

BASIC PRINCIPLES OF SCIENTIFIC RESEARCH IN HIGHER EDUCATION INSTITUTIONS: MANAGEMENT AND FINANCING

Abstract. The article analyzes basic principles and specifics of managing and financing research activities in higher education institutions. The state of scientific research and the sources of its financing are analyzed, problems and prospects of scientific activities are explored. The necessity of introduction and implementation of state target scientific and technical programmes, as well as procedures of state certification of scientific activities of higher education institutions is justified. Recommendations for improving management and financing of scientific research are formulated.

Keywords: higher education institutions, management of scientific activities, financing of scientific research.

Formulation of the problem. Ukrainian scientific research and scientific technological potential is concentrated in academies, industries and universities. During 2016, scientific and scientific-technical research works were conducted by 972 organizations, 46.6 % of which were from public sector¹ (including institutions of the National Academy of Sciences of Ukraine, National Academies of Agrarian, Medical, Pedagogical and Legal Sciences as well as National Academy of Arts); 37.7 % belonged to business sector² (in particular, research institutes, research and production associations subordinated to profile ministries and solving problems of particular industries); and 15.7 % were from higher education

sector³ (higher education institutions incorporating scientific research units in their structure (research institutes, scientific research centers, research laboratories, fundamental research laboratories, applied research laboratories as components of scientific research departments, sectors etc.) (Fig. 1) [1]. The largest financial support is provided to the public-sector organizations, it being about 75 % of budget financing for science (the National Academy of Sciences receiving 75 %). The higher education sector receives 13 %, and the business sector gets 12 % of budget financing for science.

Reduction of the total number of organizations involved in scientific research in Ukraine (by 35 % during the last 10 years) occurs mainly in the business sector, thus reflecting the actual state of the present-day economy of Ukraine, the number of organizations and institutions in the higher education sector remaining practically unchanged during this period.

Higher education institutions (HEIs) provide powerful intellectual resource for conducting scientific research and they are important in the system of organizations carrying on scientific and technological research. By integrating education and science, higher schools provide solutions to complex tasks in scientific and technological sectors of the national economy as well as in the economy as a whole, and train scientific and pedagogical professionals for all branches of the economy. It is at higher education institutions that the traditions formed by scientific schools during generations have been preserved and developed.

¹ Public sector – non-profit economic entities (budget-funded scientific organizations, institutions subordinated to government authorities, as well as organizations providing services to them).

² Business sector – businesses, i.e. organizations and enterprises engaged in activities related to manufacturing products (works and services) for sale, regardless of their type (research institutes, design organizations, R&D organizations, industrial enterprises, research bases and organizations that directly serve them).

³ Higher education sector – higher education institutions irrespective of subordination, sources of funding or legal status, as well as research institutes (centers), design organizations, R&D organizations, research enterprises subordinated to higher education institutions, as well as organizations that directly serve them).

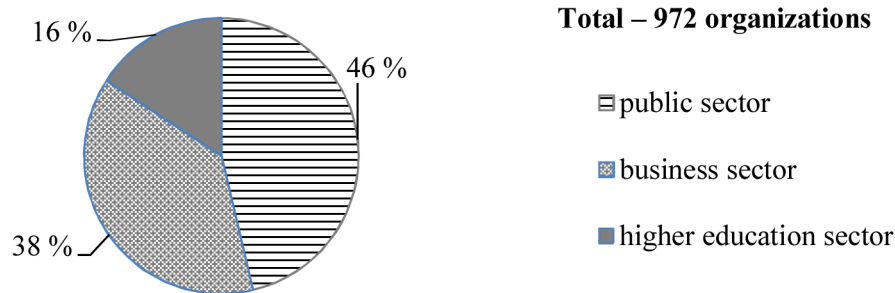


Fig. 1. Organizations engaged in scientific and scientific-technical activities in Ukraine in 2016 by sectors (according to the local industry classification system).

At the beginning of 2016/17 academic year there were 657 HEIs in Ukraine, 287 of them (41.6 %) being universities, academies and institutes doing fundamental and applied research [2].

