Ka održivom i jednakopravnom finansiranju *visokog obrazovanja* u Bosni i Hercegovini, Crnoj Gori i Srbiji

Towards Sustainable and Equitable Financing of Higher Education in Bosnia and Herzegovina, Montenegro and Serbia

WP4. FINANCING AND EQUITY POLICY FRAMEWORK

Report from the Working Group in Serbia

Contents

Part I INTRODUCTION

I. 1. Context

The question of higher education financing is one of the most discussed questions in higher education policy. Modern interpretation of institutional autonomy states that internal organization of a university is not governed by state regulations, and neither are the type of university government, internal management of financial resources, type of income generation from different sources (except state ones), staff employment and study conditions, as well as the freedom of scientific research and teaching. In other words, the idea of institutional autonomy allows higher education institution self-government without external interventions.

However, in reality, no higher education system is isolated from external influences. It is, actually, a dynamic process between the university, state and society. "*Higher education institutions will always be required to be responsible to the public, regardless of whether they themselves are public or private. The society has too many interests in higher education to allow 'pure' autonomy (which has, most probably, always been a myth) to prevail"* Meek (2003). Most universities in European countries ground their stands on financial autonomy. Financial autonomy refers to a university's ability to decide freely on its internal financial affairs. The ability to manage its funds independently enables an institution to set and realize its strategic aims[1].

Financial sustainability, increased autonomy, appropriate governing structures and strong management and leadership capacities are key elements in order for universities to fulfill their multiple missions and respond to the current challenges in an increasingly complex and global environment.[2] One of the key aspects of institutional autonomy is the autonomy of financial transactions. However, there is the question of compared to whom should higher education institutions be autonomous and in which domain.

Demands for diversification of public higher education institutions' financing sources have often been exposed to public discussion in the previous period. The financing mechanisms that were based on analysis of output parameters were most often the topic of the discussions. Limited financing sources from the public sector on one side, and the needs for higher investments into higher education, on the other, brought the urge to find new sources for higher education funding. Diversification of financing sources and decrease of government share in financing would often start a discussion on what makes a higher education institution *public*. Is it the financing, governing structure, proclaimed mission or something else?

As participation of private sector contribution to higher education institutions' budget increases, both budget structure and financing model change as well. Still, the highest share of

[1] http://www.university-autonomy.eu/dimensions/financial/ (May, 2015)
[2] http://www.eua.be/eua-work-and-policy-area/governance-autonomy-and-funding.aspx (June, 2015)

financing sources in Serbia is primarily from the state budget at public higher education institutions, even though, at international level, that type of funding is noticeably decreasing. The funds from a state budget awarded to higher education institutions are mostly for the expenses of teaching and research, so these two items are separated in the budget. Research funds are most often competitive and focused on results, unlike the funds for education. The funds awarded for teaching mostly aim to cover a part of teaching staff salaries, a part of maintenance and improvement of teaching infrastructure and equipment, as well as general organizational expenses that are not directly connected to teaching (administrative staff salaries, building maintenance costs, and the like).

Another higher education financing source is tuition fee. At universities in the Western Balkan countries it is usual that a number of students are financed by the government and the rest pay the tuition themselves. Exceptions are faculties that enroll all interested students at the budget expense, when it comes to scarce skills. The criteria that determine who should pay tuition, as well as the amount of tuition, vary from country to country. Another source of financing is cooperation with the economic sector. This type of cooperation is realized through consulting or research contracts that support commercial, ecological, educational or social programs organized by the government, local government or companies.

When it comes to higher education financing from students' perspective, it is necessary to consider students' income and expenses. Students' income in most cases includes:

- own income (if the student is employed during studies, full or part time),
- parental support (accommodation, food or cash) and
- student scholarships and/or loans and/or rewards (from public or private sources).

Some types of indirect help can be included in students' income, such as food, health insurance, transportation or accommodation subsidies and tax relief.

Employed students work to supplement their own income. That, as a rule, implies some effects that are not desirable, such as longer time of study or abandonment of study. When we talk about parent help, there are noticeable cultural and social differences among European countries. While in Scandinavian countries students are considered independent from their parents and receive the same amount of money regardless of their socio-economic status, in the Western Balkan countries, parents are expected to help their children during studies. Loans and scholarships awarded to students in, for example, the Western Balkan countries, are awarded to a limited number of students and most often based on their average grades. That means that a student's socio-economic status has minor influence on their eligibility to receive a loan or a scholarship. The same criteria apply to the division of students into 'budget' and 'self-financing'.

I. 2. Composition of the Working Group

After the consultations of the Coordinator with project partners in Serbia in December 2014, the Working Group consisted of the following representatives, who took active role in working activities and, later, in the writing of the Report.

The Ministry of Education, Science and Technological Development (MoESTD)	Ph.D. ***Zorana Luzanin***, Secretary of State for Education, Science and Technological Development at the Ministy
	Ph.D. ***Milovan Suvakov***, Counselor at the Ministry of Education, Science and Technological Development
University of Belgrade	Ph.D. ***Miodrag Popovic***, Vice-Rector for Finances and Organization of University
	Ph.D. ***Nevenka Zarkic Joksimovic***, Project Coordinator
	Ph.D. ***Milan Martic***, Dean at the Faculty of Organizational Sciences
	Ph.D. ***Sladjana Benkovic***, Deputy Project Coordinator
University of Novi Sad	Ph.D. ***Radovan Pejanovic***, Rector of the University
	Dragana Vujovic, Secretary General of the University
	Gordana Kazic, Chief of Finance and Accounting Department
Centre for Education Policies	***Ph.D. Srbijanka Turajlic,*** Member of Center for Educational Policies board
	Jasminka Cekic Markovic, Director of the Center for Educational Policies
	Ivana Zivadinovic, Researcher at the Center for Educational Policies
Singidunum University	Ph.D. ***Mihajlo Babin***, Assistant professor at the Faculty of Economics, Finance and Administration
SCONUS	***Petar Debelnogic***, General Secretary of SCONUS

I. 3. Report goal and structure

Higher education system of the Republic of Serbia is regulated by the Constitution of the Republic of Serbia (2006) which guarantees all citizens the right to education, and the Law on Higher Education (2005) which represents a general base of this part of the education system. This Law governs it in general, pointing out that all citizens with completed secondary education, regardless of numerous differences among them, have access to higher education under the same conditions.

