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THE IMPLEMENTATION PROBLEMS OF OECD STANDARDS IN THE RESEARCH SPHERE IN KAZAKHSTAN

This article illustrates a brief description of the situation, which reflects the current state of the scientific and technological sphere in the Republic of Kazakhstan. Based on the study of the scientific positions of various authors, emphasis is placed on the need to implement the OECD standards in our nation, that is one of the key issues of the Strategic Development Plan of the Republic of Kazakhstan until 2025. Information is provided on the dynamics of the ratio of intramural R&D expenditures and its relation to GDP (gross domestic product) in some OECD countries that are the global leaders in innovative development. Applying the reference analysis and the study of correspondent literature, approaches to the explanation of the scientific and technological sphere are considered. The author investigates and considers the scale of intramural R&D expenditures in the Republic of Kazakhstan in 2016-2020, as well as its relation to gross domestic product. It is also mentioned that the intramural R&D expenditures' accounting in the Republic of Kazakhstan is carried out in full accordance with the internationally acknowledged OECD standards. Its main statements and provisions are expressed in the legislation of the OECD countries and regulate the implementation and development of scientific and technological policy. The relative data about indirect incentives used in the world and Kazakhstan practice are also provided. Its main purpose is to increase the motivation among the scientists and researchers under implementation of the R&D projects. The author's conclusions have been formulated and substantiated. Its implementation will certainly ensure the complex and effective development of all aspects of scientific and technological policy in our country.

Keywords: *indicator, economic sector, sources of financing, research and development work, OECD, standards, scientific and technological policy, dynamics, development, entrepreneurship.*

Кілт сөздер: *көрсеткіш, экономика секторы, қаржыландыру көздері, ғылыми-зерттеу және тәжірибелік-конструкторлық жұмыстар, ЭЫДҰ, стандарттар, ғылыми-технологиялық саясаты, динамика, даму, кәсіпкерлік.*

Ключевые слова: *показатель, сектор экономики, источники финансирования, научно-исследовательские и опытно-конструкторские работы, ОЭСР, стандарты, научно-исследовательская политика, динамика, развитие, предпринимательство.*

JEL classification: C19

Introduction. The main modern imperative of further development of the innovative and scientific-technological sphere in each nation of the globe is the deployment of the standards of the Organization for Economic Co-operation and Development (OECD).

Today, 36 countries are the members of the OECD (Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the USA).

One of the most substantial values that characterizes the scientific and technological sphere is the ratio of the level of intramural R&D expenditures to GDP. According to the OECD statistics, the value of this indicator in 2020 only in some countries was over 3%. These are, for example, South Korea (4,55%), Israel (4,54%), Sweden (3,4%), Austria (3,16%), Denmark (3,06%) and Germany (3,02%) [1].

Talking at the expanded meeting of the Government on July 15, 2019, President of the Republic of Kazakhstan K. Tokayev said that "... Spending on science in our country this year amounted to only 0,13%, while in developed countries – 2,5%. The effectiveness of funds allocated to science is also quite low. According to experts, spending on science below 1,5% of GDP will not lead to a full return on costs. It is necessary to improve various mechanisms for attracting the private

sector to science based on the experience of OECD countries. In the modern world, you can't take a step without science, but it should be added: without high-quality, progressive science... All of the above should be taken into account in the state program for the development of education and science being developed. In the same place, the Government should provide a plan to bring total spending on these areas to 5% of GDP" [1].

The goal of the work is to analyze and assess the present state expressing the innovative issues of the Kazakhstan's economy.

The achievement of this goal requires the solution of the **following tasks**:

- the issues of various scientists containing the essence of the conceptual and categorical apparatus characterizing the scientific and technological development of the state are considered;

- the key statements of the OECD standards that concern the state and market regulation of the scientific and technological sphere are considered and studied;

- statistical data that characterizes the development dynamics of the scientific and technological sphere are considered;

- author's formulated recommendations will maintain the rise of the level of scientific and technological development in our country.