Personnel potential of HEIs is crucial for scientific research in Ukraine: the overwhelming majority of the total number of doctors and candidates of sciences (70.9 % and 72.9 %, respectively) work in the system of higher education.

According to the data of the State Statistics Committee, at the beginning of 2016/17 academic year, 110.1 thousand research and teaching personnel, 97.1 thousand of them being full-time employees, were working at 287 universities, academies, and institutes [2], combining teaching with scientific and scientific-technical activities. There are 6,700 full-time researchers more in R & D units and sectors of HEIs.

At the same time, in all other research institutions and organizations (from both public and business sectors) only 74.7 thousand staff researchers are directly engaged in research work [3].

Thus HEIs possess powerful scientific potential to drive effective development of all sectors of the national economy. However, the rational use of this potential is possible only if its management is based on systems approach, integrity, efficiency and flexibility.

Analysis of recent research and publications.

Scientific research, as well as a complex of issues and problems associated with its implementation, has always been the focus of attention of politicians, government officials and scientists. Management, functioning and development of scientific research activities are dealt with in the works of M. V. Strikh, S. M. Nikovayenko,

A. A. Mazaraka, O. Ye. Kuzmin, Yu. V. Kovbasiuk, K. O. Vashchenko, Yu. P. Surmin, M. M. Bilynska, M. M. Izha, V. I. Luhovyi, V. S. Zahorskyi, D. V. Cheberkus, V. A. Landsman, A. A. Popok, S. M. Seriohin, I. V. Valentiuk and others. However, the issues related to science competitiveness, the demand for science by industry and society are relevant and require further research and consideration.

The purpose of the research is to analyze the basic principles and specifics of managing and financing scientific research at HEIs for further working out recommendations on its improvement. The object of this research is higher education institutions of Ukraine that perform fundamental and applied research, they being universities, academies and institutes.

Materials and results. The effectiveness of scientific research in HEIs is determined by a number of factors, in particular, by the system of management at all administrative levels, as well as financing.

The system of management. Ukraine has a state system of management of scientific research activities. The Verkhovna Rada of Ukraine defines the main goals, directions and principles of the state policy in the field of scientific and scientific-technical activities as well as international scientific and technical cooperation, approves the priority directions of science and technology development [4, 5].

The powers of the President of Ukraine are to specify the system of executive bodies that realize public management in the field of scientific and scientific-technical activities in Ukraine; to ensure control over the formation and functioning of the public administration system in the field of scientific and scientific-technical activities [4].

The Cabinet of Ministers of Ukraine is responsible for development and state support of the scientific, technical and innovation potential of the country, development and implementation of national scientific and technical programmes, coordination of measures for the development and improvement of infrastructure for scientific and technological activities [4, 6].

In order to ensure effective interaction of representatives of the scientific community, executive authorities and the real sector of the economy in the formation and implementation of a unified state policy in the field of scientific and scientific-technical activities, the Cabinet of Ministers of Ukraine forms the National Council of Ukraine for Science and Technology Development, it being a permanent advisory body [7]. According to the recommendations made by the commission of independent experts and leading specialists of the profile ministries of the EU countries in the framework of the international audit of Ukrainian research and innovation system and formulated in the Background Report “Peer Review of the Ukrainian Research and Innovation System” [8], The National Science and Technology Council should take strategic measures for reforming and reorienting the system of science and technologies in Ukraine on the basis of the priorities agreed on by all stakeholders, including the Ministry of Education and Science of Ukraine, the future

National Fund for Research, the National Academy of Sciences, and, in particular, it should introduce a comprehensive process of identifying primary national research areas in the general list of national social and economic priorities.

The Ministry of Education and Science of Ukraine is the main body in the system of central executive authorities responsible for formation and implementation of state policies in the areas of scientific, scientific-technical and innovative activities. One of the tasks of the Ministry of Education and Science of Ukraine is to develop principles of scientific and scientific-technical development, to form state target scientific and scientific-technical programmes, to manage the system of scientific and scientific-technical expertise and to ensure organization of activities in the field of scientific- technical information etc. [9]. Other central executive authorities are to ensure implementation of scientific- technical policies in their profile areas and development of scientific-technological potential of specific industries.

