

IMPACT OF THE FINANCIAL AND ECONOMIC CRISIS ON PUBLIC EXPENDITURE ON HIGHER/TERTIARY EDUCATION IN EUROPE AND SLOVENIA

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Abstract:

The paper deals with changes in tertiary education (TE) funding in 28 European countries after 2007. We focus on two aspects: first, does the public expenditure on TE change (decrease/increase) in proportion to the changes (decreases/increases) in public expenditure on education and second, did countries, which invested the highest share of public funds on TE (measured in % of GDP) before the crisis (in 2007), managed to maintain or increase their share during the crisis (until 2012)? We cover public funding using quantitative methodological approach, complemented with the results of research conducted from European University Association (EUA) and others. The results imply that in proportion to the reduction in the share of public expenditure on education generally decreases the share of public expenditure dedicated to TE, but more slowly. Majority of countries with high or medium investment in TE (as % of their GDB in 2007), managed to maintain or increase public expenditure on TE until 2012. This group includes Scandinavian countries (except Iceland), Denmark, Switzerland, Austria, Germany and France, as well as Poland and Slovakia. Most severe cuts in public expenditure on TE took place in Baltic and southern European countries as well as in Hungary, Czech Republic, Ireland, Netherlands and Iceland. In Great Britain (Wales and England) drastic reductions in public expenditure are a result of the funding reform. Public expenditure for HE in Slovenia decreased more gradually but trajectory for the future years is rather negative.

Keywords: tertiary education, higher education, public funding, financial crisis, economic crisis, Europe, Slovenia

1. INTRODUCTION

After three decades of intensive reform and joint efforts towards achieving greater integration, transparency, quality, growth, efficiency and excellence, the role of European higher education¹ (HE) in the knowledge society and knowledge economy has strengthened even further (De Boer et al., 2012, p. 10). The new strategy emphasises “smart, sustainable and inclusive growth” which stresses the importance of HE as a key policy area to promote economic growth, jobs and social cohesion (European commission, 2010a). HE sector has a direct and indirect impact that benefits individuals and society at large, therefore plays a significant part in the economic infrastructure of all developed and developing countries (Varghese, 2010, p. 11). Short-term effects are particularly important in times of economic fluctuations, as HE helps to encourage economic activity by creating new jobs or attracting foreign (economic, human and social) capital, on the other hand, HE sector provides income for many employees (Varghese, 2010, p. 11). Understanding the full range of benefits that HE produces in society is especially crucial for public (HE) policy when it comes to decisions on HE funding (IHEP, 1998, p. 11) or supporting the objectives of the HE development.

The current financial and economic crisis (2008-) (hereinafter crisis) had a significant impact on the economic and social systems around the world². Because of the reduced level of economic activity, it appears that EU member states' abilities to further invest in HE from their already overstretched public budgets are limited (De Boer et al., 2012, p. 41). Even before the crisis, investments in HE did not coincided with the growing number of enrolled students, while the share of GDP allocated to HE remained at the same levels or even lowered (EACEA/Eurydice, 2011, p. 2). Public funds still represent the largest source of funding for the majority of European higher education institutions (HEIs), in spite of the governments' promotion to diversify funding sources. On average HEIs receive 85% of all assets from public sources (EACEA/Eurydice, 2011, p. 35; European Commission, 2008, p. 6). Therefore any contraction in the share of public funding without additional provided resources could have significant consequences for their development.

The paper deals with changes in tertiary education³ (TE) funding in 28 European countries⁴ after 2007, with leading two related research questions:

1. Does public expenditure on TE change (decrease/increase) in proportion to the changes (decreases/increases) in public expenditure on education?
2. Did countries, which invested the highest share of public funds on TE (measured in % of GDB) before the crisis (in 2007), managed to maintain or increase their share during the crisis (until 2012)?

We used data from Eurostat database, which were compared and analyzed using basic statistical methods. The key limitation concerns the availability of more recent data, because they are published with a three-year delay. Therefore, we used the results of already published studies, which have been annually collecting, reporting and publishing about the effects of the crisis on HE in Europe. On the basis of these results we categorized European countries. In particular, we highlighted the case of Slovenia.

