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In the Széll Kálmán Plan the government committed itself to transform the higher education system; this change is necessary and actual.

Reduction of neither the state-controlled higher education institutions, nor the number of students participating in higher education is justified: in an international comparison the number of Hungarian state-controlled institutions is significantly below the European average; in terms of the number of state financed students per one million inhabitants our arrears is considerable compared both to the surrounding and to the European developed countries. Number of people graduated in higher education in Hungary is below the OECD and UE19 average. In terms of higher education expenditures Hungary is amongst the last countries. However, government investments into higher education return significantly; Hungary is within the leading group in terms of this index. While rate of employment in basic and secondary education is below the average of OECD and EU19, our index in higher education is average or even above that. In the case of an employee with a higher education qualification the increased tax incomes mean approximately 20 million Ft additional income as compared to the case of a physical employee.

Education directly defines the development path of a country; therefore it is extremely important for trends of modification to be professionally established and to serve growth.

Keywords: higher education, return, economic and social benefit

1. Preamble

Educational policy and education in general are currently undergoing a considerable change in Hungary; these changes are highly relevant both in the public and in the higher education sectors. The education of the intellectual elite is a highly important responsibility for every competitive nation. However, *what kind of and what size of higher education sector does the state need*? To answer this question, we should first consider the government's involvement in this sector. As qualified labour force serves the achievement of economic and socio-political objectives set by prevailing governments, the state needs to get involved in the management and organization of education in several fields. The government is to undertake the tasks of determining the main directions of educational policy, of allocating the required means, and of providing for the related legislative framework. On the one hand, the state ensures the institutional frameworks (maintains buildings, employs professors, etc.), on the other hand, it establishes the various conditions for those being part of the education sector (youth hostel accommodation, scholarships, etc.). *The state* performs all this, because *along with the taxpayers it expects a certain rate of return for the maintenance of the education sector*.

Those being part of the higher education sector represent a special interest group, and everyone's ultimate goal in this interest group is to conclude a "good deal". From the aspect of the "result" it is highly important for those being part of the education sector to be able to use and make use of their acquired knowledge to the best possible extent. For the achievement of successful cooperation,

competitive and modern knowledge is required, which can be made efficient use of in the labour market, but this can only be provided by a modern education system.

By the introduction and implementation of Act CCIV of 2011 on national higher education, *today the higher education sector in Hungary is undergoing an important transformation, which will fundamentally change the operation of universities and colleges*. [It shall change] their operation as to their fundamental activity, and their management providing for the conditions to implement that fundamental activity.

In terms of the basic activities, the new challenges not only raise, but necessitate the rethinking and reconsideration of the role and mission of the higher educational sector, as well as the determination of new requirements pertaining to education, research and other services. For the renewal and development of higher education, which is inevitable for the avoidance of ultimate disattachment, it is necessary to determine future development priorities and the most important responsibilities facilitating their achievement.

By providing an analysis of the current situation, this study aims to find answers to issues of primary importance[1], which are often raised today in terms of the higher education sector, while certain characteristics of the Hungarian higher education sector are intended to be analysed and compared to other international examples.

2. Development of the Institutional Framework of the Hungarian Higher Education Sector

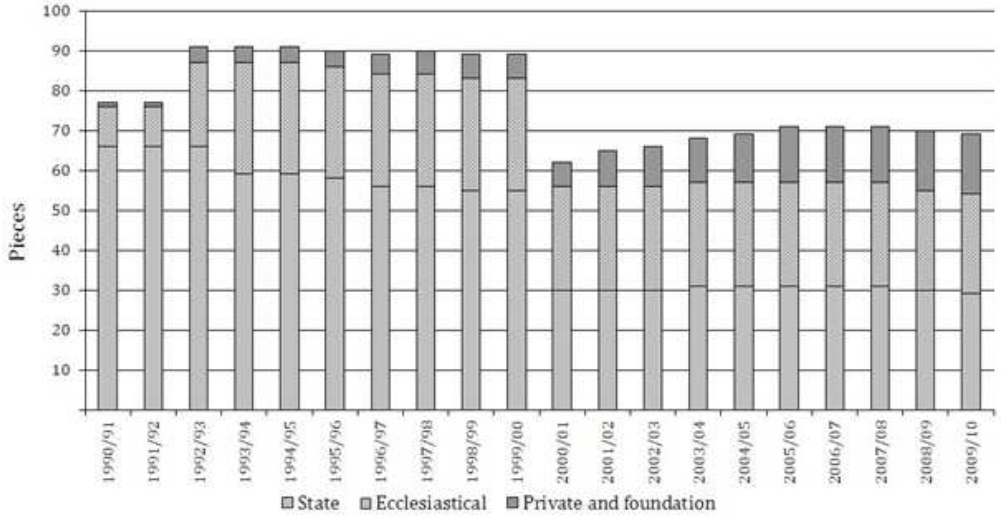
One of the important changes in the Hungarian higher education framework is related to the ratification of the independent higher education act in 1993, which rendered it possible for non-state financed (ecclesiastical) higher education institutions to start secular specializations, in line with those operated by the state financed institutions. From that point of time, the number of state financed institutions started to decrease, - even though to a very modest extent. However, the fundamental reason for the decrease in the number of the institutions was not due to their termination, but their integration. The increase in the number of ecclesiastically financed institutions was threefold by 1993 already, while the number of private and foundation institutions is increasing even today (Figure 1).

In 2000, the number of state financed higher education institutions decreased to almost half of their previous number[2], as a result of government measures attempting to reorganize the subdivided higher education institutional framework. However, the actions primarily targeting to achieve a more cost effective higher education sector yielded only partial results, as although there was a decrease in the number of higher educational institutions, but no institution was actually closed.

[1] Does it make sense to compare public education usually performed at a lower standard to the elite education involving less people, but performed at a higher standard? Could less well-to-do people be gradually "excluded" from higher education? Is it worth attempting such a thing? Is there a need for so many highly educated people? Does higher education cost too much? Does the theory of human capital make any sense? Is it worth investing in higher education? Does education accelerate economic development? Are our postgraduates competitive enough, and if not, what changes should be introduced to improve this situation?

[2] In the 1999/2000 academic year there were 55, while in the 2000/2001 academic year there were 30 state financed higher education institutions in the country.

Figure 1: Changes in the number of higher education institutions in Hungary between 1990-2009



Source: Internally developed as per NEFMI statistics (NEFMI, 2010)

Today there are 69 higher education institutions in Hungary, comprising 18 state financed universities and 11 state financed colleges, the rest are either private or foundation institutions, or ecclesiastical institutions. *Recently the opinion has been increasingly vocalized, according to which there are too many higher education institutions in Hungary. But is this really the case?*

The international analysis of the number of higher education institutions is not an easy task to start with, as this index is not listed among the OECD indicators. By looking at the average data of 29 European countries, the ratio of state financed higher education institutions is 63% of all higher education institutions, whereas this figure is 45% in Hungary, *namely the percentage of state financed institutions is significantly lower than the European average*[3].

