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THE HIGHER EDUCATION REFORM IN BULGARIA – WEAKNESSES AND POSSIBLE IMPROVEMENTS

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Abstract: The higher education reform in Bulgaria is beset by design flaws that prevent it from achieving better educational performance. First, it sets unrealistic goals or goals that are outside the control of universities. As a result, they have no stimuli to modify their behaviour. Second, it ignores the role of the students. The report offers measures which take account of these weakness and could make the reform both more just and effective.

Keywords: higher education, reform, regulation, stimuli.

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INTRODUCTION

The higher education in Bulgaria is in need of reform. In times of demographic crisis and under increasing competitive pressure from abroad, Bulgarian universities face challenges which can hardly be met in the existing institutional framework. Changes are required and the decision of the government to take measures is commendable. The kind of changes to be made is an issue that is at least as important as the awareness of their necessity and the will to initiate them. In our opinion, it is unlikely that the measures, put forward in the current reform, will make important advances towards the desired goal, i.e. improved quality of the higher education. It would be better to amend the reform in its infancy before it has gained momentum and changes have become difficult and costly.

EXPOSITION

What makes a good regulation?

A good regulation is a regulation that achieves its goals by eliciting behavior modification in the regulated subjects in the desired direction[160]. An effective reform, which is a set of regulatory measures, should conform to the following principles:

- Has realistic goals;
- The object of regulation is entirely within the control of the regulated subjects;
- The stimuli to act are targeted at specific activities and apply to these activities only, i.e. there is no overlapping and interweaving of different stimuli and activities;
- Creates conditions for dynamic behavioural changes, i.e. once set, they continuously push the regulated subjects towards the desired goal.

Weaknesses of the current reform

The current reform is regarded above all as the measures of Government Decree №64 from 25 March, 2016. [1].

- Its goals are not realistic.

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[160] The question what makes a good regulation is broader than its treatment here. Because of length limitations the issue is confined to the effectiveness of regulations at the expense of the procedural aspect. Even using effectiveness as the sole criteria, the principles examined are not exhaustive and are considered in the context of the current problem.

Strong inertia forces exist and as a result even immediate and significant improvements in the indicators are not reflected as changes in the financing and the allowed number of new students until several years afterwards;

- It includes indicators over which the regulated subjects have no or very little control.

- Realization on the labour market depends largely on the opportunities offered by the labour market itself, which in turn is segmented geographically and professionally;

- Leads to the interweaving of different types of stimuli and different types of activities.

At present, one of the criteria for the financing of the educational activities and for the determination of the allowed number of new students is the scientific performance in the field. In our opinion, the educational and the scientific activities should be evaluated and financed independently[161]. The Strategy for the development of higher education in Bulgaria and its accompanying Action plan [2] provide for differentiated financing of science and research based on results and performance. This is the correct approach, but the financing of the educational activities (as is specified in Government Decree №64 [1]) should be "untied" from the scientific achievements and be evaluated on its own.

The measure in the Decree can be potentially counterproductive. A look at the Bulgarian University Ranking System [3] shows that there are universities with good student realization and mediocre or poor research results. If the goal is to improve scientific performance, using student admission numbers as a lever is not the way to do it[162]. Educational performance may fail to pull up scientific performance – instead the latter may drag the first one down;

- It doesn't lead to dynamic behavioural changes

The government decree creates winners and losers, but it stimulates neither of them to change their behavior. We can't expect that universities will invest human, financial and time resources to improve indicator performance, if realistic improvements can't lead to tangible and meaningful benefits for the universities. For them, the rational reaction would be to passively accept the place, assigned to them by the provisions of the normative acts. To achieve its goal, the reform relies on a one-time static effect coming from the (eventual) shift of students from the losing to the winning universities, without an accompanying push for continuous quality improvements.

The assumption is that quantitative changes lead to quality changes. But the winning universities have no stimuli to improve the educational process beyond its current state, because the reform criteria ensure that they will keep their lead at least in the midterm. Additionally, the winning universities will still face the adverse effects of the principle that state subsidies depend on the number of students.

How should the reform look like?

- It should not create winners and losers, but stimuli for sustainable change in the behavior of every university and every student towards better quality of education;

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[161] This is an issue that deserves special and extensive treatment elsewhere. Here, suffice to say, we think that this separation is more justified for the bachelor degree, as this degree provides broad and basic knowledge and skills and is to a much smaller extent a function of the research potential of the educators. This is not the case for the master degree and especially at the doctorate level, where scientific performance and results are often both an input and an outcome of the educational process.

[162] Probably the assumption behind the measure is that the threat of losing financing for educational activities will double the universities' efforts to excel at science and research. While it is a possible outcome, it is not the only, and even not the most likely outcome. The positive scenario will unfold if the current research results are due to slack research capacity improvement is a matter of mobilization. The negative will ensue when the results are due not to underutilized, but to low research capacity in the first place. Capacity building is a slow process and the drop in educational performance, being the result of lower financing, will outpace the expansion of research capacity.