¹ Initiatives on reforming European higher education date back to the eighties of the last century, when the process of mercerization (introduction of economic theory of markets in the provision of higher education activities) changed the relationship between government and higher education institutions (gaining more institutional autonomy, quality assurance and accountability). Modern integration started with Sorbonne declaration (1998), Bologna declaration (1999) and the Lisbon Strategy (2000-2010) (De Boer et al, 2010, p. 8).

² Current economic conditions were caused with mortgage crisis in mid-2007 in the USA, which spread to the financial markets of developed countries in 2008. United States and most European countries, despite government intervention slid into recession. Global interdependence encouraged the spread of its impact affecting global financial markets and thus covering the whole world. The consequences of the financial crunch have been particularly severe in European countries, with modest GDP growth, shrinking manufacturing sector, reductions in consumption and substantial increase in unemployment.

³ TE can be broadly defined as the level or phase of study after successful competition of secondary education. HE is part of TE as well as other short cycle post-secondary education. We will use the term TE, when we refer to data collected at the TE level, namely ISCED 5 and 6, otherwise we will use the term HE.

⁴ 28 European countries include: 25 EU member states (Luxemburg and Greece are excluded, because of the lack of data), together with Norway, Iceland and Switzerland.

2. CHANGES IN PUBLIC EXPENDITURE ON EDUCATION AND ON TE

We analyzed a relationship between public expenditure on education and public expenditure on TE in the period 2007 and 2009 using linear regression. Firstly, we compared the share of public expenditure on education and on TE in relation to total public expenditure using data from Eurostat on governmental expenditure by function (e.g. COFOG). This comparison allows us to identify changes in public expenditure on education and on TE relative to other public users. Secondly, we compared percentage changes in the amount of public expenditure on TE in relation to changes in the amount of public expenditure on education, where we used absolute data in millions Euros PPS (Purchasing Power Standards) (Current Prices) also from Eurostat.

2.1 Changes of public expenditure on education and on TE relative to total public expenditure between 2007 and 2009

Given the important role attributed to TE as a key driver of economic development and recovery in the time of crisis, it can be argued that during the crisis public expenditure on TE decreased slower than the public expenditure on education relative to other public users. In 2007 public spending comprised approximately 46% of GDP in the EU 27, however, in the next two years this share increased to 50% of GDP (Eurostat, 2013a), partly due to stimulus measures to prevent financial crunch and partly due to lower GDP growth. The structure of public spending is a good proxy indicating priorities of a country, where higher shares for certain purposes indicate greater importance of these sectors from the rest. Education is the fourth most important function of the public sector⁵, which covers the direct cost of educational institutions and indirect financial support for students and their families with scholarships, public loans and other transfers to private companies or non-profit organisations for educational activities (European Commission, 2010b, p. 161).

In 2010, the EU 27 devoted 5.5% GDP on education or 10.8% of total public expenditure. In the last decade, public expenditure on education relatively increased. Between 2000-2003 and 2008-2010, public expenditure on education grew faster than GDP, which was reflected in the increased growth of education expenditure. After 2008, however, GDP growth declined markedly, while public expenditure on education remained at similar levels as in previous years (Eurostat, 50/2011, p. 4). Badescu and Loi (2012, p. 4) argue that the EU 27 managed to maintain a higher level of growth for public spending on education than GDP growth by 2.2% in 2008, 0.6% in 2009 and 3.5% in 2010. Public expenditure on TE amounted to 1.22% of GDP or 22.5% of total expenditure on education in 2009, which on an aggregate level indicates a stable funding.

Figure 2 shows changes of public expenditure on education and on TE as a share of total public expenditure⁶ (hereinafter the share of public expenditure on education or on TE) in 2007-2009. It indicates more than 2 percentage points lower share of public expenditure on education in Iceland and Malta, while in Switzerland and Bulgaria the share of public expenditure on education increased by more than 0.5 percentage points. Similar changes apply to the shares of public expenditure on TE in 2007- 2009, indicating a mutual but rather weak correlation (Person's correlation coefficient $r = 0.39$, significance level $<0.05\%$).

A linear regression was used to determine to what extent changes in the share of public expenditure on education affected changes in the share of public expenditure on TE in 2007-2009. One percentage point increase in share of public expenditure on education indicates 0.19 percentage point increase in the share of public expenditure on TE. If the share of public expenditure on education decreases by 1 percentage point, TE expenditure decreases only by 0.19 percentage points, confirming our assumption.