By comparing the absolute and nominal (per one million people) indicators of Norway and Austria having lower-number populations than Hungary[4], the Czech Republic having approximately the same number of population as Hungary, of Poland having an almost four times higher number of population, as well as of Germany, playing a leading role in Europe in many aspects, we can reach the following conclusions. In 2008 there were 31 state financed higher education institutions in Hungary, whereas this figure was 38 in Norway, 42 in Austria, 130 in Poland, 142 in the Czech Republic and 234 in Germany. The number of stated financed higher education institutions per one million people was 2.8 in Germany, 3.1 in Hungary, 3.4 in Poland, 5.1 in Austria, 8.0 in Norway and 13.9 in the Czech Republic. These numbers clearly demonstrate that the number of our *state financed higher education institutions is not extraordinary either from an absolute, or from a nominal point of view* in terms of the European countries listed above.

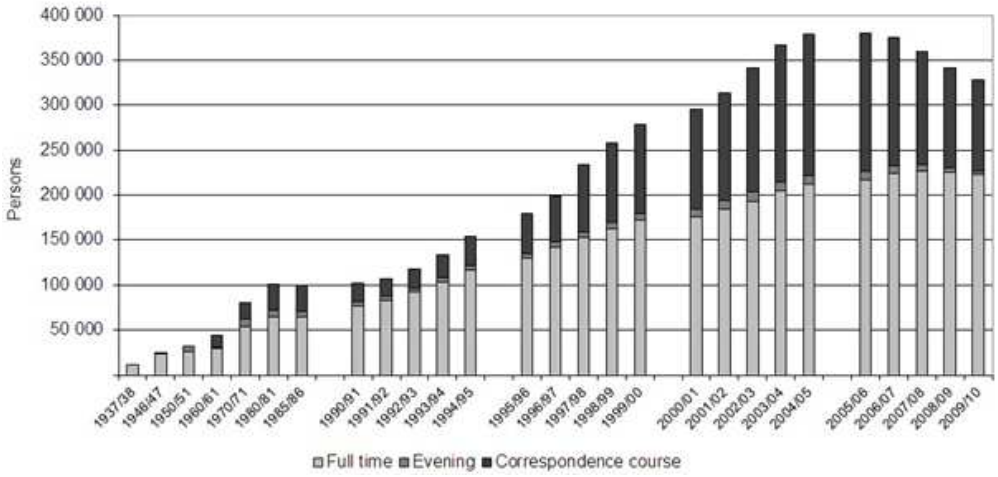
3. Data on the Number of Undergraduates

At the turn of the 20th century there were approximately 10,000 students involved in university education, which number was increased by four and a half times by the start of the 1960s. In the

[3] In Hungary the 55% ratio of ecclesiastical, foundation and private higher education institutions significantly exceeds the average ratio of 37% of the 29 European countries taken under review.
[4] As per 2008 data: 4.763 million in Norway; 8.264 million in Austria; 10.221 million in the Czech Republic; 38.166 in Poland; and 82.210 million in Germany.

Western countries it became evident thirty to forty years ago, whereas in Hungary it became evident in the past few years that the massification of higher education is inevitable: globally there is an increasing interest in studying, and in the developed countries there is no government that would have the courage to prevent that. "We are living in the age of supermarketed knowledge, as there is an increasing mass of people wanting to consume it, however, they are not interested in learning it in the same manner and form, as it had been taught before" (Lukács, 2002a). Economic development in the 1960s and 1970s made it possible for many to join higher education, and the number of postgraduates started to increase gradually and considerably from the 1970s. The term "knowledge based society" was moved into the focus point of the social and cultural strategies of the developing and developed countries, as well as of supra-national organizations. By the second half of the 1980s the increase in the number of undergraduates started to stagnate, the next radical change in numbers took place after the change of the political regime. The number of higher education students[5] almost quadrupled between 1990 and 2005, the recent past was characterized by a fairly intensive increase in the number of undergraduates both in the OECD, and in the EU 19[6] countries. In recent years, however, the number of undergraduates in Hungary has demonstrated a declining tendency compared to the record data of the 2005/2006 academic year, and on the basis of available demographic data[7] this tendency is expected to continue (Figure 2).

Figure 2: Trends regarding the number of students of higher education institutions in Hungary between 1937-2009



Source: Individually edited as per NEFMI statistics (NEFMI, 2010)

In the 2009/2010 academic year the total number of undergraduates at the Hungarian higher education institutions was 370,331, of which 320,919 students (89.7% of the total number of undergraduates) pursued their studies in one of the 29 state financed institutions. Lately there has been an increasing

[5] The data on the number of undergraduates includes the number of students involved in university and college education, in post-secondary level vocational training, BA and MA education, full-time education, special vocational further training and PhD programs, irrespective of the educational framework.

[6] In the OECD statistics many indicators imply average values from "EU19" countries. The reason is that factual or predictable data are available for these European Union member states. in the OECD statistics EU19 countries consist of the following: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, The Netherlands, Portugal, Spain, Sweden, United Kingdom, Czech Republic, Hungary, Poland and Slovakia.

[7] http://hu.wikipedia.org: The decrease in population in Hungary has been 737,000 since 1981 according to the data of the Central Statistical Office (KSH) (In April 2011 the estimated number of the population was 9,972,000.) In the period between 1988 and 2009 the country's migration gain was 363,504, therefore, without the minority Hungarians (from across the borders) migrating to the country, the decrease in population would exceed 1,000,000.

pressure to reduce the number of students attending higher education institutions. But does it seem reasonable to reduce the number of postgraduates?

As per 2008 data, Hungary stays behind all the countries involved in the survey in terms of the number of undergraduates (21,324 students*) attending state financed institutions per 1 million inhabitants*. The number of undergraduates attending state financed institutions per one million inhabitants is 24,639 in Germany, 28,974 in Austria, 33,211 in the Czech Republic, 37,970 in Poland and 38,409 in Norway.

By looking at all the European countries up to the eastern borderline of the European Union, the number of state higher education institutions per one million inhabitants is 5.7, and the number of undergraduates is 34,000.

According to 2008 data, 19% of the adult population attended in post-secondary education, while 61% and 20% of the adult population held secondary and elementary level educational certificates, respectively. From 1997 the number of people holding post-secondary certificates in Hungary was gradually increasing at a rate exceeding the average increase in the OECD and EU 19 countries. In 2008 the average data taken from OECD countries indicated that 29% of the adult population held post-secondary certificates, while 44% and 28% of the adult population completed secondary and elementary level education, respectively (Table 1).

