

# PERFORMANCE FUNDING – A NECESSARY CHANGE IN THE ROMANIAN FINANCING SYSTEM OF HIGHER EDUCATION

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## Abstract.

*The financing system of higher education is a relevant tool in order to achieve the objectives of Europe 2020 strategy related to increasing the number of university graduates while ensuring the quality of the educational activities. The accessibility rules to financial resources determine the efficiency of the higher education institutions and, ultimately, the social and economic performance of a country. There is an evident trend at the European level to finance the performance of the universities, not their mere existence in the educational environment. However, Romania did not actually initiate such approaches in financing public higher education, which is why the negative aspects that characterize the tertiary education system are becoming clearer. This paper highlights the negative issues which characterize the Romanian financing system of higher education, compared with current trends related to the modernization of financing system of higher education.*

**Keywords:** *higher education, financing systems, performance*

**JEL Classification:** I22

## Introduction

The interest for higher education in Europe is manifested, on the one hand through the increasing number of diverse population of students and, on the other hand, through the need of the governments to create the conditions to offer such services. Obviously, there is a need to supplement funding for educational services, in order to sustain the massification of higher education. Governments need to allocate financial resources to support universities, but, at the same time, they have to protect the social equity and the quality of the educational processes.

To meet this challenges, many European States have made changes in their traditional systems of higher education funding. These changes are based on the fact that the market economy mechanisms were introduced in the educational policy. Through various financial resources allocation mechanisms, states try to raise the performance of the higher education systems. Diverse financing schemes based on funding formula, performance contracts, negotiation, projects, targeted funding, financing of the service receiver, are used in various proportions and combinations across the Europe. Among them, stands out, as the main way for the financial resource allocation, formula-based block grants. This means the utilization of a mathematical representation to determine the amount of the financial resources that an institution deserves as a whole or for a program at the institution. In these mathematical representations either input indicators or output indicators can prevail.

EU recommends the development of higher education funding mechanisms to encourage performance - in the Conclusions of the Council of the EU (28-29 November 2011) it states the need to “encourage more flexible governance and funding systems in higher education institutions, including mechanisms linked to performance and competition”. As a consequence of such recommendations and because the public financial resources are not as generous as they were in the past, many European countries make efforts to link public funding of the universities with the performances that they are able to prove. Therefore, the current trend regarding the modernization of higher education funding is performance-based orientation

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funding, which aims to not finance the simple enrollments raising but the students' graduation with the skills expected in the nowadays society.

Unfortunately, Romania has not made clear efforts to use financing systems as tools to increase the relevance of the services offered by the universities. Romanian higher education financing system is characterized by the allocation of public funds to support the mere existence of the universities and not their ability to provide to the society the specialists it needs. Hence, the efficiency and quality in the Romanian higher education are problems that are far from being resolved.

The objective of the paper is to present the characteristics of the way in which the Romanian higher education system is financed compared with the performance-based funding principles and with the features of the funds allocation in other European countries, in order to understand one of the causes that determine the problems of the Romanian higher education system and to identify practical solutions to improve the financial resources allocation mechanisms to sustain higher education.

## 1. Performance-based funding of the European higher education systems

### 1.1. The performance financing concept in higher education

Due to the multiple implications and to the multifaceted nature of the activities conducted in higher education institutions, it is a challenge to define performance of the universities. Higher education comprises three main orientations: teaching, researching and transfer/exchange of knowledge. Also, the results of the educational processes can be determined at individual or global level, both short term and long term. So, to ensure a complete tackle of the performance issue in higher education, it needs to include all types and levels of results.

