authorities. In our opinion, the relevant key guidelines should be used in the strategic planning and legislative regulation of the state tax audit.

In order to predict the value of tax revenues in the short term, three scenarios of further development of the state tax audit and its impact on the economic situation are considered (table 2).

Based on the research of doctor of economic sciences E. G. Yasin in the field of economic development, three scenarios for the development of tax audit are outlined:

1. Inertial-continuation of the policy of previous years and maintenance of the achieved level of development of tax audit without implementation of key priorities.

2. Decisive modernization - rapid and radical actions to introduce innovations into the system of state tax audit.

3. Gradual development – systematic and comprehensive implementation of tax audit transformation tools.

The probability of occurrence of each of the scenarios on the basis of an expert survey conducted by the HSE University for two forecast periods is determined (2019-2021). The sum of probabilities for each period is 100%. The analysis shows that the most likely scenario is gradual development (48 %, 48.7% and 49.4%, respectively, for each forecast period), while the least possible scenario is "Decisive modernization" (6.7%, 7.3% and 8%, respectively, for each forecast period). The probability of maintaining the current model of tax audit development is still high (45.3 %, 44 % and 42.7%, respectively).

The preference for the development of these scenarios is estimated by experts as a percentage and in total is 100%. The results of the survey show that the most preferred option is gradual development (45,2 %, 49,5% and 54,2% respectively for each forecast period), while the least preferred scenario is inertial development (14,7%, 9,5% and 6,1% respectively for each forecast period). The level of preference for the model of decisive modernization is also quite high and is 40.1 %, 41 % and 41.9 % for each period.

Table 2 – Scenario analysis of tax audit development and implications for the economy of the Republic of Kazakhstan for 2019-2021

№	Choosing the direction of tax audit development	Year	Option		
			Inertial	Decisive modernization	Gradual development
1	Probability, %	2019	45,3	6,7	48,0
		2020	44,0	7,3	48,7
		2021	42,7	8,0	49,4
2	Preference, inpoints	2019	14,7	40,1	45,2
		2020	9,5	41,0	49,5
		2021	6,1	41,9	54,2
Impact on the economy, probability (%)					
3	Rise	2019	11,2	52,9	47,3
	Stagnation		53,6	22,7	37,0
	Recession		35,2	24,4	15,7
	Rise	2020	11,8	59,1	46,1
	Stagnation		51,2	20,8	33,8
	Recession		37,0	20,1	20,4
	Rise	2021	12,4	66,0	44,9
	Stagnation		48,9	17,5	28,6
	Recession		38,7	16,6	26,5
4	The value of tax revenues, billion tenge	2019	7795,4	8002,5	8014,7
		2020	6891,2	8158,5	8141,7
		2021	6802,9	8363,9	8217,9
<i>Note.</i> Developed by the authors on the basis of research.					

Discussions. Thus, on the basis of the conducted analysis it is revealed that the preferred option of tax audit development through decisive modernization is the least likely due to the scale of the necessary measures and insufficient resources for their implementation. At the same time, the inertial path of development is most likely due to the short-term planning period, but the corresponding scenario is the least preferable, as it can lead to the preservation and subsequent increase of barriers to the development of the economic system as a whole. In our opinion, the third scenario of gradual development of tax audit is the most balanced, as the probability of its implementation is the highest and most appropriate.

We calculate the variants of the consequences of each of the scenarios for the economy in the form of the probabilities of the onset of recovery, stagnation and recession. As can be seen from the table, in case of preservation of the inertial path of development, the most possible option is economic stagnation (53.6 %, 51.2 % and 48.9% for each of the periods). The implementation of a decisive modernization is likely to lead to a rise in the economy (52.9 %, 59.1% and 66%, respectively), but the probability of recession and stagnation remains at a high level. For the scenario of gradual development, the economic recovery is more likely (47.3%, 46.1 % and 44.9%, respectively), the probability of stagnation remains quite significant, but the economic downturn can be neglected due to low indicators.

At the final stage of scenario analysis we calculate the amount of tax revenues at the onset of each of the scenarios of the state tax audit according to the formula (10):

$$T_t^i = T_{t-1} * \left((1 + g) * p_u^i + 1 * p_s^i + (1 - g) * p_d^i \right), \quad (10)$$

where T – value of tax revenues, billion tenge; i – appropriate scenario of tax audit development; t – the corresponding forecast period; g – short-term growth rate of tax revenues, %; p_u^i – the probability of economic recovery in the event of an appropriate scenario, %; p_s^i – the probability of economic stagnation in the event of an appropriate scenario, %; p_d^i – probability of economic downturn in case of the corresponding scenario, %.