- It allows demand and supply to meet in the existing educational institutions beyond the framework of the administrative-financial limitations[163].

Universities should get the opportunity to provide paid education to students, as long as the educational capacity allows it. The government is justified to plan the admission in universities insofar as taxpayer money is involved, but it should not determine the number of students in principle. A weak point of the reform is that it relates current admission to the current needs of the labour market. The admission of students and the financing of the higher education should consider the needs of the market in 10 or 15 years. It is possible that these needs will be different then and that the market will face shortages of skilled labour which are the result of inadequate planning. Paid education to some extent hedges against this risk. The multitude of individual decisions can correct for a mistaken administrative decision by leading to the education of different specialists, thus making up for the mistake. And if the direction of the administrative reform turns out to be the right one, those, who studied something else, will lose. But they will lose their own money, not the taxpayers'. They should be free to take that risk.

The people who want to pay for their education can now do it in private universities, which are outside the scope of the reform. But there is another problem. Private and state universities are not on equal terms, because the first are allowed to provide paid education, while the latter are not[164]. This is above all an important procedural issue, but being procedural puts it outside the scope of the current analysis. But the situation can be also approached from the effectiveness point of view. We can expect that after the reform and because of the limited admission, there will be redirection of students from state to private universities. However, many state universities with limited student admission due to unsatisfactory performance on reform indicators, are actually placed higher in the Bulgarian University Ranking System and have higher accreditation scores than some of the private universities. Because of that, even the static effect of the reform may not materialize. Instead of leading to more students going to better universities, it will cause redistribution of students from all state universities that are not top performers to the few top performing state universities, as well as to a large number of private universities, placed all over the scale of the rating system, including its bottom.

In line with the features of a good reform, described above, below we offer three variants for change, that can stimulate the desired behavior by the universities. The first two variants are presented insofar as they demonstrate the evolution and the logic of the third variant. We also examine an aspect of the financing that can potentially transform students from passive objects to active participants in the reform, which stimulates them to improve their own educational performance.

The universities

Variant 1

At the basis of the reform lies a single state exam (from now on called SSE) in the field[165]. The specific technology for the organization of the exam is a matter of additional discussion (see Mihchev for an example [3, pp. 92-94]). The average result on the SSE will determine the average subsidy (in the respective field) per student for the next year for each university. This is a relatively just and more importantly – effective criterion for evaluation of the quality of education, because it is entirely under the control of the universities and any change will be reflected in the student admission numbers. Table 1 shows the average result on the SSE (with randomly generated numbers between 3 and 6) for 10 universities.

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[163] It is possible for state universities at present, but just for 5% to 10% of the total admission of students, which is too little to make a difference.

[164] Actually, for equal treatment, private universities should be included in the state subsidy scheme on equal terms with state universities.

[165] They could be possibly two. One in the field and one in the specialty. Then further calculations will be based on the average of the results.

Table 1: Average results on the single state exam

university	uni1	uni2	uni3	uni4	uni5	uni6	uni7	uni8	uni9	uni10
average result	4,76	4,21	4,79	5,38	4,12	5,11	4,40	3,98	3,59	5,16

Another important feature of the proposed reform is that by default it assumes that students pay for their education entirely. If universities receive a subsidy per student which depends on the average result on the SSE, students in universities with better results will pay lower student fee than students in universities with lower results. The scale for the distribution of the results is based on the averaged results for all universities. Table 2 shows the scale where an interval equals one standard deviation and the step per interval is 10%. In principle it would be more appropriate to use a scale with an interval of half the standard deviation and a step of 5%, but for the purposes of the presentation a simpler scale is better.

Table 2: The subsidy scale at different average results on the SSE

scale	below -2 st. dev.	from -2 s.d. to -1 s.d.	from -1 s.d. to the mean	from the mean to +1 s.d.	from +1 s.d. to +2 s.d.	over +2 s.d.
average result	below 3,39	from 3,39 to 3,97	from 3,97 to 4,55	from 4,55 to 5,13	from 5,13 to 5,71	over 5,71
subsidy	0%	10%	20%	30%	40%	50%
university	-	9	2,5,7 и 8	1 и 3	4 и 10	-

According to the positioning in Table 2, university 9 will get as a subsidy 10% of the tuition fee, universities 2,5,7 and 8 – 20%, universities 1 and 3 – 30%, and universities 4 and 10 – 40% of the tuition fee. This is differentiation among the universities for the respective field. Additional differentiation among the fields can be introduced by adding a fixed component of the subsidy, depending on the priority of the field. The added fixed component can be for example between 0% and 30%. Let us assume that for the respective field it is 10%. Then university 9 will get in total a subsidy of 20%, universities 2,5,7 and 8 will get 30%, universities 1 and 3 – 40%, and universities 4 and 10 – 50%.

The total subsidy is given in Equation 1:

$$s = a + v \tag{1}$$

where *s* is the total subsidy, expressed as a percentage of the tuition fee, *a* is a subsidy between 0% and 30% depending on the importance of the field, and *v* is a subsidy of 0%-50% depending on the relative performance of the university on the SSE.