Table 1: Tendencies in education levels in the age group of 25-64 (1997-2008) (data in %)

Description	Level of education	1997	1998	2000	2005	2006	2007	2008	Average annual growth rate 2008-1998
Hungary	**Elementary**	**37**	**37**	**31**	**24**	**22**	**21**	**20**	**-5,8**
	Secondary	**51**	**50**	**55**	**59**	**60**	**61**	**61**	**1,9**
	Post-secondary	**12**	**13**	**14**	**17**	**18**	**18**	**19**	**3,8**
OECD average	Elementary	36	37	36	31	30	30	29	-3,1
	Secondary	43	42	42	44	44	44	44	0,9
	Post-secondary	21	21	22	26	27	27	28	3,4
EU 19	Elementary	36	38	37	30	29	29	28	-3,3
	Secondary	46	44	44	46	47	47	47	1,2
	Post-secondary	18	19	19	24	24	25	25	3,5

Source: OECD (2010)

By focusing on higher education data, it can be stated that *in Hungary the percentage of postgraduates in the age group of 25-64 remains below the OECD average and stays behind the average of the EU 19 countries*, despite the increase recorded in recent years. By looking at the higher education enrolment ratios leading up to 2006, the situation seemed promising, the number of graduate students increased abruptly as a result of the intensively increasing number of new entrant undergraduate students. Considering the fact, however, that as of 2006 the higher education enrolment number of students has been gradually decreasing, and with the latest news about drastic cuts in the number of state financed quotas taken into account, *it can be plausibly assumed that in the future the ratio of*

*undergraduates in the adult population will significantly lag behind the average figures of the OECD and EU 19 countr*ies.

The greatest challenges of university education are represented by the demands of a knowledge based society[8] and by the requirements of globalization, which has been manifested in the expansion of higher education. In the developed countries, the number of people pursuing higher education studies has been steadily increasing since the 1960s and 1970s. We have seen examples, where this increase stagnated in a country for a while, but there has been no example for a total reversal. In Hungary the number of new entrant undergraduates represented the equivalent of 65% of those leaving secondary school, which corresponded to the average of the region, however, it stayed behind the 70% ratio of the Western countries (Molnár, 2011). Comparing Hungary to the OECD and EU 19 countries, and considering the pursuit targeting national competitiveness, *the cut-down of the number of undergraduates in state financed institutions and of those involved in post-secondary education does not seem reasonable* (Bazsa, 2011).

4. Structure of Higher Education

It is the responsibility of the educational policy to ensure that the available resources are best utilized to the benefit of the economy. It also requires that feedbacks from the labour market are taken into consideration, which are to be aligned with the training capacities.

"The state wastes tens of billions of Forints each year by having a misalignment between the structures of higher education and the requirements of the labour market. If higher education technical education continues to decline, the processing industry may be deprived of its supply of labour force. In the competitive sector there has been an increased demand for postgraduates of technical faculties, however, the higher education sector continues its expansion towards education in the humanities, and does not, or does only fairly slowly respond to market demands" (Széll Kálmán Plan, 2011).

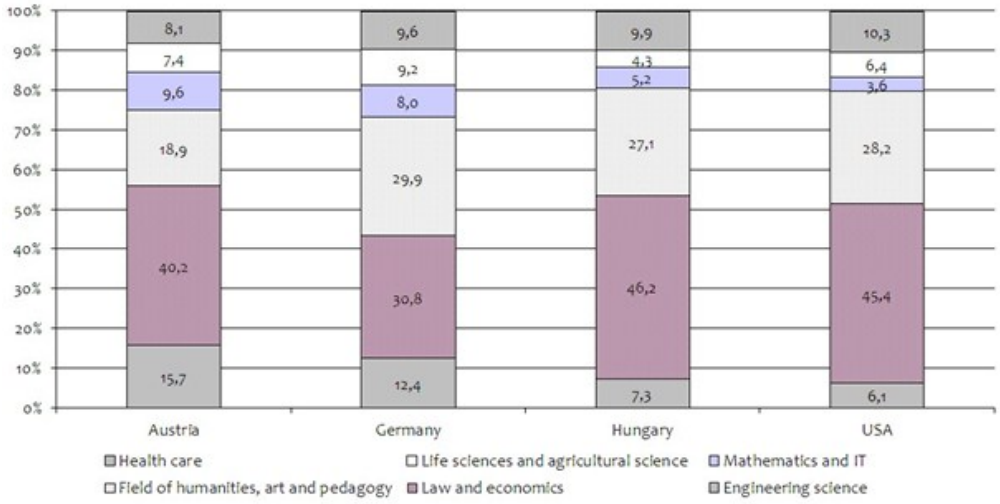
During the years of the change of regime, in the Hungarian higher education sector 37% of the undergraduate students attended teacher training courses, 20% attended technical faculties, 10%-10% pursued healthcare and economic studies, respectively, and 4-5% studied at legal, social sciences and agricultural faculties. By 2009 the following changes occurred with respect to the educational areas (Figure 3).

1. The majority of the students (24.1%) pursues economic studies, in the past 20 years the number of students studying in this areas has become eightfold. Since 2006 the popularity of studying economics has been declining, in four years' time the rate of change has reached -17%.
2. In 2009, 15.8% of the students pursued technical studies. By 2009 the number of undergraduates studying at technical faculties exceeded the 2005 data of over 50,000 students.
3. In the past 20 years the biggest hit was suffered by teacher training faculties. While in 1990 approximately 40% of the students pursued related studies, by 2009 this number fell below 7%.
4. In 1990 1.6% of the undergraduates studied at faculties of sciences, while today this ratio is 3.7%.

[8] In 2000 the EU established in Lisbon that by 2010 the Community should become the world's most competitive, most dynamically developing knowledge based economy (Keczer, 2007).

Figure 3 offers a comparison of the Hungarian education structure to the same in Austria, Germany and the US. In Hungary, legal and economics educations are significantly more prevalent than in the other two European countries, however, in the education fields of engineering, mathematics and information technology, as well as of life sciences and agriculture we fall behind the Austrian and German figures.