Among the 287 HEIs (universities, academies, institutes), whose employees carry on fundamental and applied research, 138 (48 %) institutions are subordinated to the Ministry of Education and Science of Ukraine. Other higher schools (52 %) belong to other ministries and government agencies (Fig. 2) [2].

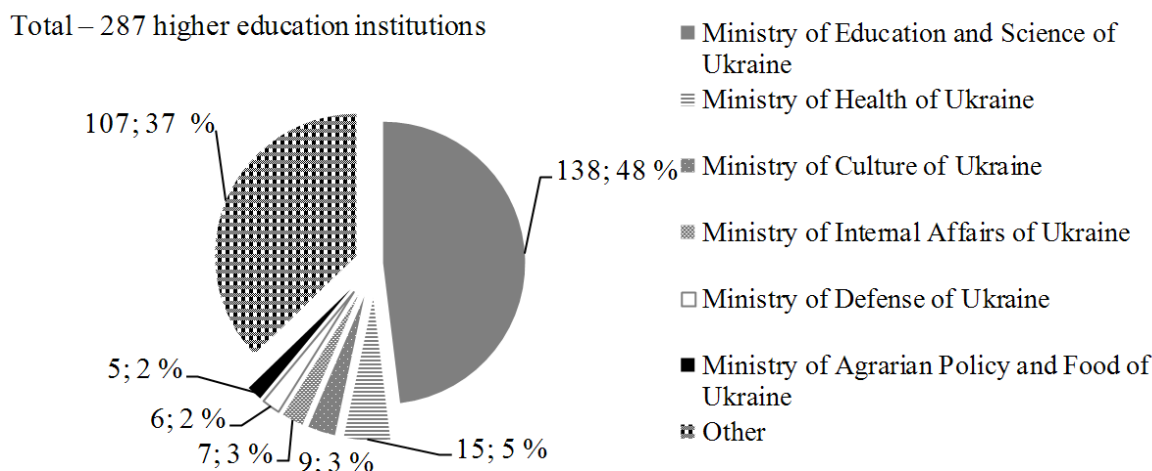


Fig. 2. Higher education institutions (universities, academies, institutes) according to their subordination (at the beginning of 2016/17 academic year)

During the last decades there have existed a number of problems in the sphere of public administration of scientific research. Firstly, the declared reforms of the Ukrainian economy and a number of programmes offered by the Ukrainian government, unfortunately, have no effect on the growth of demand for production and the needs of the economy for research and development. Secondly, there has not been yet put into effect long-term and medium-term forecasting and planning of social and economic development [10]. Thirdly, there is no clear regulation of scientific activities; there is a mutual mismatch between some legal and regulatory documents in the field of scientific activity. Fourthly, the attempts to solve issues of the scientific sphere without taking into account the current state of individual industries

and the economy as a whole still remain “a weak point”.

Financing of scientific activities of higher education institutions of Ukraine. In Ukraine there are higher educational institutions of state, communal and private property (Fig. 3) [2]. All these institutions have equal rights in conducting scientific activities.

Financing of scientific activities of Ukrainian HEIs is carried out in accordance with the Law of Ukraine “On Scientific and Scientific-Technical Activities” [4]. State-funded HEIs are financed by the state budget; municipal higher schools receive financing from the local budgets; private HEIs are financed at the expense of their founders [11]. Besides, all these HEIs can be financed by domestic and foreign institutions, organizations and enterprises, international grants and other sources (Fig. 4).