A more detailed analysis at country level indicates that 12 countries (out of 28) increased the share of TE expenditure, half of them despite of the decrease in shares of public education expenditure (Figure

⁵ The main functional components of public spending (measured in % of total public expenditure) in 2010 were social protection (39%), health (15%), general public service (13%) and education (11%), representing 79% of total government expenditure (Eurostat, 2013b).

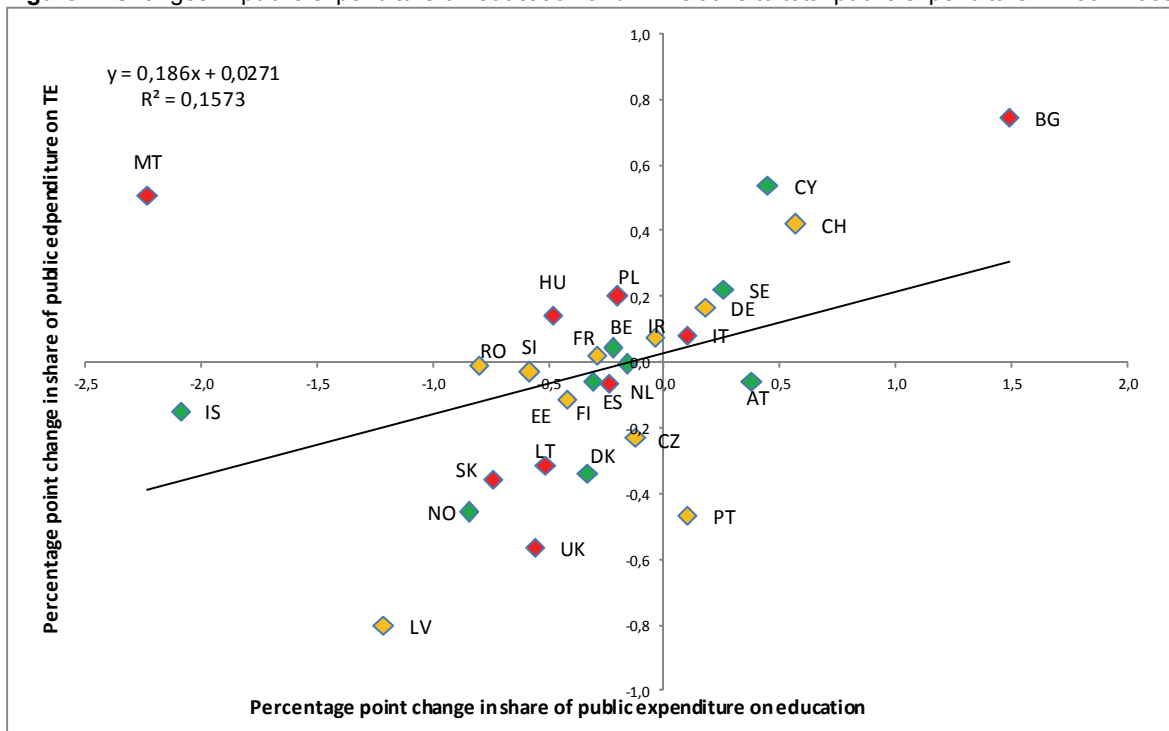
⁶ Public expenditure on education as a percentage of total public expenditure represents the relationship between education and other public services, such as health, social protection, defence and others, and reveals the extent to which governments give priority to education.

1). The share of public expenditure on TE increased the most in Bulgaria (+0.7 percentage points), while in Latvia decreased the most (-0.8 percentage points). Austria and Portugal decreased the share of public expenditure on TE, despite increasing shares of public expenditure on education.

We also labelled countries with different colours distinguishing the level of public funding (expressed as % of GDP) allocated for TE in 2007. 9 countries that allocated more than 1.3% GDB are labelled green, 11 countries allocated between 1.0% GDP and 1.29% GDP are labelled yellow and 8 countries that allocated less than 1.0% GDP are labelled red. It is interesting that 5 red labelled countries increased the share of public expenditure on TE, despite the lowest investments in TE, as part of their GDB, in 2007. Only 2 green labelled countries increased the share of public expenditure on TE for more than 0.2 percentage points.