Literature review. The development of the state innovation policy is given considerable attention in modern scientific literature.

For example, O.N. Baburina and L.K. Gurieva, justifying their scientific position in terms of the scientific and technological aspects of the country's competitiveness, note the weak innovative activity of business and insufficient share of government spending on research and development for technologically driven productivity growth [2, p.396-416].

In turn, T.R. Akhmetov offers concrete measures aimed at the effective decision-making solution the questions of the state research policy based on the interregional cooperation [3, p.1594-1611].

M.S. Vlasova and O.S. Stepchenkova talk about the problems of technological lag, which should be solved on the basis of modernization of the manufacture- technological branch and further development of high-tech areas [4, p.1680-1692].

N.P. Lyubushin, N.E. Babicheva, A.I. Lylov and E.I. Pulyakhin are convinced that the absence of specific subject, industry and technological indicators in state programs does not allow timely identification of the "big challenge" at the stage of its origin, and this negatively affects the quality of implementation of state programs of socio-economic development and technological development [5, p. 2190-2206].

I.A. Bozieva believes that in modern conditions it is advisable to develop and put into operation a digital platform for innovative financing integrated with the ecosystems of the banking and financial sectors being created [6, p.1043-1060].

V.N. Makoveev comes to the conclusion that increasing the financing of innovation activities, the quantity of R&D workers, enhancing their salaries and incomes create prerequisites for the activation and development of innovation in the manufacturing industry [7, p.143-153].

T.I. Volkova and T.V. Meshcherina talk about the need for a differentiated approach to ensuring the development of main innovative economic sectors to overcome with the possible market competitive threats [8, p.93-103].

S.V. Ratner believes that forecasting the social and economic consequences of the spread of new technologies makes it possible to accelerate significantly their entry into the market [9, p.820-835].

The author of the article shares the opinion and aspects of these scientists. Albeit, in modern conditions, the main issue of the innovation environment development is the widespread introduction of OECD standards in research and development.

Materials and methods of research. The key document that determines the issues of statistical accounting of intramural R&D expenditures is the "FRASCATI" Manual. It acts as the main OECD standard in the field of scientific and technological policy [10].

Statistical agencies generate macroeconomic data and, on the one hand, they are the sources of funds, i.e. areas (sectors) of intramural R&D expenditures, and, on the other hand, sources of financing intramural R&D expenditures (the sources of funds).

Thus, in the FRASCATI Manual, along with the presentation of the terminological conceptual apparatus that reveals the main definitions used in the scientific, technological and innovative sphere, institutional sectors that carry out intramural R&D expenditures and form sources of R&D financing (higher education, business/business sector, non-profit sector, foreign sources of financing, etc.) are given (see table 1).

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Table 1

Detailing the intramural R&D expenditures by the sources of funds and sectors of performance

Sectors of performance of the intramural R&D expenditures	Sum	Sources of funds of the intramural R&D expenditures	Sum
Business sector	-	Business sector	-
Government, regional authorities, other state structures	-	Government, regional authorities, other state structures	-
Universities, institutes, academies	-	Universities, institutes, academies	-
Non-profit institutions		Non-profit institutions	
------------	-	Foreign sources of financing	-
Total	-	Total	-

The availability of these data makes it possible for public administration bodies to effectively manage the flow of funds necessary for the implementation of scientific, technical and innovation policy.

Characteristics and analysis of statistical indicators reflecting innovative ecosystem of the Republic of Kazakhstan.

The author confirms that the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan performs the intramural R&D expenditures accounting in full compliance with the "FRASCATI" Guidelines.

Table 2 shows the details of intramural R&D expenditures by sources of funds and sectors of their performance in 2018-2020 in Kazakhstan.