Since the abovementioned Law on Higher Education in Serbia was adopted in 2005, after Serbia officially became a signatory of the Bologna process, it was meant to represent a framework for a future reform of higher education and harmonization of higher education system in Serbia with European trends in higher education, which are based on the principles of the Bologna Declaration and Lisbon Convention. The planned reforms anticipated introduction of a three-cycle study system, reform and modernization of curricula, development of a quality assurance system, encouragement of mobility of students and teaching staff, promotion of cooperation at the European level, recognition of study time abroad, etc. As a result of such set goals for reforms and their activities, the higher education system in Serbia was exposed to challenges that are inevitably brought by massification, privatization and rapid increase in the number of higher education institutions, expansion of new study programs, etc.

However, even with all the mentioned changes and challenges, the financing system did not essentially change, and higher education financing model is still based on input parameters, and the biggest share of funds comes from state budget and tuition. Therefore, the goal of this report is to answer questions that were open during the course of the project, and, at least, point to the limitations that follow the higher education financing policy in Serbia. Additionally, during the compiling of this report, numerous limitations presented themselves; the Working Group tried to give their answer to those, but often those answers were partial or vague. The reasons for such situation are numerous, but are most easily viewed through the questions that we have not been able to answer, despite all our efforts:

- How is it possible that action plans for the current strategy have not been adopted yet?
- How far has strategy implementation gone?
- Why are data on education financing at all levels, as well as higher education level, unavailable and imprecise?

Each of these questions could be rephrased as a hypothesis, which we will try to answer through the course of this report.

The document is structured into several sections. After the introduction, section two demonstrates the importance, as well as the challenges in Serbia. The next section discusses the funding mechanism in higher education, while the fourth section looks at the particularities of the funding mechanism in Serbia. The policy and normative framework that define funding of higher education policy, as well as action plans that will be implemented in the upcoming period, are defined in the fifth section. Finally, the last section is used for concluding remarks, extracts from the opinions and suggestions of internal stakeholders.

Part II FINANCING AND FUNDING MECHANISMS OF HIGHER EDUCATION IN SERBIA

II.1. Higher education financing challenges in Serbia

Higher education in Serbia started attracting masses at the beginning of the 1960s, while the latest significant increase in the number of students started in the 1990s and has continued until today (Vukasović, 2007). The greatest reforms that were started all over the Western Balkans in the first decade of the 21st century were guided by the Bologna process. Serbia joined this process in 2003 and, in accordance with the demands of the Bologna Declaration, the legal basis that provides a framework for introduction of reforms was changed. The new Law on Higher Education[3] was adopted in 2005, but the Statutory Instrument (*Uredba*) on Higher Education Financing was not synchronized with the Law, so the financial procedures are based on the previous system. The new Law also created a legal framework for private higher education institutions.

Based on the current situation, regulations, policies and decisions, it is not possible to determine whether higher education is considered a development priority in Serbia (Dobrota & Benkovic, 2014), because the faculties cannot clearly envision the country's strategy for the future. Government officials emphasize a relationship where financing of every public service should decrease. Higher education financing in Serbia represents a great challenge that comes out from the efforts made by Serbia in the process of adopting and implementation of the European Union education standards, with the goal of standards maintenance established by European Higher Education Area (EHEA) during 2003.

Serbia is a country that has not developed a tradition of gathering data on higher education, so the data is quite scarce. Data gathering methods are in the development phase. From the calculation done based on the approved state budget[4], in the period between 2005 and 2010, by Bojković & Ostojić, the share of funds from the budget of Serbia for higher education was between 0.55% and 0.67% of gross domestic product (in 2008 there was a 'jump' to 0.75%), while, at the same time, in the European Union countries it varied from the minimum of 0.8% (the funds in Bulgaria and Romania) to 2.4% GDP (the funds in Denmark). In the meantime, for the period between 2012 and 2014, the budget for higher education in Serbia was in the range of 0.8 to 0.9 % of GDP.

[3] Law on Higher Education, http://www.svos.org.rs/pdfs/zakon-vo-preciscen-2013.pdf (visited in December 2014).
[4] The calculations include direct transfer to higher education institutions (salaries, administrative expenses, current expenses and the like); they do not include capital investments, student standard expenses, scholarships, student activities and student participation

Still, what makes the budget funds look a little better are the funds allocated for student standard, such as funds for student nutrition, which are available to all the students at the Universities financed by the state budget, as well as accommodation, which is available only to students who are financed from the state budget and do not reside in the city where the University is. An important piece of information is that those funds make about 25% of total higher education funds. Accurate and official data on the funds are difficult to encounter in official and relevant reports.

The Ministry allocates funds for subsidies for services provided by insitutions of student standard and funds for student scholarships and loans through separate budget lines. Approach to the financing of social dimension of higher education has not been changed in the last 70 years, and, as such, does not correspond to modern challenges and goals of improvement of social dimension of higher education, in accordance with the principles of the Bologna process. Introduction of new mechanisms for improvement of social dimension of higher education represents an important element of future wholesome higher education financing reforms in Serbia.

Serbian public expenditures for higher education as a percentage of GDP lag behind more developed Balkan countries – Slovenia and Croatia. In monetary terms, the difference is even greater due to higher Croatian and Slovenian GDP. Increase of public expenditures for higher education would be a prerequisite for convergence of Serbian higher education system to advanced higher education systems in the EU. However, the increase of public education financing has to be followed by adoption of a new higher education financing model in order to facilitate education quality and equity enhancement.

Table 1: Share of public expenditures for higher education in GDP (selected countries)

Country	% of GDP in 2012[5]
Serbia	0.8
Bulgaria	0.8
Croatia	1.4
Hungary	1
Poland	1.5
Slovenia	1.2
France	0.8
Norway	1.4

The share of higher education public expenditures in GDP only shows a very blurred picture on higher education financing. Namely, in the input-based funding system such as Serbian, the increase of salaries and/or number of academic and non-academic staff, results in the increased share of higher education expenditures in GDP. However, these changes do not have impact on

[5] The Government of the Republic of Serbia. (2014). Second national report on social inclusion and poverty reduction in the Republic of Serbia, p. 166.

education quality and equity. The existing financing model in Serbia does not provide funds for improvement of higher education system and hence it is one of the most serious impediments for development of higher education system in future.