Figure 3 Structure of education in certain OECD countries, 2008



Source: OECD (2010)

The structure of education has undergone considerable changes in the past 10 years. As there was an increasing demand for postgraduates in the labour market, the institutions attempted to adjust the range of their educational services, both in terms of the theoretical and practical fields. Practical education is in theory adjusted to the demands of the labour market[9], which are being inevitably transformed by the ongoing technological developments and globalization processes. *The higher education sector needs to have an increasing number of new specializations certified to be able to keep abreast with market demands*[10]. The pressures of development and compliance with market demands require a transformation of the fields of higher education, in the process of which the opportunities and potentials giving ground to a breakthrough of the country should be inevitably taken into consideration. On the one hand, the areas where progress is imperative should be taken into account, e.g. "The development of high added-value industrial sectors (health care industry, high-tech, innovation R+D, green economy) requires the improvement of the domestic educational fields of natural sciences and engineering" (Széll Kálmán Plan, 2011). On the other hand, however, the issue of over-education should be resolved. *The higher education sector could benefit (at last) from the compilation of an education development strategic plan partly based on and leveraging Hungarian values*. The world has changed around us, and we need a competitive higher education sector, and if the higher education section in general is said to be being industrialized globally, we need to accommodate. Today's Hungarian higher education is still in a mulish condition: it has been affected by massification, but it is still operating in an indefinable "quasi market" framework, which is just as much determined by customary habits, as by the pressure of meeting global market expectations (Lukács, 2002b).

[9] Compliance with the demands of the labour market is not an easy task. On the one hand, it is difficult to foretell what the demand will look like in 5-10 years' time, and on the other hand, compliance is a long-term process, higher education periods last for a minimum of 3 years.

[10] Széll Kálmán Plan (2011): "*The structure (and institutional scheme) of higher education is currently distorted, the services offered by the sector are not in alignment with the demands of society and of the labour market."*

5. Achievements of the Higher Education Sector

According to the arguments and counterarguments associated with the support of and rate of use of the higher education sector, both the state and those involved in higher education are considerably interested to maximize the number of highly qualified people holding degrees.

In the view of Friedman, *the state is expected to spend on higher education, as a significant volume of public benefits is created by education* (Friedman, 1996). It is a fundamental question from the state's perspective what those public benefits are and if the investments in the higher education sector are expected to yield returns. The effect of education on economic development is best explained by the concept of human capital, as proposed by Schultz (1983). According to his theory, *human capital* is similar to *investments*, which represent the *final results of costly and time consuming procedures*. Human capital equally contributes to the productivity of labour force and to entrepreneurship. If a student obtains his/her degree, it represents direct profit both on the state's and on the employee's side. From the state's perspective, profits are associated with *higher productivity*, *higher tax incomes and a higher level of consumption* in exchange for lost time. *Highly qualified labour force tends to be more flexible, cross training* and finding employment in new fields are made easier, i.e. this may *decrease* the amount of *potential transfer payments* to be made by the state. On the employee's side, higher qualification creates *better employment opportunities*, *higher wages*, which result in *higher savings*. It results in *higher employee mobility*, employees will *find employment* in other vocations easier, and they will be less affected by the labour market's changing demands.

Higher education qualifications also entail indirect financial benefits, which although are more inconceivable than direct benefits, however, their existence is unquestionable. The state can perceive the indirect benefits of higher education by way of a higher sense of social mobility, *lower crime rates, and increased number of charitable donations, better adaptation of new technologies* and by social diversion. The indirect benefits of the private sector are characterized by *better working conditions, higher social standing* and higher level of satisfaction, *improved health conditions* and *longer life expectancy*, an increased number of hobbies and spare time activities, and by personal fulfilment (Vossenteyn, 2004).

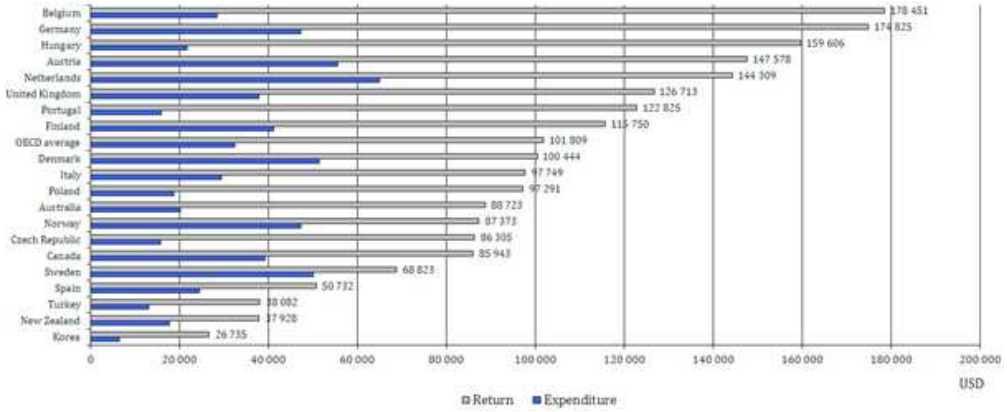
The analysis and quantification of the indicators attributed to the direct and indirect social benefits created by the higher education sector are not simple tasks, therefore the description of their rate of use is difficult.

6. Total Economic Benefits of the Higher Education Sector

According to OECD data, *Hungary is in a leading position*[11]*, in terms of the rate of returns of state funds invested in higher education*, as the rate of return is 1.6 times higher than the average data in OECD countries, while our related expenditures are significantly lower. (Figure 4) *Higher education in Hungary benefits society to a higher extent than non-higher education trainings, and at the same time demonstrates the highest rate of return of all other training levels*.

[11] Portugal is listed first, where the rate of return is 7.7 times higher than the expenditures; Hungary is listed second, where the ratio is 7.4; Belgium is listed third with a ratio of 6.3. The ratio is the lowest with 1.8 in Norway, in other words the rates of return from the higher education sector exceeds the expenditures in each one of the countries taken under review.

Figure 4: Government funds invested in higher education and the related rates of return in OECD member states[12], 2006



Source: OECD (2010)

The effects of expenditures invested in education are reflected at a significantly later point of time, after 15-20 years. That is why it is crucially important how much is invested in education today. *What amount should the state spend on higher education?* It is not easy to answer this question, however, not impossible. *If the state's role in and expectations as to the higher education sector are clearly defined, if requirements are specified, then our higher education institutions may answer the question, by relying on their available data bases and by making use of the achievements of modern information technology, as to "what" they need to fulfil their tasks. Data supported by facts may provide objective grounds for the discussion of the pro and contra arguments.*

