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# **Features of Cost Accounting in Hungarian Public Higher Education Institutions: Trends of the Performance-based Development of Higher Education**

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The goal of our study is to present the legal environment regulating the accounting information system of the state budget sector, and the changes happened to it in the last couple of years. We pay special attention to the area of the first-cost calculation of higher education, its regulation, the important changes and the application (applicability) of first-cost calculation and its necessity inside this sector.

It can be stated that most empirical researches traditionally focus on products appearing in their classic materialized form and manufacturing companies while considerably less researches are about the first-cost calculation of the service activity. This statement is particularly true when the researches concerning first-cost calculation have the participants of the budget sector in the focus. The Hungarian economy's capacity, competitiveness and not in the least the rate of the overall social satisfaction remarkably depend on the capacity of the budget participants and the different institutions, the quality, effectiveness and efficiency of their operations. When knowing the first-cost the efficiency and the effectiveness of performing public duties can really be judged and measured.

Our target is to present and sum up the first-cost calculation practice of higher education institutions, and with the aims of sustainability and the Hungarian higher education strategy, to present the recommendations for further development systematically.

## *Introducing the legal environment*

### *Past*

The Act C of 2000 on Accounting (hereinafter AAcc) includes the state budget sector participants' obligation to make reports as well as an authorization to create government decrees, so to say the Government Decree 249/2000 on the Specialties of the general organizations reporting and public accounting rules (hereinafter the old PubAcc). According to the old PubAcc the state budget sector participants are obliged to keep a book of the equity in their property or management and the economic operations which shows the changes as for real and in a precise and up-to-date way. However, there is a specific regulation for their bookkeeping and reporting since they operate specifically, different from other economic participants.

Perfect information flow is necessary towards the state budget due to a proper accountability. Its income is not based on any performance output, and its financing is also peculiar. Buying resources has specific rules, the public procurement act, specific labour law regulations and payments do apply here (Serfőző, 2008).

Their bookkeeping is made with a modified accrual method meaning that besides accounting money incomes and expenses as estimates performance the changes in assets and liabilities are constantly recorded, and moreover they register the estimates of the performable approved expenses and the performable approved incomes and their changes in the closed system of the double-entry bookkeeping and that is why this makes a uniform whole (Szabó & Szamkó, 2004).

We can express as the main task of bookkeeping that the indication of estimates and settling the performances is obligatory based on both economic and functional classifications. The economic classification is listing the incomes and expenses of different types while the functional classification presents performances based on tasks in cash approach. In the first place the estimate accounts reflect the peculiarities of the sector's management and bookkeeping.

As opposed to the accounting of a manufacturing and trading business, expenses and incomes are recorded at the moment of their financial performing, as in cash approach, so some accounting principles (such as matching principle or the principle of accruals and deferrals) are broken in this approach.

### *Present and Future*

In the public sector's international accounting regulation, we most often meet the accrual based method (e.g. Finland, Sweden, France, and Switzerland). *"For years the European Commission and the OECD have encouraged and recommended the application of the accrual based accounting since that enhances the transparency of financial reports,*

*ensures accountability and builds a better and safer base for planning, taking incomes and reducing expenses among others and within to accomplish management goals.” (Bathó, 2012)*

Mainly due to pressure coming from the European Union, great changes occurred in the Hungarian state budget accounting resulting in a new Government Decree 4/2013 regulating the sector’s accounting (hereinafter PubAcc). Based on the PubAcc the state budget sector participants’ accounting information system became more complex because the principle of accrual base or realization in other words appeared in economic events bookkeeping. In the accrual accounting system the economic events are settled at the moment of the physical performance, so that of the event occurring.