Ways of distribution of funds for higher education institutions have been gradually changing in Serbia in the last two decades, but the universities have modest financial autonomy and the Government is the one that decides on budget financing, i.e. budget lines dedicated to higher education institutions. The criteria used to determine the amount of budget funds are most often the number of enrolled students, number of employees, study program, as well as the basic criteria for salaries in the public sector.

In the higher education system in Serbia there is also a mediatory body, National Council for Higher Education. This body does not participate in the mechanisms and distribution of financial means, even though it is in charge of providing development and improvement of higher education quality. The projects of international cooperation and student exchange are also limited, because minimal financial means are allocated for those. It is the same for research, even though they are financed independently from teaching.

Budget funds in Serbia are directly distributed to faculties as legal persons. In order to enable common services provided by the university, faculties agree to transfer some funds from their budget to the university.

II.2. Funding mechanisms of higher education

After identifying funding sources of higher education, it is important to make a closer examination of the funding mechanisms. Some governments prefer to pack a funding mechanism into different funding models, and then again different funding mechanisms may have different impacts on the behavior of higher education institutions. Thus, examining the funding mechanism can provide a basis for understanding government's approach to the funding of higher education in Serbia.

Different countries have adopted different kinds of higher education funding mechanisms. In the references, it is possible to find that Denmark has adopted the taximeter model, which is based on a unit-cost principle that accounts for, on average, one third of total revenue an institute will receive. The number of students that pass exams determines the available budget. Universities do not receive compensation for students who fail or do not take their exams.

In England, higher education institutions are funded by two main sources: block grants and tuition fees. Block grants are largely determined by the formula set by the Higher Education Funding Council for England (HEFCE). In general, the formula is based on running cost. For example, laboratory-based subjects receive more funding than non-laboratory-based ones. Part-time students receive only 50% of a full-time student grant, as their learning activities are relatively less intense than full-time students'. Institutes in London get more grants due to, for example, higher living costs (HEFCE, 2002).

Many countries made a strong effort to define funding models and formulas to determine the funding allocation. But still, in some countries, such as Germany, funding allocation is based on institutional budget requests in a process of budget negotiations that complicates the process of higher education financing. The starting point for budget assessment is the amount an institute received in the previous year. The same situation is in Serbia as well.

Funding models and mechanisms can be analyzed through different dimensions. Albrecht and Ziderman (1992, 1995) had identified three main criteria: performance-based, cost-based and negotiated. Other dimensions include input-orientation and outcome-orientation (Jongbloed and Koelman, 2000), demand-side and supply-side (Kaiser et al., 2001), performance-basis and unit-cost-basis (Johnstone, 1998). From the funding methods previously mentioned, it has been found that student enrollment (that is input-orientation) is an essential element in many funding models.

Very few countries use performance as a major criterion. As almost all institutes receive funding directly from governments or funding agencies, public authorities maintain a strong influence on institutes through funding negotiations and controlling student intake quotas. Block grants are commonly used in many countries, but they can only increase the flexibility of internal allocation of funds; they do not provide institutes with enough autonomy to decide their own directions.

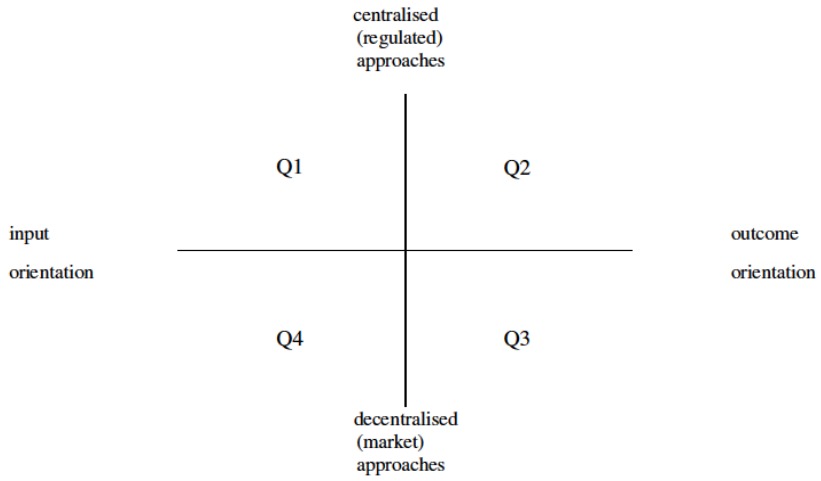
Moreover, some governments are trying to reduce their fiscal burden by increasing student tuition fees and encouraging institutes to seek more self-generated funds. There is often a discrepancy between the way in which funds are supposed to be allocated and the ways in which they are actually transferred (Albrecht and Ziderman, 1992). Different funding mechanisms have different effects on business running of Universities and institutes.

However, autors like Jongbloed & Koelman (2000) claim that there are four different funding mechanisms for higher education, so they have rased two important questions for the classification:

(a) What does the government fund?
(b) How is it funded?

The first question is concerned with the funding base, whereas the second question speaks to the degree of market orientation in the funding arrangements. Based on four posible models that the two of them are suggesting for funding of higher education, which are presented below, it is possible to perceive the funding model that is in use in Serbia, as well in which direction the representatives of the Ministry of Education, Science and Technological Development are thinking, concerning the funding of higher education in the future.

In the graph below, Jongbloed & Koelman (2000) have presented a funding mechanism; the vertical axis is used for depicting the degree of (de-)centralisation and the horizontal axis for expressing the degree to which governments are paying for the results (outcomes) instead of the efforts (inputs). It is possible to notice four quadrants (Q1, Q2, Q3, Q4), that present four types of funding arrangements.



Q1: planned, input-based funding through providers

The north-west portion of the diagram represents a centralised system of funding. It shows a more traditional type of budgeting, where allocations are based on requests (activity plans; budget proposals) submitted to budgetary authorities. This is known as negotiated funding. In this mechanism, the budget allocation is often based on the previous year's allocation of specific budget items. Separate budget items then are negotiated between representatives of educational institutions and the funding authorities (i.e. the ministry, or funding council). Annual changes (usually increases) in each budget item are treated individually, with discussion taking place on the basis of cost projections. In this case, budget items are likely to include categories like staff salaries, material requirements, building maintenance costs, and investment. Funding is line item based, and shows different expenditure items as separate lines of the budget. These line items are determined by referring to norms with respect to indicators like unit costs (or unit cost increases) or capacity (e.g. funded number of students).