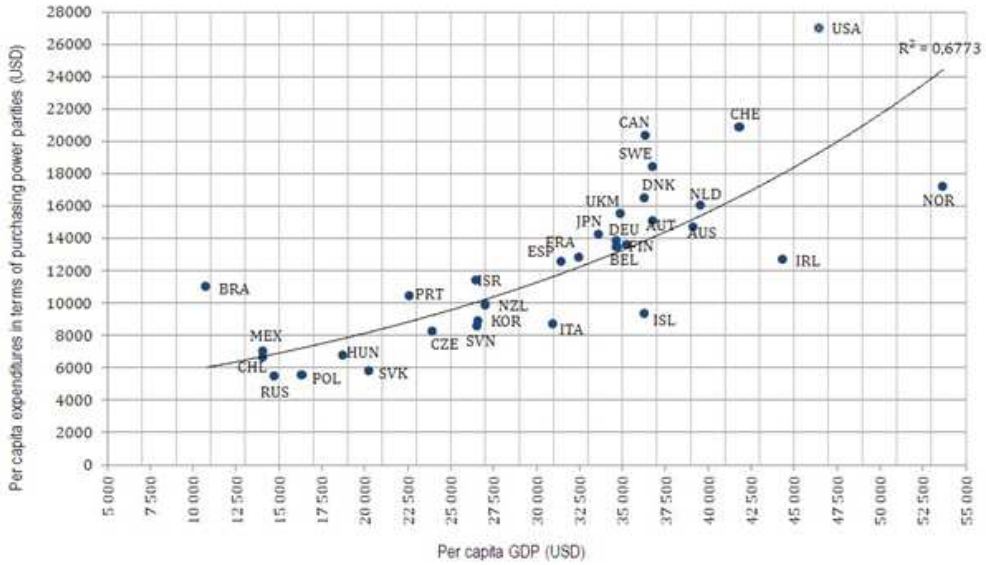
7. Economic Growth, as the Most Important Achievement of the Higher Education Sector

From the state's point of view, the primary achievement of education is manifested in economic growth. The most widely used and most popular indicator of the level of economic development and of the total output of the economy is the gross domestic product (GDP) indicator, an index-number that refers to the level and volume of all goods and services produced by a given country in a given year.

The OECD surveys clearly indicate that there is a significant correlation between the level of economic development and the level of expenditure devoted to education. The correlation coefficient between elementary and secondary education and the level of economic development is 0.83 and 0.88, respectively, which implies a strong relationship between the above criteria. In the case of higher education, a moderately strong (r^2=0.6254) correlation can be demonstrated between the GDP per capita figures and the expenditures used (Figure 5).

[12] According to the OECD study, the so-called "community costs" include lost tax revenues and expenditures. These include professors' wages, maintenance costs of the institutions and scholarships. "Community allowances" include increased tax revenues, and the decrease of social benefits derived from higher incomes. For the calculation of net present value, the interest rates of government bonds were taken into account as discount rates.

Figure 5: GDP per capita and expenditures per undergraduate in 2007



Source: Internally developed on the basis of data taken from OECD (2010)

Nonetheless, it is evident that those countries that spend more on higher education have higher GDP figures, i.e. they have higher developed economies.

8. Result pertaining to Tax Revenues

In order to assess the usefulness of higher education it is appropriate to compare expenditures to revenues. With regard to persons with a higher education degree, the cost of the education itself is viewed as expenditure, as well as the unrealised tax and contribution revenues, suffered by the state during the period of the education. As opposed thereto, the excess tax paid by the citizen in the course of his/her life is viewed as revenue.[13]

In 2008, the gross average earnings in the case of non-manual employees were HUF 274,866 per month, whereas net average earnings were HUF 157,163. This means that a non-manual employee contributed HUF 117,703 to the budget at monthly level, which represented revenues of HUF 1,412,436 per person for the state at annual level. Regarding manual employees the gross wage amounted to HUF 130,823, whereas the net amount thereof was HUF 90,940, i.e. one manual worker paid taxes of HUF 39,883 per month into the budget, which at annual level amounted to HUF 478,596. In total, we can establish that a person holding a university or college degree contributes HUF 77,820 excess tax per month to the state's expenditure. If we assume that an employee works for 34 years on average,[14] then a non-manual employee shall pay more taxes by over HUF 26.5 million during that period.

Expenditures pertaining to education are made up of three parts from the aspect of the state. On the one hand it dedicates funds to the sustenance of institutions, secondly it provides support to the living-

[13] We have no accurate information about how much more tax is paid by those persons who graduated from a higher education institution. Earnings are basically divided by the KSH [Hungarian Central Statistical Office] according to manual and non-manual employees. Those classified 1 to 4 as per the FEOR [Uniform Classification System of Occupations] are non-manual employees, the others are manual employees. Non-manual employees presumably also include a high number of secondary school graduates.

[14] Employment of a duration of 38 years was taken as a basis, from which the period of education was deducted.

related expenses of students, and thirdly, also unrealised tax revenues do represent expenditures, incurred during the period of obtaining the diploma. In 2008, in Hungary the state spent HUF 960,000 on one student on average. This means that the cost of education of a person holding a diploma was HUF 3,888 thousand on average[15]. During an average period of education, the unrealised average tax revenues, based on the above methodology, were approximately HUF 5,720 thousand. The total costs roughly amount to HUF 9,700 thousand, as compared to which there is the excess tax payment of HUF 26.5 million to be found.

When examining the time series of the average monthly tax and contribution payments of non-manual and manual employees, it can be stated that as compared to 2001, the tax payments by non-manual employees (103.3%) increases to a greater extent than those of manual employees (67.3%) (Table 2).

Table 2: Amounts of average monthly tax and contribution payments of non-manual and manual employees, and changes thereof, 2001-2008, 2001=100

Description		2001	2002	2003	2004	2005	2006	2007	2008
Non-manual	*HUF*	57,887	68,187	77,536	82,075	88,252	95,251	108,699	117,703
	%	100	117.8	133.9	141.8	152.5	164.5	187.8	203.3
Manual	*HUF*	23,833	26,270	24,681	25,877	26,656	30,027	37,188	39,883
	%	100	110.2	103.6	108.6	111.8	126.0	156.0	167.3

Source: Individually edited based on KSH (2011) data

The calculations are of approximate nature,[16] we did not take into account that these revenues and expenditures should be calculated as to present value. The above simple model solely highlight that it is worth investing in education also from an economic aspect.

9. Result pertaining to Labour Market

One substantial element of economic growth is that there should be sufficient qualified workforce available in the labour market.

Human capital has been described as a major tool for overcoming unemployment and low incomes, however, as opposed to that the new act on higher education under elaboration outlines a reduction in number of persons with regard to both state-supported education and education subject to tuition fee. "*The state plays an important role in the sustenance of the system of institutions currently fragmented, serving the above structure, which entails a significant burden to the budget. The efficiency and success of the role undertaken by the state may be improved by the reduction of the state-supported number of students and by the modification of the internal structure thereof*" (Széll Kálmán Plan, 2011).

It is a fact that the situation of new graduates entering the labour market is uncertain, for employees are not aware of what is behind the diploma of those just leaving the new educational system (Berde et al., 2006). It is a fact that around the millennium we already faced the situation where it became more difficult for career starters holding a post-secondary degree to find a job, but it is also a fact that those holding a post-secondary school degree are less affected by unemployment, in the case of educational levels this is where the rate of unemployment is the lowest.

[15] The average period of education is 4.05 years in Hungary (OECD, 2010)

[16] The individual calculation pertaining to the year 2008 may be viewed as a simplified quick estimate, int eh course of which the relevant data of the KSH were taken into account (KSH, 2010).