Total -287 higher education institutions

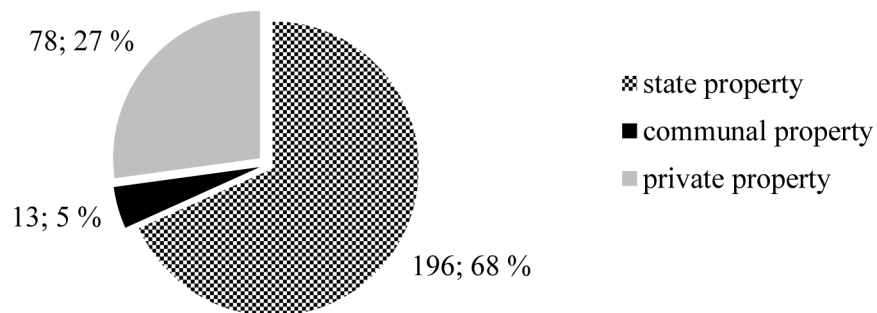


Fig.3. Higher education institutions of Ukraine (universities, academies and institutes) by the form of property (at the beginning of 2016/17 academic year)



Fig. 4. Sources of funding scientific activities in Ukraine

According to [4], the state is supposed to allocate at least 1.7 % of GDP of Ukraine to scientific and scientific-technical activities. However, the actual expenditures on scientific activities, despite the declared “gradual increase”, tend to continuously decrease (Fig. 5). In 2015 the funding of scientific and scientific-

technical activities in Ukraine from different sources amounted to UAH 12 236.16 million, including UAH 4 254.49 million (0.21 % of GDP) from the state budget [12]. In 2017 the planned funding of these activities from the state budget of Ukraine is UAH 6 337.2 million, or 0.24 % of GDP [13].

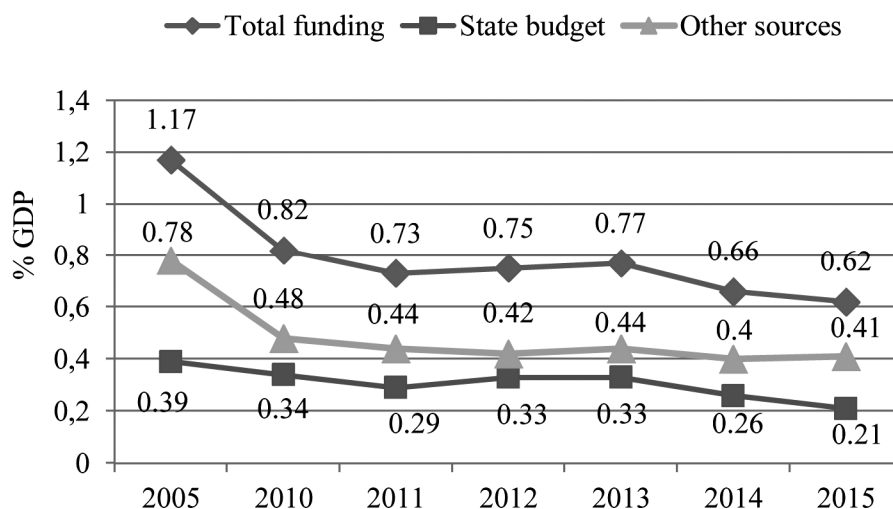


Fig. 5. Dynamics of expenditures on scientific activities by sources as a percentage of GDP (dynamics of R&D/GDP intensity)

According to [4], the state budget finances the following:

- fundamental and applied research, scientific-technological developments, research-related infrastructure, preservation and development of scientific objects of national heritage; access to scientific-technical information and literature etc. This refers to basic funding;
- scientific and scientific-technological programmes and projects, performed on government orders and within state target scientific and scientific-technological programmes; projects in the frames of international cooperation. This funding is provided on a competitive basis.

The new law “On Scientific and Scientific-Technical Activities” [4] states that the basic financing of HEIs is determined on the basis of state attestation of their scientific activities, taking into account its quality, availability of scientific, research and technical personnel, as well as material and technical support. Thus, following the Law “On Higher Education” [14], a research university has the right to receive the basic funding for conducting scientific research activities in the amount of not less than 25 % of the funds provided by the state for this university maintenance, in accordance with a separate budget programme in the State Budget of Ukraine. But at present there is no state attestation of the research

activities at HEIs. The documents that regulate the procedure of such attestation [15, 16] require improvement with the account of certain specifics of scientific research. In 2016 a new draft of Regulations on state attestation of HEIs was made public.

