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PECULIARITIES OF HIGHER EDUCATIONAL ESTABLISHMENTS FUNDING ACCOUNTING: NATIONAL AND FOREIGN EXPERIENCE

Abstract. The article actualizes issues of funding for efficient scientific, research and development, educational activity during the reform period. The focus on integration of science and education, based on the education quality improvement, requires implementation of new models for the scientific and educational process funding. For the purpose of development of such models, we offer to compare foreign experience of leading educational institutions, represented by the Harvard University, and Taras Shevchenko National University of Kyiv. The majority of higher educational establishments in Ukraine are funded from the state budget within the governmental order. The money, provided to the educational institutions for the state-funded places, essentially form the universities profit. At the same time, the comparative analysis of the budgets of the leading world's university and a national institution of higher education with the privileged funding shows incomparable allocation of funds. The difference in the practice of planning, accounting, control and analysis of financial, informational and material flows generates principal distinctions in the obtained results. The problems of higher educational institutions' economy and management are directly related to financial assurance of the educational process. The models and approaches to funding higher educational establishments in the mode and forms they function now require reforming. It is suggested to apply financial levers due to their interconnection with the factors of efficiency, taken as a basis during the educational establishment's activity assessment. In terms of scope, there emerges a necessity for elaboration of higher educational institutions development strategy, focused on the needs of society and economy.

Keywords: scientific research funding, sources of funding, university, budgeting, endowment, funding model, higher educational establishment.

Literature review. Having reviewed the national and foreign sources that highlight the issue of higher educational establishments funding, we discovered an interesting trend of higher education funding description. When the scientists consider

the issue of the higher education funding, they normally focus on deepening the existing models, stressing on the budget foundation of funding.

Government agencies have slightly different approach to the issue of funding. Considering the financial aspect, they focus on the issues of education reform, de-centralization, the concept of the new Ukrainian school, including higher education school. Thus, after the round-table discussion of "Priority Directions of Activity in the Sphere of Education and Science", within the frames of considering the project of Middle-Term Plan of Priority Actions of the Government for 2017–2020, they took the decision to increase the budget funding of research activities with the aim to form a new research management and financing system and to create conditions for technological breakthrough [1].

In general, the issues of funding higher educational establishments were discussed in the works of the leading Ukrainian and foreign researchers and public officials, among them being G. Becker [2], L. Hrynevych, T. Boholib, V. Heyets and others.

Modern researchers emphasize the fact that the resource support from the government and private sector in conducting scientific research will allow increasing the rating of the national higher educational establishments, and this envisages implementation of the policy, which would stimulate research of the world level [3].

The objective is to study and compare financial support of research and educational activities of the leading Ukrainian and foreign higher educational institutions at the present stage.

Materials of research. The focus on improvement of the quality of education, declared

by the Cabinet of Ministers of Ukraine, implies integration of science and education, creation of technological science parks, transition to project-based financing of research [4]. Each of these components provides for securing appropriate financial instruments that ensure its implementation.

The state uses financial-credit and tax instruments to create the economically favorable conditions for effective carrying out scientific, research and development activities in accordance with the legislation of Ukraine; ensuring by 2025 the increase in science funding from all sources to 3 percent of gross domestic product – the figure determined by the Lisbon Strategy of the European Union [5]. The Law of Ukraine On Scientific, Research and Development Activities also provides for budget funding of the scientific, research and development activities in the amount of minimum 1.7 % of the GDP of Ukraine. The law defines the forms and methods of state regulation and management of scientific as well as research and development activities.

The dynamics of funding higher educational establishments in Ukraine has its regularities, caused, first of all, by the state's internal situation. We will focus on the public higher educational institutions as they make the basis of the higher education system in the country, and they altogether manage to perform the reasonable tasks they are set.

At present, Ukraine is trying to find the best model of financial support for the system of higher education, thus foreign experience of the world's leading higher educational institutions is very relevant.

According to the Times Higher Education World University Rankings (THE WUR), compiled annually since 2004, the 2016-2017 list of twenty world's best higher educational establishments includes 15 educational institutions from the USA. It should be mentioned that the ranking compilers focus specifically on the quality of the education received.

Rating of the world's universities, compiled each year, is based on 13 indicators reflecting the five pillars of universities: education (30 %), research work (30 %), quoting (30 %), internationalization (7.5 %), involvement funds from industry (2.5 %) [6].

The list of leaders permanently includes Harvard University – the most famous and prestigious US educational institution, whose history dates back to 1636. It is therefore appropriate to refer to the experience of building financial security schemes of the institution.