According with literature (Aubyn, 2009; Lesyak & Marjeta, 2011) the performance issues in higher education are approached from the perspective of the efficiency as well as of the effectiveness of the use of public funds. Efficiency is about ensuring an optimal rate between inputs (financial resources for personnel costs, material costs, expenditures to support educational projects and human resources development etc. necessary to sustain the educational processes for a certain number of students) and outputs (the immediate results of the educational process. Effectiveness is about achieving long term objectives of the educational process (employability and labour productivity), which have impact on the economic and social development. Thus, performance in higher education is achieved when the funds used to finance educational processes result in appropriate outcomes and outputs. Schematically, this relationship is represented in Figure 1:

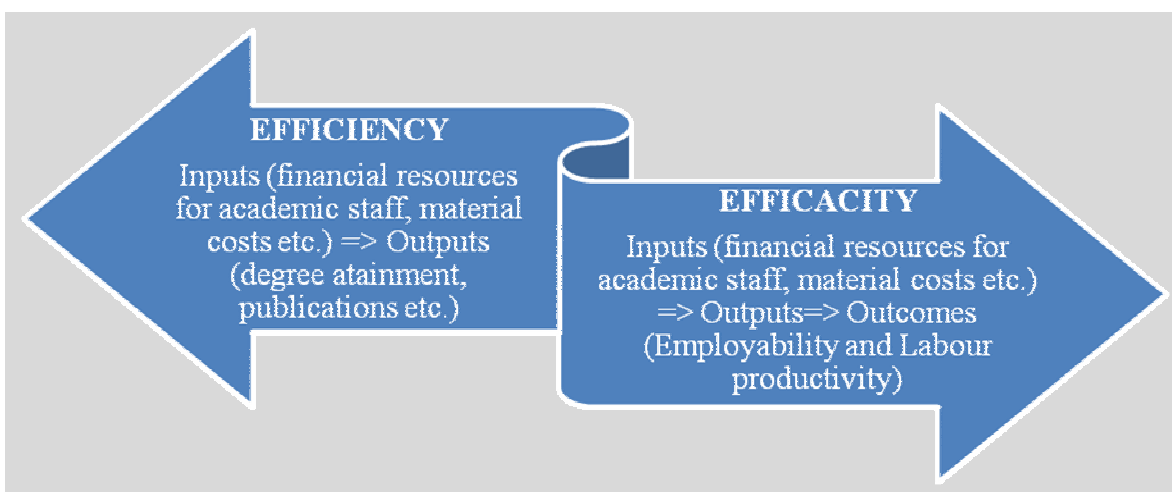


Figure 1. The components of performance in higher education

Source: Development proposed by the authors

The concept of performance funding involves allocating money mainly correlated with aspects that define performance (outputs and outcomes) and not correlated with inputs. Also, performance-based funding is not synonymous with the use of a formula to determine the amount of financial resources to be allocated to higher education institutions but concerns criteria composing the formula. Newer models of performance – based formulas include indicators for measuring progress such as course completion, students who passed a year of studies and credit attainment, not just indicators to assess results.

## 1.2. Types of indicators used in the financing formulas

Formulas to calculate the appropriate financial allocations for universities were used since 1990s (1993 – Denmark, Deutschland; 1994 – Italy, Portugal, Sweden) and today most countries, including Romania, use formulas to determine the financial resources for the universities. There are countries which use them alone or together with other funding mechanisms, such as: allocation of block-grants through performance contracts (Austria, Germany, Finland, France, Ireland, Italy, Latvia (for teaching funds), Netherlands, UK – England); allocation of block-grants through negotiation/on historical basis (Switzerland, Estonia, France, Norway, Italy, Poland, Sweden Denmark, Estonia, Netherlands, Hungary). (Clayes-Kulik & Esterman, 2015). It is obvious that European higher education systems are becoming increasingly market-oriented, deregulated, liberalised and privatised (OECD, 2010).