At present actually only one HEI in Ukraine, Kyiv Taras Shevchenko National University, receives basic financing of its scientific research activities by a separate programme of state budget (the code of the program classification of expenses (PCE) of the budget being 2201290 titled Research, scientific and technical developments, scientific events conducted by Kyiv Taras Shevchenko National University, financial support of scientific objects of national heritage). The amount approved by the passport (descriptor) of the budget programme for 2017 is UAH 98571.5 thousand [17]). Other HEIs do not receive such budget financing, thus jeopardizing the development of scientific schools, scientific infrastructure of HEIs, and the educational function of science. Financing of scientific research at these HEIs is provided exclusively on the competitive basis (according to PCE code 2201040 titled Research, scientific and technical developments, execution of works on state target programs and government orders, training of scientific personnel, financial support of scientific infrastructure, scientific press and

scientific objects of the national heritage, ensuring the activities of the State Fund for Fundamental Research, the approved amount for 2017 being UAH 621 476.6 thousand [17]).

The competitive approach to financing, on the one hand, ensures the selection of projects with the highest score, and, therefore, the most up-to-date and most promising scientific projects (since the competition procedure involves assessment of projects and the achievements of authors by a large number of criteria), however, on the other hand, creates a risk of terminating important scientific research after failing the competition (since the developed system of criteria is not always able to

objectively estimate the achievements of authors in certain industries).

In addition, the level of funding for projects based on the results of the competitive selection should reflect the relevance of research done at HEIs and correlate with the results of national ratings (since, as it is known, in the set of criteria provided by the methods of evaluation, the determinative contribution is made by the indicators related to scientific activity). However, among the 10 HEIs that received the largest budget financing in 2017 (Table 1), only 65 % are among the leaders in national ratings.

Table 1

Financing of fundamental research, applied research, scientific and technological (experimental) developments of some HEIs in 2017 (PCE 2201040)

No.	Spending unit	Amount, thousand UAH	Share of the total funding	Line in the national rating of Ukrainian HEIs (2016)		
				Consolidated rating of Ukrainian HEIs	Rating by Scopus score	TOP -200
1.	V.N.Karazin Kharkiv National University	48431.9	9.88 %	2	2	3
2.	National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute"	26399.7	5.39 %	3	6	1
3.	National University of Life and Environmental Sciences of Ukraine	21608.9	4.41 %	11	27	10
4.	National Technical University "Kharkiv Polytechnic Institute"	21385.2	4.36 %	4	9	4
5.	Odessa Mechnikov National University	20703.4	4.22 %	7	4	17
6.	Lviv Polytechnic National University	18976.7	3.87 %	6	10	5
7.	National Aviation University	14835.3	3.03 %	14-15	29	19
8.	Lviv Ivan Franko National University	13544.4	2.76 %	5	3	9
9.	National Aerospace University – Kharkiv Aviation Institute	11973.1	2.44 %	12	20	14
10.	Oles Honchar Dnipro National University	10427.2	2.13 %	10	8	11

	Total	490173. 7				

This fact testifies to the need for the immediate introduction of the procedure of state certification of scientific activities of HEIs and the development of objective criteria for their evaluation.

Another component of the budget financing of HEIs is funding of scientific and scientific-technical programmes and projects that are carried out:

- on government orders (coded PCE 2201040);
- within the framework of state target scientific and scientific-technical programmes (coded PCE 2201040);
- within the scope of international cooperation (coded PCE 2201380).

According to [5], these programmes are the main instrument for implementing the priority directions of the development of science and technology in Ukraine. Programme-oriented management of scientific and technological development is used in advanced, high-tech economies of the world. However, in Ukraine, this component of budget financing is insignificant.