Having calculated the amount of tax revenues for the respective forecast periods, it can be concluded that unfavorable options occur in the implementation of the inertial path of development. Under this scenario, there is a decrease in the simulated indicator from the actual level of 2018, which is 7 890 billion tenge., to 7,795. 4 billion tenge. in 2019, 6 891,2 billion tenge. in 2020 and 802,9 6 7 billion tenge. in 2021, respectively.

With the adoption of the model of resolute modernization, values increased tax revenues will amount to 8 billion tenge 002,5. in 2019, 8 158.5 billion tenge. in 2020 and 8 363.9 billion tenge. in 2021, respectively. These indicators indicate an acceptable level of tax revenues, however, taking into account the preference for the adoption of the studied scenario, the achievement of these indicators is unlikely.

If the path of gradual development of the state tax audit is chosen, tax revenues in the forecast periods will amount to 8,014. 7 billion tenge. in 2019, 8 141.7 billion tenge. in 2020 and 8 217.9 billion tenge. in 2021, respectively. Since the probability of occurrence of the corresponding scenario is high enough, the achievement of the identified indicators is possible and acceptable. The development of this model of state tax audit has a cumulative effect, and in the long term will serve as a key factor in achieving an advanced level at the designated strategic guidelines.

Thus, summarizing the above, we can draw the following conclusions:

Analyzing the place of Kazakhstan in the world innovative development, it should be noted that there is a dependence between the level of modernization and the volume of tax revenues. Thus, the Republic belongs to the group of countries with a low level of taxation and innovation activity. Taking into account this fact, it is proposed to accelerate the development of innovative technologies and their implementation in all areas of state regulation, in particular, in the field of state tax audit.

The transformation of the Institute of state tax audit in the framework of innovative development requires the creation of an effective system of tax control, which consists in the intensification of modern tools to increase the transparency of the economy and accelerate the information exchange of data. We have identified three phases of transformational development of the state tax audit, the final result of which is to minimize the tax gap, strengthen confidence in the national tax system and reduce the dialogue between taxpayers and tax administrations.

The implementation of the proposed way of transformation of the state tax audit can take one of three forms: inertial, decisive modernization and gradual development. In our opinion, the choice of a strategy for the gradual development of tax audit is the most rational in terms of criteria of economic effect (maximizing the result while minimizing costs) and avoiding adverse consequences of its implementation.

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САЛЫҚТЫҚ АУДИТТИ ЖЕТІЛДІРУДІҢ НЕГІЗІ РЕТІНДЕ ИННОВАЦИЯЛАРДЫ ЕҢГІЗУ

Аннотация. Ғылыми мақала ғылыми зерттеулерге талдау жасалынып мемлекеттік бақылаумен басқару саласындағы инновацияны анықтайтын негізгі бағыттары анықталды. ТМД елдерінің ғалымдарының мемлекеттік сектордағы инновациялар саласындағы зерттеулері сипатталған және Қазақстан Республикасының стратегиялық құжаттарына сәйкес салықтық реттеуді модернизациялау бағыттары келтірілген. Салық түсімдерін жинаудың Қазақстан, ЭБДҰ және көрші елдердің инновациялық белсенділік деңгейіне тәуелділігі қарастырылған.

Түйін сөздер: инновация, салықтық аудит, салық ауыртпалығы, мемлекеттік бағдарлама.

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ВНЕДРЕНИЕ ИННОВАЦИЙ КАК ОСНОВА СОВЕРШЕНСТВОВАНИЯ НАЛОГОВОГО АУДИТА

Аннотация. В научной статье проанализированы научные исследования и выявлены основные направления к определению инноваций в области государственного контроля и управления. Описаны исследования ученых стран СНГ в области инноваций в государственном секторе и приведены направления модернизации

налогового регулирования согласно стратегическим документам Республики Казахстан. Рассмотрены зависимость собираемости налоговых поступлений от уровня инновационной активности Казахстана, стран ОЭСР и ближнего зарубежья.

Ключевые слова: инновации, налоговый аудит, налоговая нагрузка, государственная программа.

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