Regarding the formulas to determine funds allocation, the analyzes point out that most European countries allocate a portion of public funds based on performance criteria, but the importance of performance criteria differ from one system to another. An European Commission study – *Efficiency and effectiveness of public expenditure on tertiary education in the EU* highlights characteristics of the higher education funding formulas used in the European, as it is presented in Table 1:

**Table 1. Types of indicators used in European funding formulas for higher education**

<b>Characteristics of funds allocation formulas for public higher education</b>	<b>Countries</b>
Output based formulas	Danemark, Luxembourg, Netherlands
Input based formulas	Bulgaria, Czech Republic, Ireland, Greece, France, Cyprus, Malta, Poland, Portugal, Romania, UK
Balanced formulas	Deutschland, Estonia, Italy, Latvia, Austria, Slovenia, Slovakia, Finland, Sweden

Source: Processed data from *Efficiency and effectiveness of public expenditure on tertiary education in the EU* study

*Input-based formulas* correlate financing with quantitative elements that define the work in a university, as a rule, *overall number of staff or students*. Their main limit is that encourage enrollments without following the educational process to finality.

*Output-based formulas* correlate financing with performance criteria which reveal the purpose of the educational process, such as *overall number of graduates, number of repeaters* etc. These formulas can also have undesirable effects arising from concentrating on achieving results without paying attention to quality, respectively to the way in which the results are achieved.

As shown in Table 1, Romania is part of a group of countries in which allocation of the financial resources for higher education is primarily determined by the input indicators. Although Romania is not alone in this group of countries, fact which could be interpreted

as a proof of appurtenance to an European average, certain characteristics of the Romanian financing system of higher education, must be analyzed carefully:

- 72% of funds are allocated based on quantitative criteria, among them the most relevant being *number of students*.
- Number of students in the university is not correlated with the labor market expectations but with the tuition capacity and management's proposals.
- Although the Education Act 2011 requires that additional funding to be made on the basis of qualitative indicators until the present, National Council for Higher Education Funding decided that additional funding should not be allocated on the basis of qualitative indices but, according with a hierarchy of universities built in 2011, which was valid until the academic year 2014-2015. Moreover, all public universities, regardless the hierarchy, receive a share of the additional funding.
- There is no an obvious concern for the evolution and modernization of the higher education funding systems, unlike countries such as United Kingdom or Czech Republic;
- Decreasing in the number of students which caused a surplus of workforce in the universities, had not as consequence organizational restructuring but financial intervention of the government in order to maintain these universities in the educational environment, through allocation of funds for special situations. Moreover, although the funds for special situations are designed to overcome a "special" situation, they are allocated to certain universities for several consecutive years.

Given the fact that studies on the effectiveness of higher education prove that effectiveness is "not where more resources are spent on higher education. It is efficient spending that matters" (St Aubyn et al., 2009), performance orientation of the financing systems of higher education becomes an obligation in the current financial stringency.

### **1.3. Advantages and limits of the performance based funding**

Performance based funding usually generates the following positive consequences:

- *Increasing the completion rate and the quality of the educational services* – by using indicators such as *number of graduates* to calculate the financial resources allocated to the universities, higher education institutions are determined to focus not only on enrolments but on the end product of the teaching and learning process and also on the quality of the educational process, in order to create conditions to graduate for a large number of those enrolled in university. Utilization of the similar input indicator, *number of students enrolled*, focuses the attention on the beginning of the educational process without leading universities to keep students enrolled for as long as possible.
- *Research improvement* - introduction into formulas of the indicators which measure the results of the researching activities (bibliometric criteria, external funding obtained etc.) will motivate the dissemination of the research results and the increase of the partnerships between universities and business and industry partners. This increases the relevance of the research conducted within higher education institutions.
- *Improvement of the managerial performance and of the institutional autonomy* - this effect is particularly evident when allocation is based on performance contracts. This involves a negotiation between representatives of higher education institutions and ministries to establish a series of indicators of educational policy to whose achievement, universities must participate in order to obtain funds.
- *Increasing the efficiency of the public funds* – using performance indicators to fund universities ensure greater transparency in the use of public funds, public authorities being able to highlight the directions to which the financial allocations were directed. Also, it

reduces conflicts arising from confusing reasons for which money were allocated to certain universities over others and streamlines the use of public funds.