The components of financing received by Harvard University are as follows. The total annual income of the university is 3 billion USD, the largest source of financing being private donations (31 %), and students' tuition fees (minus scholarships and grants they received) constituting 21 %. The next important components of the university financing are the actual incomes from intellectual property and its business activities (20 %) ("Other incomes"), the incomes from state grants and contracts (17 %), gifts to university (about 7 %), the funds from non-governmental grants and contracts (4 %).

An important role in funding different university programs – both educational and scientific – is played by endowments that are donations made by various institutions and individuals for the university development purposes. The market cost of endowments, formalized as non-profit funds managed by Harvard University, is about 40 billion USD.

Given the available university budget, the expenses are allocated in the following way. From the overall amount of 3 billion USD, the biggest amount (26 %) is spent on financing the educational process. Second in priority are the expenses for scientific research funding (19 %); institutional expenses are third in importance (18 %); 12 % of funding is allotted for additional services maintenance; 12 % goes for the scientists support; maintenance of libraries takes 6 % of the budget; expenses for scholarships to students and scientists take 3 %, and the cost of student infrastructure support constitutes 3 % of the budget [7].

Distribution of incomes and expenses by items is provided in Table 1.

According to the results of the world QS Higher Education System Strength Rankings 2016, Ukraine occupies the 45th place among the countries with the best higher education system, having received 16.6 points out of 100 [8].

The ranking of the top world universities includes two Ukrainian higher educational establishments: Taras Shevchenko National University of Kyiv and V.N. Karazin Kharkiv National University. Funding of Taras Shevchenko National University of Kyiv is privileged. Thus this university financing can be taken as a model. Let us consider the items of income and expenses of Taras Shevchenko National University of Kyiv budget taking data of the 2016 financial year.

Table 1

Items of Income and Expenses of the Harvard University Budget

Items of income		Items of expense	
Item name	Amount, million USD	Item name	Amount, million USD
Private donations	930	Educational process	780
Students tuition fees	630	Scientific research	570
Intellectual property and business activities	600	Institutional expenses	540
Governmental grants and contracts	510	Additional services maintenance	360
Gifts to University	210	Support to scientists	360
Non-governmental grants and contracts	120	Maintenance of libraries	180
		Scholarships to students and scientists	90
		Support of student infrastructure	90
Total	3000		2970

According to official data, in 2016 the funding of Taras Shevchenko National University of Kyiv was 1,132.5 million UAH. Funding of the common fund constitutes 765.9 million UAH, or 67.6 %, and of the special fund – 366.6 million UAH, or 32.4 % of the overall funding.

The receipts from the State Budget of Ukraine (general fund), according to all the budget programs, were directed to payment of wages with benefits – 577.7 million UAH that is 75.4 %; payment for utility services – 15.67 million UAH that is 2.15 % of the total funding; payment of scholarships and other payments to people make 20.6 %, or 158.05 million UAH; business trip expenses constitute 280 thousand UAH (0.04 %); expenses of purchasing food products – 8.56 million UAH, or 1.1 %; use of goods and services – 3.3 million UAH (0.4 %); costs of purchasing equipment and products of long-term use – 2.27 million UAH (0.3 %); costs of arranging conferences – 70 thousand UAH (0.01 %).

In fact, in 2016 the receipts of the special fund by all the budget programs (educational and scientific activities, tuition in vocational schools and colleges) constituted 366.6 million UAH. Revenues to the special fund for training specialists were 344.1 million UAH. Incomes to

the special fund to the item “Research, scientific and R&D projects, scientific activities” were 18,531.0 thousand UAH. Receipts from funding grant agreements for the period amounted to 775.7 thousand UAH.

The money of the special fund from the incomings for training of specialists was directed to wages – 176.4 million UAH (59.74 %); utilities – 68.7 million UAH (23.3 %); food products – 16.2 million UAH (5.5 %); current repairs, capital repairs, reconstruction, construction – 4.6 million UAH (1.6 %); household goods, materials for current repair works – 5.07 million UAH (1.72 %); facilities, materials, equipment and inventory – 3.1 million UAH (1.05 %). Each of other expense items does not exceed 1 %.

The money of special fund, received for research, scientific and R&D projects in the amount of 12.95 million UAH, was spent on wages – 8.2 million UAH (63.3 %); purchase of materials – 0.6 million UAH (4.9 %); payment for utility services and energy supplies – 0.2 million UAH (1.7 %); payment for services of the associate contractors in research and development projects – 1.6 million UAH (12.1 %); taxes – 1.9 million UAH (15.1 %); equipment for research and development projects – 0.2 million UAH

(1.3 %); travel allowances – 0.05 million UAH (0.3 %); payment for services and participation in exhibitions and conferences – 0.2 million UAH (1.3 %) [9].