It needs to be noted that the use of generalized data on country level can be misleading and should therefore be interpreted with caution.

Figure 1: Changes in public expenditure on education and TE relative to total public expenditure in 2007-2009.



Notes: AT- Austria, BG – Bulgaria, CZ -Czech Republic, DK – Denmark, DE – Germany, EE – Estonia, IE – Ireland, ES – Spain, FR – France, IT – Italy, CY – Cyprus, LV – Latvia, LT – Lithuania, HU – Hungary, MT – Malta, NL- Netherlands, AT – Austria, PL – Poland, PT – Portugal, RO – Romania, SI – Slovenia, SK – Slovakia, FI – Finland, SE – Sweden, UK - United Kingdom, IS – Iceland, NO – Norway, CH – Switzerland.

Colours: red: < 1 % GDP allocated to TE in 2007, yellow: 1% - 1,3 % GDP allocated to TE in 2007, green: >1,3 % allocated to TE in 2007.

Source: Eurostat, 2013a, 2013b, own calculations.

2.2 Changes of total public expenditure on education and on TE between 2007 and 2009

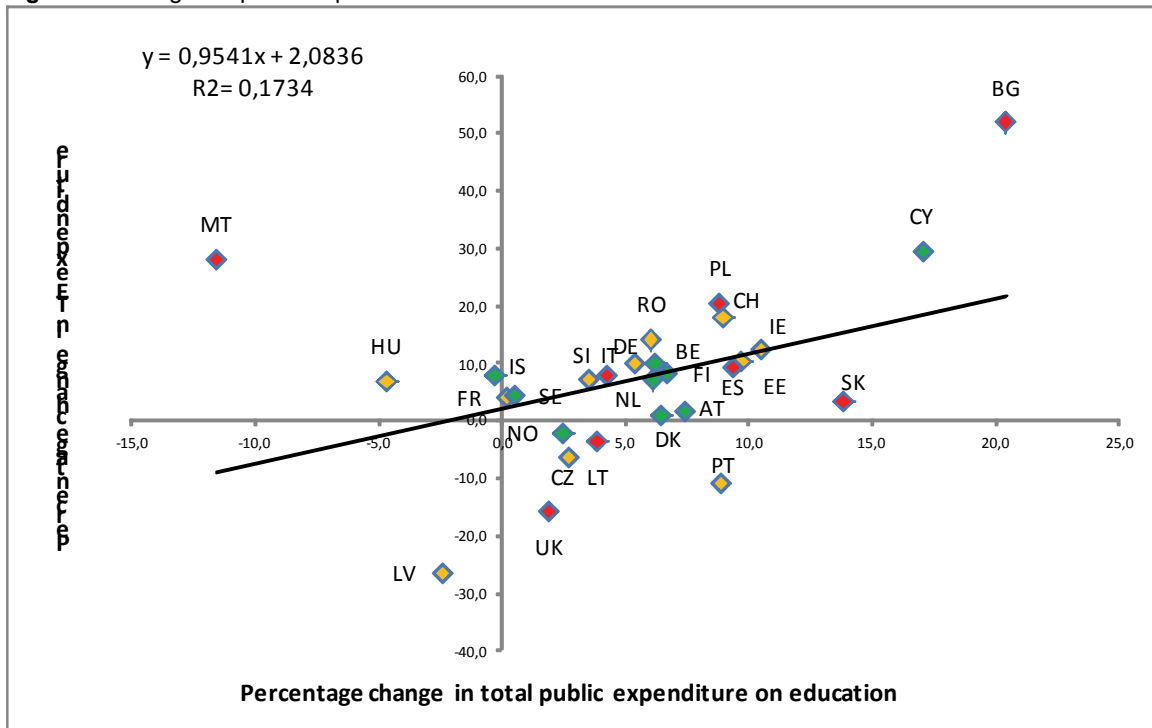
Next we are interested in whether the amount of public funding for TE changes along with changes in amount of public funds for education in 2007-2009. With Pearson's correlation coefficient being 0.42 (significance level <0.05), there is a medium statistical significant correlation, allowing us to use a linear regression (see Figure 2). As we expected, there is a high degree of linear correlation. One percentage change in public expenditure on education implies a 0.95% change in the proportion of public expenditure on TE, which tells us that each country in proportion to the increases (decreases) in the budget for education increases (decreases) the amount of funds for TE.