Table 2

The intramural R&D expenditures by sources of funds and sectors of their performance in 2018-2020 in Kazakhstan*, mln.tenge

R&D sources of funds			Sphere (sector)	R&D performance		
2018	2019	2020		2018	2019	2020
23 017,0	25 361,0	27 941,0	Government, regional authorities, other state structures	22 091,8	24 290,6	28 847,2
11 817,0	13 401,0	13 998,1	Universities, institutes, academies	11 515,0	13 373,9	14 795,6
29 882,0	35 081,0	38 002,0	Business and entrepreneurship	30 998,8	33 884,4	36 832,9
7 508,4	8 490,0	9 087,6	Non-profit institutions	7 618,8	10 784,1	8 553, 0
72 224,4	82 333,0	89 028,7	Total:	72 224,5	82 333,1	89 028,7

* Source: [11]

As can be seen from table 2, the largest amount under formation and performance of intramural R&D expenditures is noted in the business and entrepreneurship sector.

For example, in 2020, business financed R&D projects in the amount of 36 832,9 million tenge (or 44,9% of the total intramural R&D expenditures), which is 2 948,5 million tenge (or 8,7%) more than in 2019 and 5 834,1 million tenge (or 18,82%) more than in 2018. In turn, intramural R&D expenditures in the business sector were made up in the amount of 38 002,0 million tenge (or 42,7% of the total intramural R&D expenditures), which is 2 921,0 million tenge (or 8,3%) more than in 2019 and 8 120,0 million tenge (or 27,2%) more than in 2018.

The state of scientific and technological sphere of any country may also be characterized using the ratio of intramural R&D expenditures to GDP.

The level of intramural R&D expenditures to GDP in 2020 amounted to 0.13%, which is 0.01% more than in 2019 and 2018 (see figure 1).
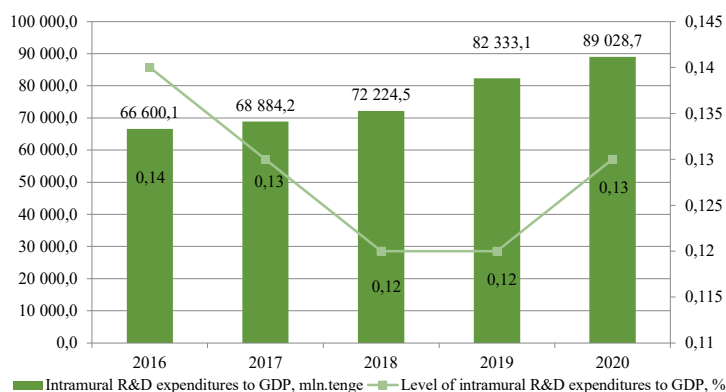
Figure 1. **Intramural R&D expenditures and its relation to GDP in Kazakhstan in 2016-2020***

* *Source: [11]*

Conclusion. Summarizing the above, we believe that our state authorities have to pay attention to the following issues:

- development a comprehensive program to increase the level of intramural R&D expenditures to GDP, containing a plan of measures, the implementation of which would allow to reach 3,0% by 2050;

- diversification the system of direct and indirect incentives that would interest businesses in investing the R&D projects;

- based on the best practices of countries that are world leaders in the field of R&D, conduct explanatory work, develop and implement domestic methodological recommendations for business on the implementation of intramural R&D expenditures in accordance with OECD standards;

- study international R&D legislation, develop and improve proposals, the implementation of which would increase the proportion of intramural R&D expenditures to GDP;

- widely promote and cover in the media and on television the OECD standards necessary for accounting for intramural R&D expenditures;

- hold thematic conferences, forums and round tables at the universities, research institutes, enterprises, etc.