The analysis of the trend of the rate of unemployment between 1997-2008 calls attention to an important fact. While the value of the unemployment rate decreased at each educational level in the average of the OECD and EU 19 countries, in Hungary only the employment situation of those holding a secondary degree has changed in a positive direction (Table 3). This can clearly be attributed to the expansion of those getting into higher education.

Table 3: Trends of unemployment rates regarding persons of the ages 25 to 64, (1997-2008) (data in %)

Description	Degree level	1997	1998	2000	2005	2006	2007	2008	Average annual rate of increase 2008-1998
Hungary	**Elementary**	**12.6**	**11.4**	**9.9**	**12.4**	**14.8**	**16.0**	**17.3**	**4.7**
	Secondary	**6.9**	**6.2**	**5.3**	**6.0**	**6.1**	**5.9**	**6.3**	**-0.6**
	Post-secondary	**1.7**	**1.7**	**1.3**	**2.3**	**2.2**	**2.6**	**2.3**	**0.6**
OECD average	Elementary	10.1	9.4	9.0	10.5	10.0	9.1	8.7	-1.4
	Secondary	6.7	6.5	5.7	6.0	5.5	4.9	4.9	-1.8
	Post-secondary	4.1	4.0	3.5	3.8	3.5	3.4	3.2	-0.9
EU 19	Elementary	13.3	11.4	11.1	13.0	12.1	11.0	10.6	-2.7
	Secondary	8.4	7.4	6.6	6.8	6.2	5.4	5.3	-3.1
	Post-secondary	4.7	4.4	3.8	4.2	3.7	3.5	3.2	-1.5

Source: OECD (2010)

In 2000, in Lisbon the EU laid down the objective for the Community to become the world's most competitive, most dynamically developing, knowledge-based economy by 2010 (Keczer, 2007). One of the important elements of the strategy was represented by the increase of the rate of employment to 70%, in parallel with the mitigation of unemployment levels.

In the OECD countries *higher education plays an ever increasing role on the demand side of human resources*. Demand represents a move towards jobs to be filled by those with higher education qualifications from the direction of jobs that can also be filled by those holding a secondary school degree, the result of which is that the chances of obtaining a job in the labour market increase by the obtaining of a post-secondary qualification. It is employees holding a post-secondary degree who have the highest ratio chance of finding a job, i.e. they are represented among the unemployed – the layer constituting a problem for society – to a minor extent.

In respect of Hungary, whereas employment regarding elementary and secondary education is below the OECD and EU 19 average, as to post-secondary education the value of the indicator is average or above average (Table 4).

Table 4: Rates of employment by levels and gender, 2008 (data in %)

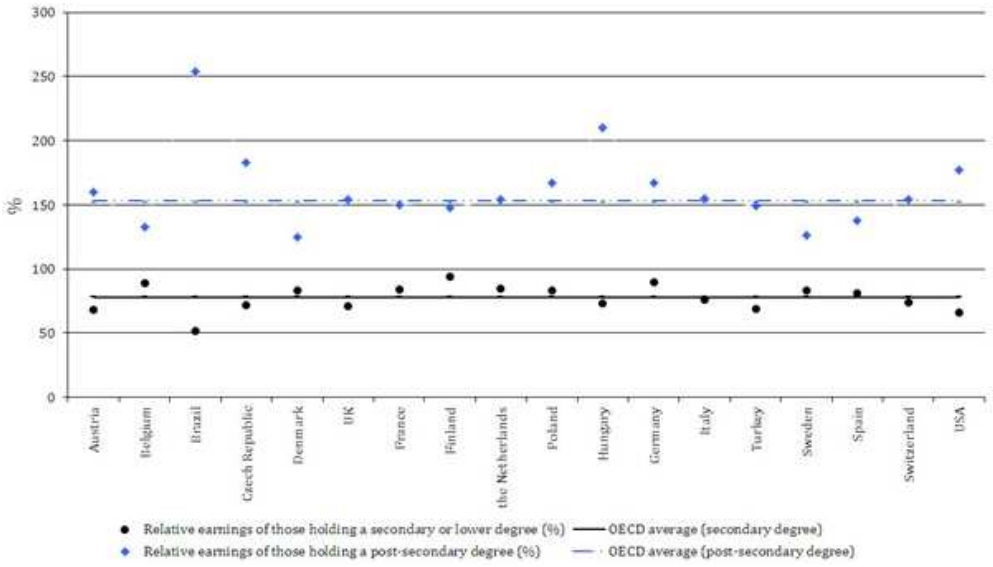
Description	Gender	Elementary level	Secondary level		Post-secondary level	
			ISCED 3C	ISCEBD 3A	B type	A type
Hungary	**Men**	**17.3**	**72.9**	**77.9**	**87.7**	**85.0**
	Women	**5.4**	**56.0**	**64.7**	**81.3**	**75.8**
OECD average	Men	64.5	84.1	83.4	88.1	89.8
	Women	37.0	65.2	66.5	76.9	78.2
EU 19 average	Men	58.1	81.9	82.5	86.5	89.7
	Women	36.1	64.9	68.7	79.5	82.1

Source: OECD (2010)

In Hungary, it is the unemployment of the layers holding a qualification lower than a secondary degree that causes social and economic problems.

Based on OECD data, the level of education and chances in the labour market are more dominant in Hungary than in other countries. The relative income of those holding a post-secondary degree is the highest in Hungary after Brazil (Figure 6).

Figure 6: Relative earnings of the population aged 25-64, pursuant to degrees, in the OECD and partner countries,[17] 2008



Source: Edited individually based on the data of OECD (2010)

10. How much do we spend on Higher Education?

Both the state and the private sector bear costs with respect to higher education. On the one hand, the state supports the institutions through contributing to operational and maintenance expenditure, and, on the other hand, also provides grants and other benefits for college or university students. The related expenses of the private sector include tuition fees, schoolbooks, sustenance fees, costs of living, etc.

The expenditure related to education can be analyzed from a number of different aspects: in general, it is usually analyzed with respect to the proportions of GDP, or with respect to the proportions of GDP per capita. This value indicates how much a nation spends on education in relation to its own productivity.

Based on OECD data, there are three very well separable financing systems at a macro-economic level:

1. High state and high private sector resources: state support exceeding 1% of the GDP, supplemented by private resources in the extent of approx. 1% of the GDP (United States [3.1%]; Canada [2.6%]).
2. High state and negligible private resources: the state support exceeds 1% of the GDP, but the extent of private resources is negligible. This financing is characteristic to most European countries.

[17] When compiling the publication Education at a Glance, data of 31 OECD member states and of 5 non-OECD member states were used. These are Brazil, Estonia, Israel and the Russian Federation. These countries are not members of the OECD, but may soon become its members.