The accrual base accounting settles the economic transactions at their occurrence and does not concentrate on coming in or paying out the amount just like in the case of cash based accounting. Thus thanks to the accrual based accounting, settling and enhancing transparency become available in financial reports made in the public sector, and better quality information can be reached for management and preparing political decisions. Since financial performance does not have to be waited, the book of accounts gives information sooner about the activity costs, the resources used, and also there is a chance for comparing the performances of certain periods of time. The matching principle enforced ensures that with the application of the principle of accruals and deferrals (Bathó, 2012). Applying the accrual based principle within the profit sector participants the cost (expense) and the income, and consequently the performance become observable, measurable and recorded. As a matter fact the first-cost can only be interpreted and calculated accurately in this accounting information system.

Besides the accrual based accounting, of course, the so-called budget accounting based on modified cash bases continue to be apparent because the aggregated central budget of the state budget is made in cash approach which further needs to know money incomes and expenses. Eventually the institutions in the sector record the economical events in both cash and accrual based accounting according to the new PubAcc so this kind of accounting is not only double entry but also double double-entry. With the appearance of accrual basis, the activity of bookkeeping and the whole accounting information system itself are more complex as opposed to the former system since bookkeeping is multiplied by separating and recording the estimates as original, finalized and performed. The circumstance which made this switch much harder was that the sector suffered a shortage of labour with relevant qualifications and professional experience and has been suffering until these days.

The new bookkeeping defined by the new PubAcc is further hardened by the fact that the classification of the public sector institutions’ activities as well as the rules how to use the classification. The basic activities are classified by government functions instead of the formerly used state budget tasks. The international Classification of Functions of Government (COFOG) contains the appropriate government functions (in 10 main

divisions) which mainly includes the broad objectives accomplished and supported.

Besides the classification of government functions the classification of special tasks can present the first-cost of the activities done in each area. It should be highlighted that special tasks are representing significantly smaller set of activities than government functions.

Concerning the creation of the new state budget accounting system the functional and the activity-based classifications differ. *According to the regulations of the new PubAcc in budget accounting expenses and incomes should be presented and classified by government functions in the report while in financial accounting the costs and accrual based incomes of the special tasks (activities) should be presented whose first-cost statement has no essential information.* Those activities or sub-activities are in the latter group, and are defined by Annex 2 or 4 of the Decree of the Minister for National Economy No 68/2013 (XII. 29.) on the classification of government functions, state budget special tasks and divisions.

### *First-cost calculation and its regulation inside the institution*

According to the AAcc concerning state budget sector the institution should fix in the accounting policy the accounting principles, regulations, the accounting system applied by the institution such as mid-term and year-end evaluation methods concerning the application of both budget and financial accounting. According to Section 14 (5) of the AAcc it should make in the accounting policy:

- a) the regulation of ledger and making ledger of assets and sources;
- b) the evaluation regulation of assets and sources;
- c) *the in-house regulation of first-cost calculation;*
- d) the regulation of cash management.

This act is modified by Section 50 (3) of the PubAcc as follows. The in-house regulation of first-cost calculation *should be made in case of selling products or providing services regularly* including selling products and providing services tax-free or producing own assets.

The law-maker pays special attention to the first-cost calculation of higher education sector participants since based on the new PubAcc the in-house regulation of the state financed higher education institution's first-cost calculation should state about separating the costs of the education activity, the research activity, healing and protection, and other activities.

In the course of determining the first-cost of the education activity the amount of the first-cost per student should be given for majors, training levels and shifts in each term.

*Under the terms of the new PubAcc there should be defined in the accounting policy the method of classifying the general costs, the general*

*expenses and incomes for the activities, the indicators applied for this purpose and the bases.*

The necessity of first-cost calculation and first-cost determination was drawn back by the Government Decree published at the end of year 2016 but applies from January 2017. According to the government decree in the subheading 13 of the PubAcc invalidated "the statement of costs and costs returned". The statement of the costs and the costs returned emerged from the report, this statement contained separated for special tasks the costs, the net accrual based incomes of selling assets and services, the accrual based incomes of other supports used for operation and the accrual based incomes of supports used for accumulation. In this statement the direct first-cost per unit of task indicators and performance indicators were determined in case of special tasks, and separately the returned and non-returned direct first-cost separately in case of individual special tasks.