Most countries increased public expenditure on education as well as on TE in 2009 compared to 2007. Similar research findings were indicated in study EACEA/Eurydice (2011: 41).

Green labelled countries on average increased public expenditure for TE by 7.3%, while increasing expenditure for education for only 5.9%. Norway is an exception in this group, where funds for TE decreased by 2.3%. In the same period red labelled countries increased public expenditure on TE the most (an average 11.4%), compared to 8.7 % increase in public expenditure on education. In Great Britain expenditure on TE decreased. The difference between public expenditure on TE and education was for yellow labelled countries minimal.

Still we cannot establish conclusive statements. Public expenditure on TE increased the most in Bulgaria (51.7%), followed by Cyprus (29.4%) and Poland (20.3%) while public expenditure on education increased only for only 20.4%, 17.1% and 8.8% respectively. On the other hand in Latvia public expenditure on TE decreased the most (-26.7%), despite relatively small reduction of public expenditure on education (-2.4%). Two other countries (Great Britain and Portugal) experienced more than 10 % deductions in TE expenditure despite of increases in total public expenditure on education. Malta and Hungary on the other hand experienced the opposite.

Figure 2: Changes in public expenditure on education and on TE in 2007-2009



Notes: AT- Austria, BG – Bulgaria, CZ -Czech Republic, DK – Denmark, DE – Germany, EE – Estonia, IE – Ireland, ES – Spain, FR – France, IT – Italy, CY – Cyprus, LV – Latvia, LT – Lithuania, HU – Hungary, MT – Malta, NL- Netherlands, AT – Austria, PL – Poland, PT – Portugal, RO – Romania, SI – Slovenia, SK – Slovakia, FI – Finland, SE – Sweden, UK - United Kingdom, IS – Iceland, NO – Norway, CH – Switzerland.

Colours: red: < 1 % GDP allocated to TE in 2007, yellow: 1% - 1,3 % GDP allocated to TE in 2007, green: >1,3 % allocated to TE in 2007.

Source: Eurostat, 2013a, 2013c, own calculations.

3. HE RESPONSES TO THE CRISIS (LITERATURE REVIEW)

Our research results are consistent with other studies that have monitored the effects of the crisis on higher education systems since its beginning. Among them European University Association (EUA) presented results in the most systematic and transparent way. We conducted a categorization of countries according to their results in Table 1. Countries were classified according to changes in public expenditure on HE between 2008 and 2012 and according to investment in TE in 2007 (measured in % GDP).

We could distinguish 6 groups of countries indicating very diverse and complex responses to the crisis (see table 1). In the first group of decreases in public expenditure on HE, the Netherlands is the most interesting case, which is distinguished from other high spending countries by having more than 10 % reductions on HE expenditure in the period 2008-2012. Overall, the financial sustainability is mostly

affected through the increase in student number, withdrawal of some project funding and €3,000 reduction of funds for each student, who studies longer than the nominal duration plus 2 years, which than has to be paid by the student himself (Vossensteyn, personal contact; Europaeum, 2012, p. 4:). In the second group of decreases there are mostly transition economies, which experienced major effects of the crisis on their economies that affected public and also HE spending. Two transition economies, Poland and Slovakia, are exceptions and therefore placed in the third group of countries experiencing increases or stable HE spending. In Poland real GDP growth has been positive through the crisis and therefore sustained high investment in HE (OECD, 2012a). On the other hand Slovakian economy was more exposed to the crisis, but has in contrast recovered very strongly among other transition economies (OECD, 2012b). There is also HE system of Great Britain (especially England and Wales) which is significantly different from the rest of the countries observed. Decreasing public expenditure on HE is just one part of the equation, since the British HE system is undergoing major reforms. In addition groups of countries are presented in detail below.