3. Low state support and high private sector resources (Japan, Korea, Chile).

The extent of expenses spent on education depends on the national income available regarding the particular countries. The government of Hungary spends approximately 1% of its GDP on higher education expenditure, and the expenses of the private sector, roughly 0.1% of the GDP, are added to it. Examining the tendency of the indicator from 2000 onwards, in comparison to the 1.1% value characteristic of the beginning of the new millennium, the following years were characterized by a 0.1-0.2% decrease or stagnation (Table 5). Due to the increase in GDP, the 1% expenditure spent on higher education means an increased extent of expenditure; however, at the same time, however, the support of education did not increase, according to the data modified by the change of the consumer price index.

Table 5: Educational expenses in the percentage of the ÁHT (Act on the National Budget) and the GDP (2000-2009)

Year	Educational expenses		Support of post-secondary education
	In % of ÁHT expenses	In % of GDP	In % of GDP
2000	11.1	5.0	1.1
2001	11.4	5.0	1.0
2002	11.0	5.4	1.0
2003	12.3	5.7	1.1
2004	10.7	5.2	1.0
2005	10.4	5.3	0.9
2006	9.6	4.8	1.0
2007	9.5	4.8	1.0
2008	9.5	4.7	1.0
2009	9.7.	4.7.	n. a.

Source: OECD (2010)

Considering Hungary in an international perspective, it falls behind the OECD average by 0.5% and compared to the EU 19 average, the expenditure of Hungary on higher education in GDP % stays behind by 0.3 per cent. In 2007, Hungary managed to outrival only two OECD countries, Italy and the Slovakian Republic.

When translating the GDP-proportional expenses to specific numbers, the difference between countries becomes more apparent. Educational expenses per student can also be examined through a comparable price (e.g. USD) for the purpose of international comparisons. *Regarding educational expenses, Hungary is among the stragglers of the OECD countries, and this is all true for elementary, secondary and higher education*. In 2007, the higher education expenditures of OECD countries per student ranged between 5,500 and 27,000 USD. In Hungary, this same value was slightly over 6,700 USD, placing the country in the last third of the members.

Furthermore, the process of change regarding expenditures does not indicate a more favorable image either in Hungary. While in the OECD countries the increase in educational expenses per student has been a general tendency lately, yet Hungary is again among the last of the OECD countries, even regarding this indicator. Compared to the beginning of the new millennium, the educational expenses increased by 33% until 2007, but the number of students in the same period grew by 51%. This resulted in a decrease of 18% in expenditures per student in total (Table 6).

Table 6: Changes in higher education expenses per student (1995, 2007)

Description	Changes in expenses (2000 = 100)		Changes in No. of students (2000 = 100)		Changes in expenses per student (2000 = 100)	
	1995	2007	1995	2007	1995	2007
Hungary	**77**	**133**	**58**	**151**	**133**	**88**
OECD average	82	136	84	122	98	114

Source: OECD (2010)

It needs to be noted that the number of students increased much more intensively than the expenses in the course of the examined period.

Another reason for Hungary's backlog is economic recession. During recession periods, the efficient operation of educational systems is always caught in crossfire; on one side, there is the decreased extent of available resources, and on the other side, there is increasing the significance of investing in human capital, as one of the prerequisites of economic recovery is the acquisition of necessary competences and skills.

On the basis of the currently known higher education concept, it becomes distinct that *investment in human equity in Hungary is less supported, and this may presumably worsen the nation's already bad position*, if there are any indicators left to deteriorate further.

Similarly to Hungary, some other European countries were also unable to increase their expenditures spent on higher education to such an extent that they could maintain the earlier expenditure per student value. In the case of students of post-secondary education, the average expenditure per capita is even less than half of expenses of the USA in most of the European countries. However, the demand for more and higher quality higher education sooner or later will force the governments of most of the countries to make decisions, as more investments are required in higher education, therefore it needs to be decided whether the extent of state support or that of private financing should be increased.

As compared to the amount of state support, Hungarian higher education was characterized by a significant extent of resource deductions. The supervisory organ implemented two withdrawals just this year, and the recently published Government Decree stipulates further blocking and significant retention of balance-in-hand. The amounts withdrawn from the system mean more and more severe burdens on higher education institutes, and they will have to introduce restrictive measures in response to manage without the retained support. Most presumably, the solution will be the rationalization of the number of staff, as the existing infrastructure needs to be maintained and its costs can be only slightly decreased. Are the deductions taking place with respect to higher education really helping the government?

The forecast regarding the education related expenditure of the budget within the system of state finance was HUF 1,237,224 million in 2009 (it is 13.8% of the main expenditure of the central forecast for the year 2009). One fifth of that sum, namely HUF 252,713 million was spent on higher education, which is 2.8% of the main expenditure total of the central forecast (Table 7).

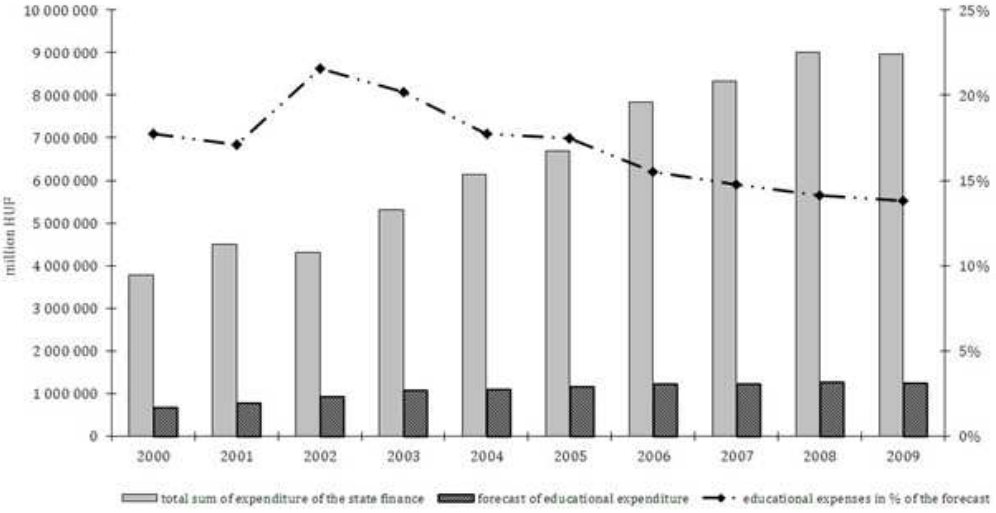
Table 7: Entire education and higher education expenditure aggregate amounts of the budget of the Republic of Hungary, 2000-2009