Q2: performance-based funding of providers

In this example of a performance-based funding system, a formula is used that generates funds for institutions that are successful in terms of their students passing exams, publishing record of faculty members, degree of internationalization achieved etc. Let us focus, e.g., on the first of these performance measures. Depending on the number of credits (i.e. weighted number of passed courses) accumulated by their students and the subject categories concerned, a budget is flowing to the higher education institution. This type of model is operating in Denmark (taximeter model), while in Sweden a mix of enrolment numbers and credits determines the funds allocated to higher education institutions. In the Netherlands, a mix of the number of first-year students ('freshmen') and the number of Master's degrees conferred determines the funds allocated to the universities (see Jongbloed & Vossensteyn, 2002). Other examples can be found in the UK, where research is funded in proportion to a measure of research quality.

Research quality is assessed and rated every five years (in Research Assessment Exercises). Funding may, also, explicitly aim at attracting foreign students and faculty members and creation of study programs in English (internationalization).

Q3: purpose-specific purchasing from providers

In this example of a market-oriented funding system, higher education institutions are invited to submit tenders for a given supply of graduates or research activities. The tenders that are selected by the funding agency are the ones that are the most price-competitive. In this tendering process, higher education institutions are encouraged to compete with one another to provide education, training and research to meet national needs. Another example is research funds awarded by research councils. The system will make use of contracts that are signed between the funding agency and higher education institutions, with the latter agreeing to deliver graduates for targeted labour market needs, or research outputs targeted at strengthening the innovative capacity of the country.

When entering into a contract, the funding agency will make sure it obtains the services it wants for a reasonable price. In this way the cost-effectiveness of the delivery is stressed. In the contract, both parties express that they will obey certain criteria. Only if these criteria are fulfilled, the higher education institution will receive core funding. The criteria may concern the types and qualifications of students admitted to the higher education institution, the (maximum) level of tuition fees (if any) charged by the institution, and the commitment made by the higher education institution towards its students in the instruction and teaching processes.

Q4: demand-driven, input-based funding through clients

This funding system makes use of vouchers. The core funds of higher education institutions are supplied through the clients of higher education institutions. Students obtain vouchers, which can be traded for educational services (i.e. educational consumption), at the higher education institution of their own choice. For the higher education institution the vouchers represent a certain value - they can be cashed at the Ministry of Education. Each (prospective) student is given a limited number of vouchers, representing a value which can be used up in a flexible way (during a certain period of time and for programs supplied by a given number of accredited education providers). In this funding system, it is the consumer that drives the system - the system is demand-driven. The client (student) decides what institution to attend to and what programs to enrol in.

The higher education institutions will have to look after the quality of their teaching and their supply of courses, because unattractive programs will not receive sufficient funding. The voucher system can be combined - like many other funding variants - with a system of differentiated course fees. The higher education institutions then will charge the students a certain percentage of the course costs. Tuition fees may be regulated to some extent by the government. Charging fees will make students pay attention to the quality of the service they

get from the higher education institution. So, combining vouchers and fees may result in a system which is responsive to individual students' demands.

II.3. Funding mechanism of higher education in Serbia

Representatives of the faculties and the Ministry of Education, Science and Technological Development (MoESTD) determine jointly the number of enrolled students for each faculty (of each university). The students are divided in two groups, based on the source of funding. One group does not pay fees and is thus funded by the state and the other group pays fees.

The amount of funding that universities receive from the MoESTD is defined by a regulation. For each faculty, the regulation determines the number of teaching staff that will be funded by the state. This number is calculated based on the number of state-funded enrolled students and based on a predefined maximum class size (defined by the regulation). Faculties and the MoESTD determine jointly the maximum number of enrolled students (state funded) per faculty. The maximum class size depends on the year of study and on the faculty type. The regulation distinguishes between nine different groups of faculties and for each of these groups a different maximum class size is determined. To determine the number of state funded classes, the number of state-funded enrolled students is divided by the maximum class size and this number is then rounded up.

The number of non-teaching staff funded by the state is determined based on the number of students, size of the area of the faculty buildings, number of faculty buildings, number of books in the library and number of laboratories.

Taking aside the country specificity of self-funded students, the general funding mechanism of higher education in Serbia corresponds to the Q1 model explained above. The funds that universities receive are based on inputs and outcomes are not taken into consideration. This old funding model does not take into account the quality of teaching and research and does not incentivise universities to improve their quality. As a mediator, the MoESTD aims to shift its funding decision from inputs to outcomes both in teaching and research.

II.3.1. Analysis of a minor research conducted at HE institutions

In order to get insight into financing priorities that higher education (HE) institutions should rely on in Serbia, a questionnaire has been assigned to a certain number of managers of public higher education institutions. The questionnaire contained a variety of indicators, and the respondents had to assign ratings based on importance - from 1 (least important) to 10 (highest priority). More precisely, managers of public higher education institutions were asked to assess the influence that each of those indicators should have on the amount of the funds that will be allocated to individual higher education institutions from the Ministry (Table 1).

An extensive list of indicators that have been evaluated was created on the basis of indicators that are a measure for financing of public higher education institutions in the European Union

countries. Nevertheless, for the same list of indicators, the managers of public higher education institutions were asked to evaluate the importance of each indicator from the aspect of its impact on the quality of the studies. The questionnaire was sent to 125 addresses of public higher education institutions, but only 24 have accepted to participate in the survey.

Among 24 higher education institutions that were ready to participate in the research, there were 13 managers of vocational colleges, while the rest were managers of faculties.