These items of information are proved to be beneficial data in the course of evaluating the individual special tasks. This legal change projects that the expense and cost calculations for the government functions in the accounting information system of the institutions financed by the central budget as cost-bearers will gradually take over the scope in observation and records from the special tasks. However, the current regulation is mixed and somewhere non-consistent with regarding to the legal presence of the government functions and the special tasks together.

### *First-cost calculation of state-financed higher education institutions*

Known from cost calculation practice first-costs with different contents exist apart from the first-cost contents laid in Section 51 of the AAcc. Our proposition can be interpreted in a way that the amount of first-cost is influenced by the fact that besides direct costs which indirect costs are allocated to the cost-bearer, how much, what ratio and with which sharing methods. The contents of the first-cost should be created adjusted to the information needs of different decision-making situations meaning that always the costs relevant for the given decision have to appear in the cost calculation process. In case of a pricing question or an efficiency calculation it is essential to know the total first-cost of the product or service, and at the same time for the sake of presenting the own performances in a statement the precise calculation of the calculated direct first-cost should be performed.<sup>1</sup>

In making first-cost calculation regulation the institutions define the costs related to selling products and services in a separate regulation. Direct costs are defined individually, and the classification method of the indirect costs

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<sup>1</sup> We do not present the contents of different first-cost categories in our study, but for more details you can turn to the work of Kardos et al. (2016) for instance.

is determined (typically traditional first-cost calculation methods with the help of a well-defined base).

In the course of regulating the first-cost calculation it should be ensured that according to Section 50 (5) of the PubAcc the amount of the first-cost per student should be given for majors, training levels and shifts in each term with which direct and indirect costs (total cost) concerning trainings and the cost of any other non-educational activity as basic activity, and any other item reducing the performance as expense during the operation can possibly be financed.

The goal of the first-cost calculation regulation is to determine the accounting of the budget expenses as government functions and the methodology of separating the general expenses according to the decree of the Minister for National Economy and fitting the budget accounting.

When defining the first-cost the direct costs and the costs classified and referred to as indirect costs in the settling should be given in figures.

In the wide range of institutional management such costs can appear which cause a great problem in dividing among the activities related. Setting up a proper base and their fair division among the activities basically determine the applicability of efficiency indicators. The traditional cost calculation systems the general costs are usually assigned to the products with the help of certain base proportional to the amount manufactured. However, a question may be raised here namely in case of defining the services' the first-cost what base should be useful in dividing the general costs besides the definition of the direct costs and giving them as figures.

Methodologically speaking it is worth considering the type of the task to be done and its cost structure. Beyond the traditional first-cost calculation methods popular in the manufacturing sector the international researches (e.g. Terzioglu & Chan, 2013) concerning the issue recommend several activity-based methods (Activity-Based Costing as ABC and Time-Driven Activity-Based Costing as TDABC).

### *The trends of performance-related higher education development in terms of the Hungarian higher education strategy*

After the economic and social regime change of the 1990s the Hungarian higher education went through several transformations and reorganizations. Until now the main higher education reform, the transformation of the higher education financing system, the restructuring of the institutional background took place. There is a clear-cut commitment outlined towards a performance and quality oriented Hungarian higher education system supporting value-making, being capable of reacting to the world's globalization and social challenges, considering the generation characters and attitudes in higher education and becoming more international.

Today in Hungary competition, quality, performance and success are proved to be the keywords of the 21st century higher education strategy whose accomplishment is a complex and a long process, but the forecasts say that this strategic objective can be fulfilled by 2030.

Year 2016 was basically determined by the goals and interventions to manage and control the institutions. The maintenance focused on to reach the strategic goals which ensured the direct control of the institutions' activities (Berács et al., 2017). The specific accomplishment steps of the quality and performance related strategic developments are missing up until now. The strategic goal determined by the government is to strengthen the sector development via the higher education training which means in practice that by narrowing down the currently fragmented training range of the training institutions they should concentrate on strengthening the specific training branch or training area. The direct goal here is that by turning down the competitive situation among the institution the competition between the training areas should be enforced and indirectly enhancing the quality standard of education in specific training areas. *Ab ovo* not the educational institutions should compete but the institutions providing special training areas should be competitors of one another.