Thus, in 2016, the total amount of budget financing of research and development in Ukraine was UAH 3272.67 million. The share of budget financing on the development of most important innovative technologies on the government order was 0.89 % (UAH 29.22 million). Within the framework of state target scientific and scientific-technical programmes, the share was 5.78 % (UAH 189.05 million); in the sphere of international cooperation it was 0.09 % (UAH 2.93 million). Within these amounts, the expenditures on the implementation of priority directions of science and technology development constituted 0.99 % (UAH 29.22 million), 0.3 % (UAH 7.78 million) and 0, respectively [18].

By the decision of the Cabinet of Ministers of Ukraine [19], the implementation of state target programmes was pre-terminated, among them being three scientific-technical programmes. The last Resolution of the Cabinet of Ministers of Ukraine [20], which approved the list of state scientific and scientific-technical programmes on the priority areas of science and technology

development, was adopted yet in 2001. The Resolution approved the list of state scientific and scientific-technical programmes for 2002–2006.

In addition, the order [21] cancelled the order “On Approval of the Regulations on the Procedure for the Formation and Implementation of State, Industry (Multi-sectoral), Regional Scientific and Technical Programmes, Scientific and Technical Parts of Investment, Social and Other Programmes”. The Commission of Independent Experts [8] proposes to gradually increase the share of competitive research costs (within these programmes) in the total amount of public research expenditures to 20 % in 2018; 30 % in 2020 and 40 % in 2022.

Another important source of funding research at HEIs is funding received from domestic and foreign enterprises, institutions and organizations. As stated in the Memorandum on the Results of the Scientific and Technical Activities of Higher Education Institutions and Research Institutions for 2015, taking into account the provisions of the Law of Ukraine “On Higher Education” [22], the funding of HEIs in the system of the Ministry of Education and Science at the expense of this source constituted UAH 140.6 million. The share of financing of these universities in the total amount of research funding is 25 % [22].

Financing of scientific activities of HEIs at the expense of domestic and foreign enterprises, institutions and organizations is done on the basis of economic contracts. The leading universities of Ukraine are traditionally the leaders among universities in terms of attracting such financial resources. In 2016 the amounts of economic contracts on research work and scientific and technical services to domestic and foreign enterprises and institutions were the following: National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute” – about UAH 30 mln., Taras Shevchenko National University of Kyiv – UAH 12 900.7 thousand [23], Lviv Polytechnic National University – UAH 11 279 thousand, National Technical University “Kharkiv Polytechnic Institute” – UAH 6 602.7 thousand [24].

Despite the fact that the effective operation of industrial enterprises is impossible without the development and introduction of new products and new technologies into the market, there is a low interest of these enterprises in scientific and technical cooperation with HEIs. This is due to the low readiness status of scientific and technical products obtained in the result of performing fundamental and applied works. In addition, as of today, there is no developed mechanism for introducing university developments into production. Levying a value-added tax on

scientific and technical products greatly increases its value and, accordingly, reduces the interest of enterprises in cooperation with HEIs.

The interest of enterprises in financing and implementing Ukrainian innovation developments would increase due to exemption from taxation of the part of their income (regardless of the form of the enterprise property), which is directed to financing research at universities, as well as the introduction of mechanisms for insurance of innovative risks of enterprises when investing in the production of new goods and services.

Table 2

**Participation of Ukrainian HEIs in EU Framework Programme
for Research and Innovation HORIZON 2020 (as of July 7, 2017)**