Table 2: Indicators arranged by importance for funding of public (HE) institutions

	N	Min.	Max.	Arit. mean	Sta. Dev.
Number of teaching staff	23	6	10	9.22	1.242
Total number of students at undergraduate studies in the previous academic year with budget status	24	5	10	9.08	1.530
Structure of teaching staff	24	5	10	9.08	1.558
Number of laboratories and centers	21	3	10	8.62	1.884
Number of non-teaching staff	24	4	10	8.38	1.974
Structure of non-teaching staff	23	5	10	8.26	1.864
Area of available buildings	24	2	10	8.25	2.192
Total number of students at master studies in the previous academic year with budget status	17	2	10	7.71	2.339
Total number of students at PhD studies in the previous academic year with budget status	17	2	10	7.24	2.751
Education of experts in priority areas in Serbia	22	2	10	7.05	2.768
Number of papers in magazines with an impact factor in the previous academic year	23	1	10	7.04	2.755
Total number of graduated students at undergraduate studies in the previous academic year	24	1	10	6.83	2.761
University/faculty ranking on international lists	21	1	10	6.62	2.941
Awards won by employees at international competitions in the previous academic year	22	2	10	6.50	2.614

Total number of obtained ECTS points in the previous academic year by students with budget status	23	1	10	6.30	2.835
Awards won by students at international competitions	23	2	10	6.26	2.816
Number of accepted patents in the previous 3 academic years	20	1	10	6.20	2.783
Revenue from external financing sources	23	1	10	6.09	3.592
Number of scientific institutes	16	1	10	6.00	3.225
Awards won by employees at national competitions in the previous academic year	22	1	10	5.73	2.815
Number of reported patents in the previous 3 academic years	20	2	10	5.65	2.183
Number of student help services (career guidance services, student help services, etc.)	23	1	10	5.61	2.776
Awards won by students at national competitions in the previous academic year	23	1	10	5.61	2.904
Total number of defended PhD theses in the previous academic year	17	1	10	5.47	3.319
Number of international students	19	1	10	5.32	2.829
Total number of graduated students at master studies in the previous academic year	17	1	10	5.29	2.910

The managers of higher education institutions gave the highest importance to the number of teaching staff, as an indicator that should primarily affect the funding of higher education institutions (M = 9.22). This indicator has the lowest standard deviation, which indicates that the higher education institutions, to a large extent, agree that this should be the main indicator on which financing of higher education institutions will rely. Immediately after this indicator follow indicators that are related to the number of students who are funded from the budget (M = 9.08) and the structure of teaching staff (M = 9.08), as well as the number of laboratories and centers (M = 8.62). Small standard deviations for these indicators suggest that there is considerable agreement regarding the importance of these indicators for funding of public higher education institutions. They are followed by the number of laboratories and centers, as well as the number of non-teaching staff.

Managers of higher education institutions consider that funding of their activities should not depend of the quality of scientific research. They support that claim with low grades assigned to the importance of the number of papers in journals with a specific impact factor (M = 7.04), ranking universities on international lists (M = 6.62), awards that employees received at international competitions in the previous academic year (M = 6.5), the number of patents (M =

6.20), awards that students won at different kinds of competitions (M = 6.26), as well as number of scientific institutes working within the faculty (M = 6).

Table 3: Indicators arranged by importance for quality of public (HE) institutions

	N	Min.	Max.	Arit. mean	Stan. dev.
Structure of teaching staff	24	5	10	9.33	1.274
Number of teaching staff	24	5	15	9.04	2.053
Number of laboratories and centers	22	4	10	8.68	1.673
University/faculty ranking on international lists	22	5	10	8.36	1.840
Area of available buildings	24	4	10	8.13	1.895
Number of papers in magazines with an impact factor in the previous academic year	23	3	10	8.00	2.089
Structure of non-teaching staff	24	1	10	7.83	2.884
Total number of obtained ECTS points in the previous academic year by students with budget status	22	3	10	7.64	2.479
Total number of students at undergraduate studies in the previous academic year with budget status	24	3	10	7.50	2.226
Total number of graduated students at undergraduate studies in the previous academic year	24	4	10	7.46	2.303
Number of non-teaching staff	24	1	10	7.25	2.786
Revenue from external financing sources	22	2	10	7.23	2.671
Awards won by students at international competitions	23	2	10	7.22	2.713
Awards won by employees at international competitions in the previous academic year	22	2	10	7.18	2.702
Education of experts in priority areas in Serbia	22	2	10	6.86	2.867
Total number of graduated students at master studies in the previous academic year	17	3	10	6.82	2.651

Number of international students	22	1	10	6.73	2.947
Total number of defended PhD theses in the previous academic year	18	3	10	6.72	2.782
Awards won by employees at national competitions in the previous academic year	22	1	10	6.68	2.934
Awards won by students at national competitions in the previous academic year	23	1	10	6.65	3.128
Number of accepted patents in the previous 3 academic years	20	2	10	6.60	2.664
Number of student help services (career guidance services, student help services, etc.)	22	2	10	6.59	2.702
Number of reported patents in the previous 3 academic years	20	3	10	6.55	2.282
Total number of students at master studies in the previous academic year with budget status	17	3	10	6.47	2.625
Number of scientific institutes	17	1	10	6.41	2.852
Total number of students at PhD studies in the previous academic year with budget status	18	2	10	6.28	2.562

It is possible to notice that managers of public higher education institutions assigned approximately the same importance to indicators of the quality of studies at their institutions and to the ones related to funding. At the same time, they did not emphasize enough and recognize the connection between the quality offered through the education process and the funds transferred to them by the ministry for that purpose. The results of the survey on higher education quality are surprising as well, where indicators that refer to science, such as the number of PhD students, PhD theses, existence of scientific institutes, patents and the like received insufficient, i.e. low importance.

Yet, it is possible to notice certain differences. Structure (M = 9.33), the number of teaching staff (M = 9.04) and the number of laboratories and centers (M = 8.68) were also assessed as important for the quality of higher education, while the ranking of universities and colleges at international ranking lists (M = 8.36) is estimated to be important for the quality of higher education. Still, not that important that the financing should be relying on it. The same situation is with awards of employees (M = 7.18) and students (M = 7.22). The number of research institutes has not been assessed as a significant neither for funding nor for the quality at the public higher education institutions.

II.3.2. Higher education financing strategy for Serbia 2015 – 2025

As it was emphasized in the Strategy for Education Development in Serbia 2020, higher education financing is investing in the future. Increased level of investments and financing system need to be directed towards creation of creative, innovative and responsible highly educated people that are necessary to achieve economic growth, decrease unemployment and achieve total democratization of society.

The existing higher education financing policies are not comprehensive. That means that many higher education financing aspects are not synchronized due to limitations of financial funds and poor availability of higher education for certain social groups. Higher education institutions of most countries enroll the greatest number of students relying on the funds from the appropriate ministry's budget and students' family budget. At the same time, cooperation with the economy, private sector, inter-university, and even inter-faculty cooperation is limited, and there is not enough good practice and it is most often in some disciplines only (such as, for example, technical sciences).