As a result, the institutions providing special training areas can become and develop as real competitors in the international higher education market, and the whole branch can develop as well. The other key of the quality development is to strengthen the co-operation and task-sharing between the institutions. The accomplishment of both is being awaited when drastically appear the education institution specialties such as Universities providing theoretical-academic training, the Universities of Applied Sciences providing practice-oriented training and institutions specialized for dual training. Besides the competition between the training areas social challenges and constantly renewing standards ought to be highlighted. Institutions matching the social-economic-generation challenges are needed with a training portfolio specialized for a certain training area, just for short, higher education institutions with performance-related operations should be created at last. In an institution with performance-related operations all the actors so to say the students, instructors, managers are motivated in developing the performance. The essential condition of this is to create a consistent system of performance criteria and indicators measuring performance matching the social and institutional expectations, even in a form of a specific institutional performance regulation, and its regular communication towards the stakeholders. Measuring performance proves to be a very important research area in scientific researches; we can see ambitions for measuring performance in case of corporate performance, even a national economy or an individual's performance. Higher education performance can be characterized at macro level by the ratio of graduates in the population, the rate of drop-outs, the average period of studies, the return of the sources invested into education. PISA surveys published by the OECD can give interesting picture of factors influencing performance (OECD, 2014; 2015).

In our study we are dealing with the role of higher education first-cost calculation which is capable of supporting the performance-related higher education system. The financing system offers the connection. Financing higher education can be done by institutional contract type, input-based (e.g. the number of applicants) or output-based (e.g. the number of graduates) financing models. It is an expectation for the higher education institutions in their basic activity of education and research to rely more on their own incomes and external market sources so their dependence on the existing budget sources may be reduced by stabilizing the external sources of incomes. In order to reach this goal, in Hungary a task-based budget planning and management system was introduced in 2016 which can put the real costs of performing public tasks 'expected' from the institutions on transparent basis, their financing, clearly separated from the business or entrepreneurial activities. But what kind of first-cost calculation system or methods are worth creating and applying in the sector of higher education which also can support the performance-based financing?

Based on the Hungarian higher education strategic goals such a regulation and management environment should be made in which stabilizing the institutions' operations and management, reducing their dependence on state and community sources, and creating the conditions necessary to introduce new business models are all available. For this purpose, the following could be considered:

- a) The *uniform first-cost calculation methodology defining the recognized costs* should be organized so as to encourage reducing the operation expenses and making the whole management more efficient.
- b) *A system based on real training costs instead of traditional norms should be introduced.* The way financing is connected to the tasks cannot be followed. Differentiated financing is needed which is backed up by *real first-cost calculation*.
- c) The requirement system of the project-based financing elements should be defined so as that should improve the institution's capability of taking in the sources on the long run.
- d) The regulation environment concerning the institutional management, property management should be made in a way that the institution should be responsible of increasing the ratio of its own incomes and having an efficient management system.

## *Conclusion*

In our study we briefly outlined the first-cost calculation rules available and applied in the higher education sector as for Hungary. Based on the present situation we can say that specific first-cost calculation principles regulating the sector's first-cost calculation, first-cost calculation methods and principles concerning the division of indirect costs are missing. Lacking all of these the first-cost calculation of the higher education institutions

operating in Hungary is based on the calculation system, methods, calculation items and scheme used and formalized in the entrepreneurial sector which cannot serve the financing system establishing a task and performance related budget planning.

In our opinion the goal of specific financing training connected to the higher education strategy to create a stable and reliable task and performance based system capable of being adjusted to the labor market requirements and the existing budget sources, based on real approved first-cost which can contribute to the creation of a performance-related higher education sector.

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