Year	Entire education		Higher education		
	Expenses forecast (at ruling price in million HUF)		Expenses forecast (at ruling price in million HUF)	Expenses in total % of expense forecast	Expenses in total % of education forecast
2000	672,943	17.76%	143,239	3.78%	21.29%
2001	770,879	17.10%	155,379	3.45%	20.16%
2002	932,529	21.58%	176,473	4.08%	18.92%
2003	1,071,456	20.18%	207,604	3.91%	19.38%
2004	1,089,090	17.76%	205,179	3.35%	18.84%
2005	1,170,113	17.47%	216,554	3.23%	18.51%
2006	1,216,135	15.50%	224,544	2.86%	18.46%
2007	1,228,401	14.75%	242,771	2.92%	19.76%
2008	1,275,107	14.14%	256,390	2.84%	20.11%
2009	1,237,224	13.81%	252,713	2.82%	20.43%

Source: Own editing based on the NEFMI (2010) and on the Act on the National Budget (2000-2009)

In the last 10 years, the total amount of the expenditure forecast of Hungarian state finance increased by 2.4 times, including the increase of the total amount of the expenditure forecast on education, increased only 1.84 times (this ratio in the case of higher education is 1.76). In 2000, educational expenditure was 17.8% of the total Hungarian expenditure, whereas by today, the same ratio decreased by 4%. This decline is a constant tendency since 2002 (when the proportion of educational expenditure was 21.6%) (Figure 7).

Figure 7: The total sum of the expenditure in the budget and the forecast of educational expenditure, 2000-2009



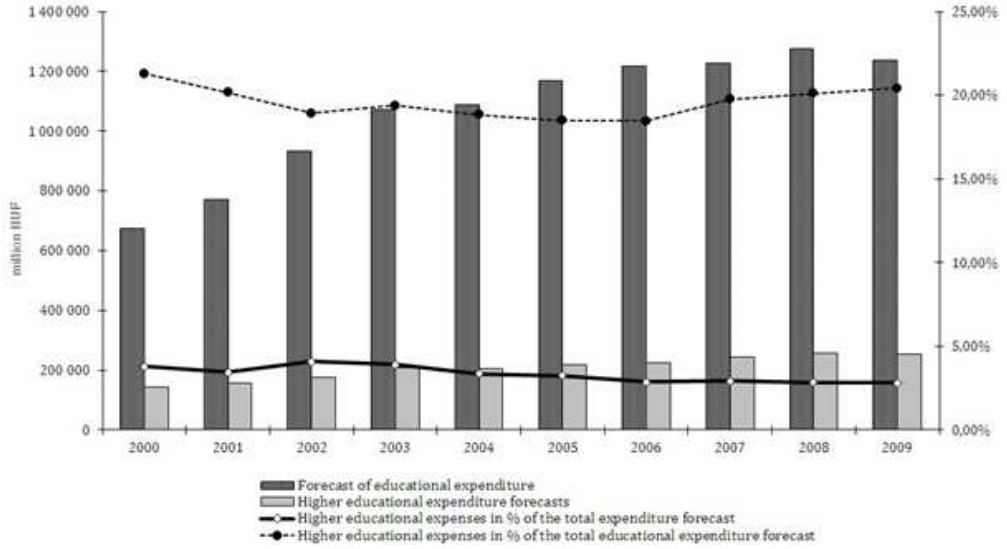
Source: Own editing based on the data of the NEFMI (2010)

The expenditure forecast of higher education increased every year until 2008, but the extent of its change is below the variance shown in the changes of the complete educational expenditure. *Less and less is spent on higher education trainings in proportion to expenses*; while in 2000, the forecast for higher education expenditure took up 3.8% of the total state finance expenses, this value decreased by nearly 1 per cent by 2009. The same tendency can be observed within the expenditure forecast of the total educational section: while the expenses of higher education took up 21.3% of the educational

expenditure at the turn of the millennium, this value decreased below 18% by 2006. Although this ratio indicates a slight increase in the forecast of the past few years, it must be noted that a significant extent of resources were removed from the budget of higher education through the modification of forecasts in the last 4 years (Figure 8).

In 2009, Hungary spent 2.9% of its budget on higher education. In the last two years, this proportion decreased further. From this relatively small amount, the government has already taken away resources several times this year. The withdrawn sum may be considered as a small sum with respect to the system of state finance, but it is a significant loss with respect to higher education, and the related effects may be substantial regarding the social and economic future of Hungary.

Figure 8: Forecasts of the educational expenditure of the state budget and the expenditure forecast for higher education, 2000-2009



Source: Own editing based on the data of the NEFMI (2010)

11. The Reform of Hungarian Higher Education?

Although it examines only a few basic issues, the study still manages to indicate that *the future of higher education fundamentally impacts the social and economic progress of the whole nation*. In the present situation, *it seems that the Hungarian higher education system is changed merely due to fiscal reasons* – without the consideration of relative facts and data – and *its impacts are not reckoned with*.

The budget of 2011 included 189 billion HUF for supporting higher education, out of which 20 billion HUF was immediately blocked by the government at the beginning of the year (since then, this sum became a withdrawal), and further blockings took place in August and September. The Széll Kálmán Plan (2011) is planning to withdraw 88 billion HUF from higher education support in the following three years: the national budget support of higher education is planned to decrease by 12 billion HUF in 2012 and by 38 billion HUF each in 2013 and 2014. This nearly 50% withdrawal of resources is unprecedented since the change in the political regime in Hungary. The proportions of higher education expenses with respect to the budget changed very little since 1995, considering the GDP percentage; this value was 0.9% in 1995, 1.1% in 2000, and 1.0 in 2009. In regional comparison, this proportion is not to be considered as bad, as the neighboring countries also spend app. 1% of their GDP on higher education. When translating the GDP-proportional expenditure to specific numbers, however, *it turns out that the financing of Hungarian universities cannot be considered competitive*.

While OECD countries spend 8,970 USD per student on higher education (if higher education research and development is also included, the amount spent is $12,907), Hungary spends (without R&D) 5,365 USD (6,721 USD including R&D) per student on higher education, i.e. approximately half of the OECD average.

It is understood and considered as particularly important to make sure that Hungary meet its undertaken national budget obligations. However, we do not find the cutbacks made regarding higher education support to be the best area to achieve such goals. The intention of this study was to introduce the multiple tones, complexity and intricacy of this field. The change of one single factor (in this case, the budget resources) may start a whole avalanche, the impacts of which cannot or just very insecurely be forecasted yet. The planned reform can be feared of having the opposite effect. In lack of skilled and trained workforce, economic growth may slow down, which can re-generate the current problems of the budget. The numbers of students are decreased due to fiscal reasons, but the thirst for education cannot be mitigated as such, therefore it is highly likely that students would go abroad for acquiring the education, thus accelerating the migration tendencies. Many similar issues should be taken into consideration in order to be able to make real changes.

Education directly determines the course of progress of a country, therefore it is particularly important that the directions of changes be professionally well-established and serve the nation's growth.

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