This situation clearly points to lack of systematic approach that would stimulate and enable universities to depend less on the government, more actively cooperate with other social and economic spheres and that, in that way, better respond to the needs of the society. Higher education, research and innovations have the main role in individual and social progress and in creating highly competent human capital. Higher education institutions are, therefore, important partners in implementation of development strategy. That is, again, tightly connected to the reforms that have to be implemented with the goal to increase the number of highly educated citizens at all levels; better quality of human capital in higher education; creation of an effective management and financial mechanism as a support to high quality and strengthening of the knowledge triangle (education, research and innovation).

European education system showed that financing of higher education from the budget is successful if it has, above all, a healthy financing core – budget funds, enabled access to education, teaching quality and additional funds gained through own efforts of the institution.

Proceeding from world developments and the current situation in Serbia, the strategic objectives of Serbian higher education for the next 10 years are as follows:

1. Guarantee a volume of higher education study that is applicable to the demand for higher education, bringing the preferences of students closer to the needs of the society,
2. Assure the quality of higher education on a level comparable to the European Union,
3. Participate as an equal partner in regional and Europe-wide academic cooperation,
4. Satisfy the needs of Serbian society for highly qualified workforce,
5. Ensure the continuation and development of Serbian higher education in the European open education space,
6. Ensure a level of funding close to the OECD average per student, simultaneously preserving access to higher education comparable to OECD countries.

It is obvious that an adequate financing system is the one that is flexible enough and sensitive enough to the differences between and within institutions, areas and study programs. An adequate financing system is not separate — it needs to be supported (and that it itself supports) an adequate quality insurance system, in order to enable a continued monitoring of results at the system, institutional level, and from the viewpoint of an individual student or student population as a whole. Without such monitoring, it is impossible to estimate whether a model considered adequate in theory really is such in reality.

So, acording to the Ministry of Education, Science and Technological Development of Serbia, strategic planning of higher education will be structured into four basic activities, which will enable the achievement of six strategic objectives, together with the supporting policy measures. These activities are as follows:

1. Linking higher education with labor market demand,
2. Linking higher education with research and development activity and the innovation system,
3. Assuring the quality of higher education,
4. Funding higher education.

Goals of each participant can be, and most often are, complex, diverse, and sometimes also conflicted, in the sense of the relationship between teaching and research, but also the search for excellence, efficiency, effectiveness and equality at the same time. Available resources that can be awarded to higher education, both public and private, are limited. Therefore, it is important to carefully make decisions in respect to relative importance of each of the previously mentioned elements, and according to adequate analysis of possible short-term, mid-term and long-term consequences, which will, certainly, be a topic for further research.

Part III THE EXISTING HIGHER EDUCATION FUNDING FRAMEWORK IN SERBIA

III.1. Input based VS. Contract based funding

The existing allocation mechanism was developed during the 1990s and has been sligthly adjusted during past two decades. Serbian higher education financing model belongs to input based allocation mechanisms (Babin&Lažetić, 2009). Budgetary funds are planned and grouped in line items. Detailed rules prescribe allocation of funds for teaching and non-teaching staff and for partial financing of running and maintenance costs. Higher education institutions have limited autonomy on internal management of allocated funds. In addition, higher education institutions have a full autonomy on spending own revenues (generated from tuition fees and collaboration with companies). The described structure of the allocation mechanism enables stable financing of higher education institutions. Allocation mechanism does not provide funding of any developmental endeavor. Research process at universities is funded by another budgetary stream. Namely, the state provides funding of higher education institutions and research institutes' scientific projects. Separate allocation of funds for research activities creates a systemic inefficiency and does not enable adequate utilisation of human resources and disposable budgetary funds (Branković&Babin, 2011).

Even though the Law on Higher Education from 2005 (article 58.) prescribed development of contract based funding, this new instrument has never been introduced in practice. Contract based funding has often been understood as a policy of university centralization and therefore was unofficially rejected and criticized by university and faculty management. The fear of necessary university centralization in the case of the new funding model implementation is not realistic.

The contract between the state and university should provide an overarching framework for individual contracts between the state and faculties. Therefore, university level should guarantee long-term strategic directions and improvement of agreed indicators.

Contract based funding can include two parts:
1. institutional funding and
2. performance based funding.

This structure would prevent any larger distortion within higher education system and open possibility for continuous improvements of results and outcomes. The evolution of funding mechanism is a very important pre-condition of a successful reform process.

Introduction of contract based funding is followed by higher freedom of internal management of budgetary funds at the institutional level. State transfers budgetary funds as a lump sum (block grant) and higher education institutions need to expand internal mechanisms and rules for optimal management of funds in order to fulfill determined goals and targets. The ultimate

goal of contract based funding is to connect expenditures with desired results and outcomes of education and research process. Hence, adoption of indicators related to improvement of efficiency, effectiveness and equity of higher education is a necessary element of contract based funding implementation. This model would lead to enhanced accountability of higher education institutions and consequently improve results and outcomes of education and research process. The performance of higher education institutions can be easily assessed and new targeted measures for improved education quality and equity could be introduced. Finally, contract based funding might contribute to higher student mobility in Serbia and contribute to creation of interdisciplinary and multidisciplinary study programs.

III. 1.1. Policy recommendations for improvements of funding framework in Serbia

Some specific recommendations that are expected to be incorporated in higher education funding policy rely on the idea of adoption of the new higher education funding model.

- It is the crucial step for a sustainable development of higher education system in Serbia, that will take into account specifics of scientific fields and faculties.
- Contract based funding provides a wide space for systemic improvement of higher education efficiency, effectiveness and equity.
- The empirical data on results and outcomes of higher education process, on gradutes' employability and higher education equity generated within TEMPUS projects CONGRAD, EQUIED and FINHED shed the light on the areas where targeted intervention is needed.
- The rigidity of the existing funding model hinders both state and higher education institutions efforts related to solving long-lasting, structural problems.

Therefore, development of contract based funding and relevant indicators and targets should be the pillar of the future higher education reform process.

Part IV FINDINGS AND RECOMMENDATIONS FROM THE WORKING GROUP IN SERBIA

IV.1. Findings of stakeholder consultations

Higher education financing in Serbia is regulated by the Law on Higher Education and the Statutory Instrument (*Uredba*) on the norms and operation standards of universities and faculties for disciplines financed from the budget. The Statutory Instrument regulates application of the higher education financing model in Serbia, based on the formula with dominant input criteria (number of enrolled students) in allocating funds to institutions from budget sources.