No	Ukrainian HEI-participant (partner) of the project	Total amount of project financing / funding of Ukrainian HEIs, Euro	Project name, Deadline
1	2	3	4
1	Odessa State Ecological University	3 996 405/ 28 187.50	Preparatory phase for the pan-european research infrastructure danubius-RI the international centre for advanced studies on river-sea systems (2016-2019)
2	National Forestry University of Ukraine	4 734 594.50/ 10 233.75	Distributed, integrated and harmonised forest information for bioeconomy outlooks (2015-2019)
3	National Aerospace University "Kharkiv Aviation Institute"	1 996 662.50/ 115 000	Facilitating Collaboration in Research and Development to Foster Further Innovation in European Aeronautics (2016-2019)
		1 000 000/ 134 125	Strategic and Targeted Support for Europe-Ukraine Collaboration in Aviation Research (2016-2019)
4	National University of Kyiv "Mohyla Academy"	2 495 674/ 54 218	Good intentions, mixed results – A conflict sensitive unpacking of the EU comprehensive approach to conflict and crisis mechanisms (2016-2019)
5	National Aviation University, National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute"	1 034 227/ 112 500/ 78 750	Ukraine Replication, Awareness and Innovation based on EGNSS (2015-2016)
6	Taras Shevchenko National University of Kyiv	1 411 162.50/ 56 000	FREE and open source software tools for WATER resource management (2015-2017)
7	Kharkiv National Economic University named after Semen Kuznets	1 857 217.50/ 123 500	Gender Equality Plans for Information Sciences and Technology Research Institutions (2016-2019)

1	2	3	4
8	Lviv National Medical University named after Danylo Galytskyi	580 500/ 76 500	Pathogen and Graphene (2016–2019)
9	Uzhgorod National University	3 325 755/ 37 511	ACCELERATing Europe's Leading Research Infrastructures (2017–2020)
10	Odessa I.I.Mechnikov National University	1 665 000/ 63 000	Knowledge Exchange and Academic Cultures in the Humanities: Europe and the Black Sea Region, late 18th – 21st Centuries (2017–2020)
11	Science park “Kyiv Taras Shevchenko University”	891 000/ 288 000	Carbon-based nano-materials for theranostic application (2017–2019)
	Total	24 988 198/ 1 177 525.25	

Another important resource of financing scientific research at universities is international grants, in particular, grants within the EU Framework Programme “Horizon 2020”, grants from NATO within the Program “Science for Peace and Security” (SPS), other European programmes, and funds of international organizations. According to data from CORDIS [25], starting from 2015, 11 Ukrainian HEIs are taking part in 12 projects of the “Horizon 2020” programme, with a total budget of over 24 988.2 thousand euros. The volume of funding received by Ukrainian HEIs is 1 177. 53 thousand euros (4.71 % of the total budget) (Table 2). Within the NATO Science for Peace and Security (SPS) programme, Ukrainian HEIs and research institutions perform 39 long-term projects. Their total cost to Ukrainian participants is more than 10 million euros [26].

The expansion of the Ukrainian HEIs participation in international grants programmes depends on the level of their scientific research, which is determined, first of all, by the availability of materials, technologies and equipment, as well as access to international information resources. This problem could be solved, in particular, by resuming state programmes “Science in Universities” (which included, among other tasks, the updating of the material and technical base); and by scientific

training of postgraduate students, doctoral students, scientific and pedagogical workers in leading higher educational establishments and scientific institutions abroad [27] (this programme was aimed at conducting research using modern equipment and technologies, providing information exchange, and expanding international scientific contacts).

The budget financing received by HEIs for carrying out scientific research (the list of these research works and developments is included in the thematic plan of research works, which are executed on the order of the Ministry of Education and Science of Ukraine) is a component of the general fund of the state budget of HEIs, while the funds received for the implementation of scientific and scientific-technical programmes and projects (on government order, within the framework of state target scientific and technical programmes and international cooperation), funds of domestic and foreign institutions, organizations and enterprises, as well as grants, and other sources are components of the special fund. Fig. 6 presents the structure of HEI budget for scientific research.

The correlation between the special and general funds in a certain way indicates the effectiveness of using budget funds. Table 3 shows the amount of funding for scientific

research activities of the leading Ukrainian HEIs. The efficient use of budget funds (i.e., greater than unity) is observed mainly in technical HEIs of Ukraine. This is due to their performing applied

research and scientific and technical developments on the orders of foreign and domestic enterprises, which make major contributions to the special fund of the overall budget.