Of course, performance-based financing has certain limitations such as:

- *Decreasing the educational quality* – when *number of graduates* influence funding allocated to the universities, the institutions might be tempted to reduce the quality of education and skills expectations of future graduates to facilitate the completion for a large number of students.

- *The inequity of funding allocation* - in cases where research results are used to calculate financial resources for the universities, can occur inequities between higher education institutions, those lacking own resources to be invested in research in order to obtain performance being overshadowed. Likewise, using as an indicator *the number of partnerships with external environment* may favor study programs where is easy to carry out applied research.

- *Excessive focus of the academics on the research to the detriment of the teaching activities* - bibliometric criteria to determine the level of funding may pressure academics to publish to the detriment of the teaching activities.

- *Limitation of cooperation between universities* - public funds are limited which makes the high performance achieved by a university to decrease funding allocated to others. Acting in a highly competitive environment, institutions are no longer encouraged to cooperate.

Noting the advantages and limitations of performance-based funding can be concluded that the development of balanced formulas to transform using of public funds into tools to encourage higher education performance, is a difficult process. In Europe, the Danish taximeter system is considered to be the most performance oriented financing system of higher education. But, European states may apply the US experience where performance-based funding constantly evolves and improves.

## **2. European experience on indicators for measuring the performance of higher education**

As presented before, to develop a funding formula for higher education which can contribute to the achievement of the purpose for which it was created, namely to ensure efficiency and effectiveness of the educational process, ensuring, in the same time, equity in the distribution of public funds between universities and fields of study, is a difficult process. Such formulas must meet several requirements: easy to understand, adaptable, responsive to institutional and social changes, based on verifiable data, balanced, equitable etc.

As regards formulas used by the European states to determine the level of public funding for universities, a study presented at *National Rector's Conference of 21 systems - 2015*, reveals the following:

- Input indicators are most commonly used;
- Most formulas include a combination of input- and output-related indicators;
- The most commonly used indicator is an input one - *no. of BA / MA* - countries that do not use this indicator are Denmark, Finland, Iceland, UK-England. The corresponding output-oriented indicator - *no. of students BA / MA degrees* – is less used;
- The most used output indicator for measuring the relevance of the research is *doctoral degrees obtained*;
- At least used indicator is an output one - *national/international rankings* – just France and Hungary use it;
- The *graduate employment rate* indicator is used in the formulas from Czech Republic, Finland, Hungary, Lithuania, Portugal, Slovakia;
- *Added-value of a diploma* indicator is used by a single country, France;

- *Diversity related* indicators to encourage the students which face barriers to completion, are used just in Germany, Spain and Portugal;

- Indicators mainly cover three areas: Teaching (BA / MA students, ECTS attained, BA / MA Graduates, graduate employment rates etc.); Researching (doctoral students, doctoral degrees, patent application etc.); Other (staff, floor space, review of strategic complained of Universities etc.)

Regarding the structure and the nature of indicators for performance measurement included in the calculation formulas of the financial resources for universities, the authors appreciate that they have to aim possible determinants of performance in higher education, as presented during paper:

- Indicators to measure outputs, such as indicators to measure teaching and researching performance;

- Indicators to measure outcomes, such as indicators to measure employability level of the graduates and labour productivity of the graduates

Subsequently, the selection of the indicators is based on their relevance to educational performance, as well as on the availability of reliable data and the extent to which the indicators can be quantified.

Literature presents various proposals relating to performance measurement indicators that can be used in the formulas for calculation of financial resources for higher education institutions. Agasisti and Johnes (2007) use as indicators to measure results *the number of graduates and the total amount of external grants and contracts for research*. In the same study, in order to evaluate outcomes there are used *employment rates of graduates and the percentage of foreign students*. Other studies that use *the number of graduations* as a measure of outcome are Abbott and Doucouliagos (2003), Flegg et al. (2004), Warning (2004). As regarding the indicators for measuring performance in teaching, there are some controversy (since not always the proposed indicators reflect the true performance of higher education institutions) but, in terms of the indicators for measuring research performance, usually there are used the next: number of patents obtained, publications and citations, government or external research finance attracted by a university.