From the given aspect, higher education financing is clearly defined and transparent, and qualitative performances of the financing model point to the fact that it does not recognize outcomes (results) in higher education, because its formula does not include output elements in the criteria of allocation of budget funds to higher education institutions.

Apart from the funds allocated to faculties according to the Statutory Instrument, AP of Vojvodina, who is in charge of financing of the University of Novi Sad, announces bidding for financing of activities of institutions, with the function of improving their total business. This fact points to the possibility that faculties within the university, apart from the funds allocated to them according to the Statutory Instrument, also get additional income from the budget.

It is often pointed out that the main problem in higher education financing in Serbia is insufficient amount of planned funds for higher education from the budget, which forces the institutions to turn to other financing sources, which, often, results in a decrease of higher education quality. According to the available data, participation of budget funds for higher education in the GDP in Serbia is 0.92%, and the average participation in the European Union countries is 1.31%, according to the budget of the Republic of Serbia for 2015[6].

Shortage of official information on the social dimension of studying in Serbia additionally complicates the activities on creation of a unique higher education financing model in Serbia. Within FINHED Tempus project, the data on the social dimension of studying in Serbia became available for the first time.

Considering different mechanisms for allocation of funds, a good starting base for creation of a wholesome financing system in Serbia was created. The Working Group did not analyze advantages and shortcomings that a higher education financing mechanism brought to the education system that implemented it, but the model that was suggested by the Working Group

[6] Budget System Law of the Republic of Serbia for 2015, Official Gazette 142/2014 (Zakon o budžetu Republike Srbije za 2015, Službeni glasnik 142/2014)

in Serbia represents a good base, since it respects the specific qualities, limits and sensitivity to social equality of distribution of funds in the education system in Serbia.

Wanting to examine the attitude of the higher education institutions themselves about the introduction of the new financing model, the Working Group made an effort to estimate, through a mini-survey, how the managements of the institutions see the factors that need to be taken into account when creating the funds distribution mechanisms. Unfortunately, when the results of this survey are analyzed, there is the impression that the institution managements are not ready to view the problem of higher education financing in a more modern way. From their replies it can be seen that the managements give highest significance to the factors that have already been clearly established (number of teaching staff and students), and that they are not willing to engage in competition among themselves in the factors that are key for higher education quality. This actually means that the reform of the financing system will demand a serious effort in promoting an innovative approach among the employees at the universities.

IV.1. Recommendations of stakeholder consultations

Inclusion into the European higher education space demands higher budget funds in Serbia, i.e. AP of Vojvodina, for financing and further development of higher education. At the same time, the funds from public sources, that have been more and more scarce, should be invested into higher education according to criteria and standards that are different from the existing ones. Therefore, it is necessary to:

- Rationalize the use of the existing funds, which includes introduction of new organizational solutions at universities. New organizational solutions would mean rationalization of spending through integration of some university units and more rational spending of funds at the same time.
- Introduce the process of financial planning and reports on achieved results. That would improve productivity and achieve higher efficiency.
- Introduce new financing models for universities and faculties. Here, it is especially necessary to single out the model of public-private financing. Participation of the private sector in the financing of social infrastructure has its roots in the education sector; as a consequence of that, according to Patrinos et al. (2009), the financing of higher education from private sources is put, by some authors, in the context of so-called ‘exogenous privatization’. Exogenous privatization includes directing education towards profit-oriented partners from the private sector, who actively participate in the shaping, management and realization of different activities from the area of education. In that concept lies the potential of participation of the private sector in education financing.
- Introduce new mechanisms of improvement of the social dimension of higher education, in order to prevent student dissipation, improve righteousness, higher education efficiency, as well as defining of socially sensitive criteria.

Also, such approach certainly demands a higher level of professionalization of managements and faculties, as organizational units of a university, as well as the universities themselves. That would result in:

- A clearer picture, i.e. availibility of clear and precise data that refer to education financing, i.e. higher education financing,
- Giving more importance to higher education quality, as well as recognition of the corelation between financing and education quality,
- Emphasis of the founders' responsibility to the institution, not only in financing, but also monetary, staff and integration activities,
- Creation of a report on how far the implementation of the existing strategy has gone, i.e. which action plans have been implemented, and which ones have not.

The suggested rationalizations would enable the use of the available funds in a more rational and equitable way.

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Annex to the Report: Questionnaire - Measured Indicators and Budgetary Funding of Higher Institutions in Serbia

Potential indicators of budget financing of higher education institutions

The table gives indicators that are used as a base for higher education financing in Europe. Please rate each indicator from 1 to 10, in relation to the importance you think the indicator should have in the context of reallocation of budget funds towards higher education institutions, as well as rate to which extent each of the indicators represents an indicator of higher education quality in the Republic of Serbia.

Please fill in the following information on your institution:

1 Name of higher education institution for which the questionnaire is filled out: _____

2 Type of higher education institution:

1 University
2 Faculty, i.e. arts academy within the university
3 Vocational studies academy
4 College
5 Vocational college

3 Your position at the institution _____

Rating of importance of indicators for higher institutions financing system in the Republic of Serbia

In the following table, please rate the **<u>importance</u>** that, in your opinion, each of the given indicators should have in determining the amount of budget funds that will be allocated to individual higher education institutions by the state.