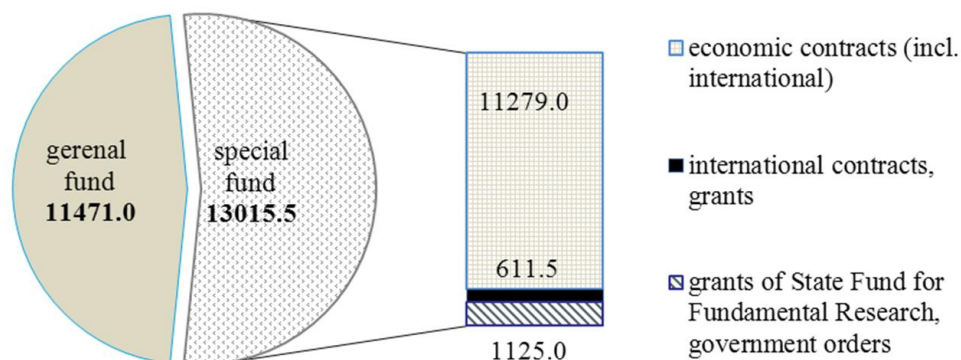


Fig. 6. Sources of forming state budget funds of a HEI for scientific research and the amount of funding by sources; thousand UAH.

(Lviv Polytechnic National University, 2016, as an example)

Table 3

Funding of scientific research activities of leading Ukrainian HEIs in 2016

No.	Higher Education Institution	Funding (thousand UAH)		Efficiency of using budget funds	Line in consolidated rating of HEIs in 2016
		General fund	Special fund		
1	Taras Shevchenko National University of Kyiv [23]	74 914.9	39 517.7	0.55	1
2	V.M. Karazin Kharkiv National University [28]	31 500.0	12 002.0	0.38	2
3	National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" [29]	21 283.6	37 877.3	1.78	3
4	National University of Life and Environmental Sciences of Ukraine [30]	20 870.7	16 916.9	0.81	11
5	National Technical University "Kharkiv Polytechnic Institute" [31]	17 050.7	8102.0	0.48	4
6	Lviv Polytechnic National University	11 471.0	13015.5	1.14	6
7	Lviv Ivan Franko National University [32]	10 099.0	4347.0	0.43	5
8	Odessa I.I.Mechnikov National University [33]	13 667.0	4432.0	0.32	7
9	Sumy State University	5 325.0	13 271.0	2.49	8
10	Chernivtsy Yurii Fedkovych National University [33]	6857.9	233.8	0.03	9
11	Oles Honchar Dnipro National University [33]	8500.1	3541.8	0.42	10

Conclusions. The tasks facing higher education institutions in the field of scientific research activities require solving a number of problems, in particular legislative, regulatory and

financial. Among the measures that need to be taken to improve scientific research activities of HEIs, it is important to distinguish the following:

- to harmonize legislative and regulatory documents in the field of scientific research activities of HEIs;

- to provide budget allocations of at least 1.7 % of GDP, stipulated in the Law of Ukraine “On Scientific and Scientific-Technical Activities”;

- to improve legislative framework for insurance of innovative risks, preferential taxation, technology transfer;

- to introduce basic funding of the leading Ukrainian HEIs, declared in the Law of Ukraine “On Higher Education” and to improve the principles of financing scientific research activities;

- to resume state target scientific and technical programmes, in particular, “Science in Universities”, as well as the state programme of internship of scientific and academic workers at foreign universities and scientific institutions in order to strengthen integration into the international scientific research area, to expand participation of scientists and researchers from Ukrainian HEIs in international projects;

- to improve the system of expert evaluation of scientific projects funded by the Ministry of Education and Science of Ukraine and criteria for evaluating scientific projects;

- to grant HEIs the right to manage the funds received for performing research work directly through bank accounts, freeing them from limiting the distribution of funds by articles;

- to develop innovation infrastructure of academic entrepreneurship in HEIs, to further develop cooperation with the business environment;

- to develop partnership relations with leading foreign universities.

In addition, to further develop scientific research activities of HEIs, it is important to improve their planning, organization, motivation and control. These issues will be dealt with in future publications.

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