As it is obvious from the data provided, the system of funding and its spending is characterized

by the clearly defined trends stipulated, first of all, by the government regulation of the process.

The list of income and expense items according to the common and special fund of Taras Shevchenko National University of Kyiv is systematized in Table 2.

Table 2

Items of Income and Expense of the Budget of Taras Shevchenko National University of Kyiv in 2016

Items of income		Items of expense	
Item name	Amount, million UAH	Item name	Amount, million UAH
Total revenues in the common fund:	765.9	Expenses from the common fund:	765.9
		– wages	577.7
– training of specialists of the 3 rd –4 th level of accreditation	612.47	– utility services	15.67
– training of specialists of the 1 st –2 nd level of accreditation	19.48	– scholarships and other payments to people	158.05
– provision of general and enhanced education by boarding schools	16.49	– travel allowances	0.28
– research and R&D projects	74.91	– food products	8.56
– international research and development cooperation	0.07	– use of goods and services	3.3
		– purchase of equipment	2.27
		– holding conferences	0.07
Total revenues in the special fund:	366.6	Expenses from the special fund:	
		– wages	185.9
– training of specialists	344.1	– utility services	69.92
– doing research, scientific and R&D projects performed	18.53	– food products	17.5
– funding grant agreements	0.78	– current repairs, capital repairs	4.6
		– household goods, materials	5.07
		– equipment and inventory	3.1
		– taxes	1.9

Most revenues of the university’s special fund are received from training students – 67.8 % of the total amount. The receipts from research, scientific developments, and research and development projects, as well as scientific activities constitute 5.05 % of the total amount earned. The charitable contributions, grants, gifts, payment orders constitute 5 % of the total amount, and in

the consolidated budget of the institution this figure is about 1.5 %.

If we compare the same items of income and expense of the leading US university and the leading Ukrainian university, we can note the difference in the ideological and legislative foundations on which the budgets of these educational institutions are based. This

demonstrates the impossibility of direct borrowing or copying budgeting forms of domestic institutions of higher education from the experience of world leaders in higher education.

Since the main evaluation criteria are an international student and teacher mobility, the number of international scholarship programs, the level of research, contributions to innovation, citation of scientific articles, level of educational services, it is just in these areas that it is appropriate to concentrate when forming the budget, thereby stimulating the growth of these indicators due to financial reasons.

It should be mentioned that there are no financial factors of impact, directly stated in the list of ranking criteria, but they are implicitly present in every, if not most, of them. Thus, the criterion of "ratio of students and the number of faculties", which is assigned 20 % of the ranking factor, takes into account a measure of the number of teaching staff to the number of students. In the absence of an international standard, this index aims to identify universities that are able to provide training to small groups and a good level of personal control. [10]. It is clear that this factor is directly related to the salaries and the number of teaching staff.

The criterion of academic reputation, which takes 40 % of the ranking factor, is measured using a global survey, in which a group of scientists is asked to identify the educational institutions, where, in their opinion, the most productive work in their field is carried out. It is clear, that the work effectiveness is greatly dependent on ensuring adequate conditions for research, including material and technical base, assurance of mobility, and other factors that directly depend on funding.

Therefore, financial instruments are interrelated with the factors of effectiveness that are taken as a basis for evaluation of an educational institution. This suggests the need to build a model of financing that even with limited supportive environment would provide a maximum evaluation figure. However, the figure itself is not a goal but rather an indicator of success in progressive development, and sustainability of an educational institution in a competitive market.

At the stage of reforming higher education, there is proposed a new system of governance and financing of science that involves the formation of National Council of Science and Technology, National Research Foundation, the formation of the

legal framework for the establishment of state key laboratories and other innovations. The emphasis is on grant funding for research and developments.

Following the results of independent audit performed in 2016 by the experts from the EU in the framework of Horizon 2020 project, there were provided the recommendations, under which scientific and technological innovation system of Ukraine, the principles of its financing and activities need changes and the availability of sound development strategy; and science should focus on the needs of society and the economy [11].

Conclusions and perspectives for further research. The research presented in the article is a component of the comprehensive study on the issue of financing higher educational institutions of Ukraine, and displays the picture of financing at the samples of the leading national and foreign educational institutions. Increase of budget financing of scientific activities, declared by the government [12], provides for developing the relevant plan and determining time limits for bringing such financing to the statutory level. This proves that the research is topical as taking appropriate decisions implies performing relevant calculations, taking into account many factors of influence that, taken together, will ensure the efficiency of financial investments.

The development of the regulatory framework should take into account the effective factors able to bring Ukrainian universities in the category of leading internationally. Which programs exactly require priority funding should be determined by thorough research. The subject will be further developed in the subsequent publications.

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