<u>Instructions:</u>
Please mark a number on a scale of 1 to 10 where:
1 indicates that the indicator is **not important at all**, in your opinion
10 indicates that the indicator has **very high importance**.
You can mark the number by making it bold or you can mark it in a different color. Please rate each indicator by **one number only.**

	Indicator	**On a scale of 1 to 10:** **1** indicates that the indicator is **not important at all**, in your opinion **10** indicates that the indicator has **very high importance**.									
1	Total number of students at **undergraduate** studies in the previous academic year with budget status	1	2	3	4	5	6	7	8	9	10
2	Total number of students at **master** studies in the previous academic year with budget status	1	2	3	4	5	6	7	8	9	10
3	Total number of students at **PhD** studies in the previous academic year with budget status	1	2	3	4	5	6	7	8	9	10
4	Total number of **graduated students** at **undergraduate** studies in the previous academic year	1	2	3	4	5	6	7	8	9	10
5	Total number of **graduated students** at **master** studies in the previous academic year	1	2	3	4	5	6	7	8	9	10
6	Total number of **defended PhD theses** in the previous academic year	1	2	3	4	5	6	7	8	9	10
7	Total number of obtained **ECTS** points in the previous academic year by students with budget status	1	2	3	4	5	6	7	8	9	10
8	Number of **international** students	1	2	3	4	5	6	7	8	9	10
9	**Number of teaching** staff	1	2	3	4	5	6	7	8	9	10
10	**Structure of teaching** staff	1	2	3	4	5	6	7	8	9	10
11	**Number of non-teaching** staff	1	2	3	4	5	6	7	8	9	10
12	**Structure of non-teaching** staff	1	2	3	4	5	6	7	8	9	10
13	**Area** of available buildings	1	2	3	4	5	6	7	8	9	10
14	Number of **laboratories** and centers	1	2	3	4	5	6	7	8	9	10
15	Number of **scientific institutes**	1	2	3	4	5	6	7	8	9	10
16	Number of **student help services** (career guidance services, student help services, etc.)	1	2	3	4	5	6	7	8	9	10

	Indicator	**On a scale of 1 to 10:** **1** indicates that the indicator is **not important at all**, in your opinion **10** indicates that the indicator has **very high importance**.

17	Revenue from **external financing sources**	1	2	3	4	5	6	7	8	9	10
18	Number of **papers** in magazines with an impact factor in the previous academic year	1	2	3	4	5	6	7	8	9	10
19	Number of **reported** patents in the previous 3 academic years	1	2	3	4	5	6	7	8	9	10
20	Number of **accepted** patents in the previous 3 academic years	1	2	3	4	5	6	7	8	9	10
21	Awards won by students at international competitions	1	2	3	4	5	6	7	8	9	10
22	Awards won by employees at international competitions in the previous academic year	1	2	3	4	5	6	7	8	9	10
23	Awards won by students at national competitions in the previous academic year	1	2	3	4	5	6	7	8	9	10
24	Awards won by employees at national competitions in the previous academic year	1	2	3	4	5	6	7	8	9	10
25	University/faculty ranking on international lists	1	2	3	4	5	6	7	8	9	10
26	Education of experts in priority areas in Serbia	1	2	3	4	5	6	7	8	9	10
27	Something else (add what) _____ __	1	2	3	4	5	6	7	8	9	10
28	Something else (add what) _____ __	1	2	3	4	5	6	7	8	9	10
29	Something else (add what) _____ __	1	2	3	4	5	6	7	8	9	10

Evaluation of higher education quality indicators in the Republic of Serbia

In the following table, please evaluate to which extent each of the given indicators represents an **indicator of higher education** quality in the Republic of Serbia.

Instructions:
Please mark a number on a scale of 1 to 10 where:
1 indicates that the indicator does **not show at all** higher education quality, in your opinion
10 indicates that the indicator **shows to a great extent** higher education quality, in your opinion

You can mark the number by making it bold or you can mark it in a different color. Please rate each indicator by **one number only.**

	Indicator	**On a scale of 1 to 10:** **1** indicates that the indicator does **not show at all** HE quality, in your opinion **10** indicates that the indicator shows **to a great extent** HE quality, in your opinion									
1	Total number of students at **undergraduate** studies in the previous academic year with budget status	1	2	3	4	5	6	7	8	9	10
2	Total number of students at **master** studies in the previous academic year with budget status	1	2	3	4	5	6	7	8	9	10
3	Total number of students at **PhD** studies in the previous academic year with budget status	1	2	3	4	5	6	7	8	9	10
4	Total number of **graduated students** at **undergraduate** studies in the previous academic year	1	2	3	4	5	6	7	8	9	10
5	Total number of **graduated students** at **master** studies in the previous academic year	1	2	3	4	5	6	7	8	9	10
6	Total number of **defended PhD theses** in the previous academic year	1	2	3	4	5	6	7	8	9	10
7	Total number of obtained **ECTS** points in the previous academic year by students with budget status	1	2	3	4	5	6	7	8	9	10
8	Number of **international** students	1	2	3	4	5	6	7	8	9	10
9	**Number of teaching** staff	1	2	3	4	5	6	7	8	9	10
10	**Structure of teaching** staff	1	2	3	4	5	6	7	8	9	10
11	**Number of non-teaching** staff	1	2	3	4	5	6	7	8	9	10
12	**Structure of non-teaching** staff	1	2	3	4	5	6	7	8	9	10
13	**Area** of available buildings	1	2	3	4	5	6	7	8	9	10
14	Number of **laboratories** and centers	1	2	3	4	5	6	7	8	9	10
15	Number of **scientific institutes**	1	2	3	4	5	6	7	8	9	10
16	Number of **student help services** (career guidance services, student help services, etc.)	1	2	3	4	5	6	7	8	9	10
	Indicator	**On a scale of 1 to 10:** **1** indicates that the indicator does **not show at all** the quality of HE, in your opinion **10** indicates that the indicator shows **to a great extent** the quality of HE, in your									

		opinion									
17	Revenue from **external financing sources**	1	2	3	4	5	6	7	8	9	10
18	Number of **papers** in magazines with an impact factor in the previous academic year	1	2	3	4	5	6	7	8	9	10
19	Number of **reported** patents in the previous 3 academic years	1	2	3	4	5	6	7	8	9	10
20	Number of **accepted** patents in the previous 3 academic years	1	2	3	4	5	6	7	8	9	10
21	Awards won by students at international competitions	1	2	3	4	5	6	7	8	9	10
22	Awards won by employees at international competitions in the previous academic year	1	2	3	4	5	6	7	8	9	10
23	Awards won by students at national competitions in the previous academic year	1	2	3	4	5	6	7	8	9	10
24	Awards won by employees at national competitions in the previous academic year	1	2	3	4	5	6	7	8	9	10
25	University/faculty ranking on international lists	1	2	3	4	5	6	7	8	9	10
26	Education of experts in priority areas in Serbia	1	2	3	4	5	6	7	8	9	10
27	Something else (add what) _____ __	1	2	3	4	5	6	7	8	9	10
28	Something else (add what) _____ __	1	2	3	4	5	6	7	8	9	10
29	Something else (add what) _____ __	1	2	3	4	5	6	7	8	9	10

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