This way of financing can be abused by the universities. They can get financing for the whole period of studies for a large number of students by letting them reach the final semester. Then the universities can raise the evaluation bar, so that only the best students make it to the SSE. This tiny share of the students will get good results, which will serve as a basis for the financing of a much larger number of students in the following year.

Variant 2

The flaw above can be avoided if we take into account the share of the students who sit for the single state exam. The total subsidy will be determined with Equation 2:

$$s = a + v_k \tag{2}$$

where v_k is a subsidy amounting to 0-50% of the tuition fee and is determined on the basis of the average result on the SSE and the share of all students (who started to study from the first semester

in the university) who sit for the SSE. Table 3 shows that University 1 has an average exam result of 4,76 and that 45% of the students, who were enrolled in year one, made it to the exam. The participation bonus in the coefficient will be 4.76 * 0.45 = 2.14, and the coefficient itself will be 4.76 + 2.14 = 6.90.

Table 3: Coefficient based on the average result and the share of students

university	uni1	uni2	uni3	uni4	uni5	uni6	uni7	uni8	uni9	uni10
average result	4,76	4,21	4,79	5,38	4,12	5,11	4,40	3,98	3,59	5,16
% share of students	45	27	58	31	24	30	22	57	26	16
addition	2.14	1.14	2.78	1.67	0.99	1.53	0.97	2.27	0.93	0.83
coefficient	6,90	5,35	7,57	7,05	5,11	6,64	5,37	6,25	4,52	5,99

The results, the positioning, and the subsidy per student for each university are shown on Table 4. If we assume that the fixed addition for the importance of the field is 10%, then University 9 will get a subsidy of 20% of the tuition fee, universities 2,5,7 and 10 – 30%, universities 1 and 8 – 40%, universities 3 and 4 – 40%.

Table 4: Subsidy scale with average result and share of students

Scale	below -2 st. dev.	from -2 s.d. to -1 s.d.	from -1 s.d. to the mean	from the mean to +1 s.d.	from +1 s.d. to +2 s.d.	over +2 s.d.
average result	below 4,12	from 4,12 to 5,10	from 5,10 to 6,08	from 6,08 to 7,05	from 7,05 to 8,03	over 8,03
subsidy	0%	10%	20%	30%	40%	50%
university	-	9	2,5,7 и 10	1 и 8	3 и 4	-

This kind of subsidizing stimulates the universities to get as high result as possible with the largest number of students, which is completely in line with the goals of the educational reform. The weakness of Variant 2 of the proposed reform is that v_k is based entirely on the relative position of the university. We should consider the absolute movement on the scale both as average results and as the share of the students who have taken the exam. Theoretically, it is possible that all the universities advance substantially, but this will not affect their financing, because the relative positioning will remain the same.

Variant 3

To avoid putting the universities at disadvantage when they all improve their results, we need an additional component in the estimation of the subsidy coefficient that reflects absolute changes. Then the subsidy will be:

$$s = a + v_k + f \tag{3}$$

where *f* is the coefficient for the university from Table 3, multiplied by 2 (or another number between 1.5 and 3), given as percent. Then the subsidy for University 1 will be 10% + 30% + 2 * 6.90% = 53.8%. If we assume that the tuition fee per semester is 1000 levs, the subsidy will be 538 levs, and the average fee per student will be 462 levs.

The students

It is very important that the reform involves the students as active participants, instead of treating them as passive subjects. That is why we can introduce internal differentiation within each university based on the performance of the students. If the starting point is the fee and subsidy from *Variant 3*, the fee per student will be 462 levs, but not every student will pay this fee. It will vary within certain limits, for example +/-50%. The individual fee will be estimated using Equation 4:

$$it = avg - \frac{\frac{int}{n_{st}} \times pos_{st}}{100} \times avg$$

(4)

where *it* is the individual fee, *avg* is the average fee per student after subsidy in the respective field and university, *int* is the number of percentage points in the interval, n_{st} is the number of students from the cohort in the field in the university, pos_{st} is the position of the respective student relative to the median. If we assume that the students in the field are 30 and the individual subsidy is allowed to vary +/-50%, the student who is 12 positions above the median will have a fee of 462 – 184.8 = 272.2 levs, which we get from:

$$it = 462 - \frac{\frac{2 \times 50}{30} \times 12}{100} \times 462$$

(5)

For a student who is 12 positions below the median, the fee will be 462 + 184.8 = 646.8 levs. The system will stimulate every student to put in more efforts to get higher grades. There is no danger of "grade inflation", because the positioning is relative.

CONCLUSION

The reform in the higher education in Bulgaria is characterized by certain weaknesses, related to the inability to provide adequate stimuli for either universities or students to change their behavior towards improving the quality of education. The alternative presented here offers a possible way to circumvent these weaknesses. The advantages of the alternative reform have been examined from the effectiveness point of view.

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