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Д.Н. Шайкин

ҚАЗАҚСТАНДА ҒЫЛЫМИ-ЗЕРТТЕУ САЛАСЫНА ЭЫДҰ СТАНДАРТТАРЫН ЕНГІЗУ МӘСЕЛЕЛЕРІ

Аңдатпа

Мақалада Қазақстан Республикасындағы ғылыми-техникалық саланың қазіргі жай-күйін көрсететін жағдайдың қысқаша сипаттамасы көрсетілген. Қазіргі заманғы ғылыми әдебиеттерге теориялық талдау жасау негізінде автор біздің елімізде ЭЫДҰ стандарттарын енгізу қажеттілігіне баса назар аударды. Бұл

проблема Қазақстан Республикасының 2025 жылға дейінгі Стратегиялық даму жоспарының негізгі мақ-саттарының бірі болып табылады. Жұмыста инновациялық дамудың жаһандық көшбасшылары болып табылатын ЭЫДҰ-ның бірқатар елдерінде ҒЗТКЖ-ны жүзеге асыруға арналған ішкі шығыстардың мәнін дамыту және олардың ЖІӨ-ге (жалпы ішкі өнім) қатынасы туралы ақпарат көрсетілген. Экономикалық талдау мен әдебиеттерді қолдану негізінде еліміздің ғылыми-технологиялық саласының жағдайын толық бағалауға мүмкіндік беретін әртүрлі тәсілдер зерттелуде. Автор бес жылдық кезең - 2016-2020 жылдар-дағы Қазақстан Республикасындағы ҒЗТКЖ-ға ішкі шығыстардың серпінін, сондай-ақ олардың жалпы ішкі өнімге қатынасын зерттейді және қарайды. Сондай-ақ, біздің елімізде ҒЗТКЖ-ға жұмсалатын шығыс-тарды есепке алу ЭЫДҰ елдерінің заңнамасында көрініс табатын және бір мезгілде ғылыми-технологи-ялық саясатты іске асыруға және тиімді дамытуға ықпал ететін ЭЫДҰ-ның әлемдік танылған стандарт-тарына сәйкес жүргізіледі. Сондай-ақ Әлемдік және қазақстандық практикада белсенді қолданылатын жанама ынталандырулар туралы тиісті деректер келтіріледі. Олардың негізгі мақсаты-ғылыми-зерттеу жобаларын жүзеге асыруда ғалымдар мен зерттеушілердің ынтасын арттыру. Авторлық қорытындылар тұжырымдалған және негізделген. Оларды имплементациялау еліміздегі ғылыми-технологиялық саясат-тың барлық аспектілерін кешенді және тиімді дамытуды қамтамасыз ететіні сөзсіз.

Д.Н. Шайкин

ПРОБЛЕМЫ ВНЕДРЕНИЯ СТАНДАРТОВ ОЭСР В ИССЛЕДОВАТЕЛЬСКОЙ СФЕРЕ В КАЗАХСТАНЕ

Аннотация

В статье отражено краткое описание ситуации, которое определяет современное состояние научно-технической сферы в Республике Казахстан. На основе выполнения теоретического анализа современной научной литературы автором делается акцент на необходимости внедрения стандартов ОЭСР в нашей стране. Данная проблема выступает одной из ключевых целей Стратегического плана развития Республи-ки Казахстан до 2025 года. В работе отражена информация о развитии значения внутренних расходов на осуществление НИОКР и их отношения к ВВП (валовой внутренний продукт) в ряде стран ОЭСР, кото-рые являются глобальными лидерами инновационного развития. На основе применения экономического анализа и литературы исследуются различные подходы, позволяющие в полной мере оценить состояние научно-технологической сферы нашей страны. Автор рассматривает динамику внутренних расходов на НИОКР в Республике Казахстан за пятилетний период - 2016-2020гг., а также их отношение к валовому внутреннему продукту. Также отмечается, что учет расходов на НИОКР в нашей стране ведется в соот-ветствии со всемирно-признанными стандартами ОЭСР, которые находят отражение в законодательстве стран ОЭСР и одновременно способствуют реализации и эффективному развитию научно-технологи-ческой политики. Также приводятся соответствующие данные о косвенных стимулах, активно приме-няемых в мировой и казахстанской практике. Их основная цель – это повышение мотивации ученых и исследователей при реализации научно-исследовательских проектов. Сформулированы и обоснованы авторские выводы. Их имплементация, безусловно, обеспечит комплексное и эффективное развитие всех аспектов научно-технологической политики в нашей стране.