Specifically, the practice of the countries that have shown interest in funding higher education institutions based on performance, allows emphasizing the use of the following indicators, according with OECD *Study on Performance-based funding for public research in tertiary education institutions*:

➤ *Austria*

- Indicators in the teaching area: Percentage of graduates that finished within their designated years of study ; Percentage of regular students that graduate;

- Indicators in the research area: number of PhD graduates, External funding for research;

- Indicators in the social area: Number of regular students that take part in mobility programmes; Number of female PhD graduates.

➤ *Denmark* – More than half the amount allocated to an university (55%) is determined based on indicators of outputs: external research funding (20%), number of PhD graduates (10%), bibliometric research indicator (25%).

➤ *Finland* – 75% of core funding for the universities is related to education and research and 25% is related on other education and science policy considerations. Within the core funding, 34% of the amount allocated is determined by performance indicators, such as: nationally competing research funding, scientific publications, internationalisation of research.

➤ *Germany* – performance indicators assess teaching, researching equality and/or internationalization. Among the indicators used are: number of doctorates, amount of third

party funding, publications by impact factor, participation in excellence clusters and research centres,

➤ *Norway* – core funding is both for public universities and private universities, according to the following categories of performance indicators: publication points (30%); Funds from the EU Framework Programme for research (20%); funds from the Research Council of Norway (20%); number of doctoral degrees awarded (30%).

➤ *United Kingdom* – performance assessment is related to research, using indicators such as: charity income; volume of business research (income); and volume of postgraduate research supervision.

Analyzing the indicators used in the different funding systems, the authors conclude, on the one hand, that there is a frequently use of some of them and, on the other hand, there is no a common fact to use indicators to measure long-term effects of the educational process.

As regarding the most used performance indicator, *number of graduates*, stirs up controversies. Thus, one of the problem is the extent to which universities should be penalized if the part of the students decide to leave the course at a time, for example, to engage or to transfer to other universities. At the same time, there may be some impediments affecting the ability of students to graduate (financial issues, social issues etc.) which can not be attributed to the universities. The method of calculating indicators related to graduation is also a matter of controversy: number of graduates is an indicator of whose increasing does not necessary sustains the increasing of the graduation rate.

Outcomes measurement is also a controversial process. For example, *employability rate* is an indicator on which it is difficult to determine to what extent depends on the competencies developed during the years of study or to what extent depends on the economic environments, on the local economy, on the social aspects and so on.

With all the limits and controversies they generate, the performance indicators should represent a relevant share of the calculation formulas used to determine the financial allocations to universities. Summarizing, we consider the following issues to be debated about the relationship between funding and performance of higher education institutions:

- Ensure a balance between the input and the output indicators;
- Identifying those indicators which cover all the activities developed by the higher education institutions;
- Assessment of both efficiency and effectiveness of the educational activities;
- Weighting of different indicators depending on the nature of the university and / or study programs

### **Conclusions**

This paper aims to highlight the importance of measuring performance before deciding the volume of financial resources allocated to the universities. The authors consider that financing of higher education has to evolve from a simple tool to allocate financial resources to universities and students to a tool through which public authorities can sustain the maximization of the desired goals of higher education. Therefore, we presented and analyzed different ways of conceiving European financing formulas for higher education in order to highlight the trends in their modernization.

As regarding the Romanian funding system, its features allow to characterize it as a centralized system, because government intervenes with financial support, whenever it needs. Moreover, it is an input oriented system of financing as long as about 72% of funds are allocated based on input criteria.

The authors appreciate that improvement of the method of allocation of financial resources for the Romanian higher education institutions can be an important step towards placing the Romanian tertiary education among those who are valued and recognized across Europe.

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