Table 1: Changes in HE funding in European countries in 2008-2012

		Change in public expenditure on HE (2008-2012)	
		Stable or increase	Decrease
Public expenditure on TE in 2007	High; <1,3 % GDP	DK, NO, FI, SE, BE, AT	<10 %: NL, IS
	Medium; 1,0 - 1,29 % GDP	DE, FR, CH	>10 %: EE, RO, SI <10 %: IE, LT, CZ, HU, PT
	Low; >1,0 % GDP	PL, SK	<10 %: LV, IT, EL, ES, UK

Notes: AT- Austria, CZ -Czech Republic, DK – Denmark, DE – Germany, EE – Estonia, IE –Ireland, ES – Spain, FR – France, IT – Italy, LV – Latvia, LT – Lithuania, HU – Hungary, MT – Malta, NL- Netherlands, AT – Austria, PL – Poland, PT – Portugal, RO – Romania, SI – Slovenia, SK – Slovakia, FI – Finland, SE – Sweden, UK - United Kingdom, IS – Iceland, NO – Norway, CH – Switzerland. For Cyprus (CY) and Bulgaria (BG) data was not available.

Source: EUA, 2012; Estermann, 2011.

According to Chang (2010, p. 17) and Education International (2010: 2) the most common HE policy responses to crisis that are not mutually exclusive were:

- Anti-cyclical response with continuing rise in expenditure on HE, despite weak economic conditions;
- Immediate reduced public expenditure on HE, due to the strong fiscal pressures on public budgets;
- Providing short term additional funding for HE programs trough stimulus measures;
- Introduction to new funding models and modernisation instruments.

3.1 Countries that have increased or remained stable public expenditure on HE

Public expenditure on HE increased or remained stable in 11 out of 26 countries during 2008-2012. Nordic countries (with the exception of Iceland), Belgium, Austria, Germany, France, and Switzerland provided stable or increased funding for their HE sector over the period 2008-2012.

Denmark, Norway and Sweden have experienced increases in public funding since 2008, although many universities reported indirect effects on their funding structure (EUA, 2011, p. 2). In Austria and Germany, public funding expenditure on HE remained high and further increases are planned for the year 2013. In France, there have been considerable increases in the period 2007-2010 as part of the general university reform (EUA, 2012, p. 3). It should be noted, however, that new funding commitments in France are usually made as endowments rather than as basic block grants. In Switzerland, the situation is relatively stable, although the development of specific sources of funding (eg. cantons, country, etc.) differ significantly (EUA, 2012, p. 3). These countries' expenditure on HE was also high or medium high, as part of their GDP, in 2007 (see Table 1). However, absolute increases sometimes conceal decreases in real terms, notably as growing student numbers outweigh reductions in funding per student, like for example in Denmark (EUA, 2012, p. 7).

There are also two other countries, Poland and Slovakia, which public expenditure on HE was lower than 1% GDB in 2007. Poland reported an increase between 2010 and 2011, but inflation has mitigated it. In the case of Slovakia trajectory is rather complex, with alternating increases and

decreases over the period considered. They have also substantially reduced funding for capital investments (EUA, 2012, p. 3).

3.2 Countries that have reduced public expenditure on HE

Austerity measures and fiscal consolidation have led to great pressures on public budgets especially for countries with high debt, resulting in reductions in public expenditure on HE (Education International, 2009, p. 4). However, reductions have been delayed, as in 2008 and 2009, most European countries managed to provide the agreed level of public expenditure on HE (EACEA/Eurydice, 2010, p. 41). During the period 2008-2012, 12 out of 26 countries decreased public funding for HE by more than 10% and 3 more up to 10%. Among these are the Baltic countries, Czech Republic, Hungary, as well as Greece, Italy, Spain and Portugal. All these countries had, in 2007, medium or lower spending on TE (as part of their GDP).

Latvia and Lithuania experienced very difficult financial situations. Latvia drastically reduced public funding for HE already in 2009 as recommended by the IMF and World Bank (EUA, 2010, p. 2). By 2010 HE expenditure was cut in half, but the situation is now stabilizing (EUA, 2012, p. 2). In Lithuania, the funds were also reduced by more than 20% (EUA, 2012, p. 2; EUA, 2011, p. 2). Following years of high cuts, in Estonia, funds for teaching are expected to rise for 2012 (EUA, 2012, p. 6). The Czech Republic has seen sustained budget cuts since 2008, but reductions were higher than in other sectors and also compared with lower levels of education (EUA, 2012, p. 2). The three-year austerity plan for education considers further cuts by 20% until 2014 (Koucky, 2012, p. 9). In Hungary, cuts of more than 5% have been reported every year since 2008 and additional 10% reductions are expected in 2013 (EUA, 2011, p. 2). An overall decrease of more than 20% since 2008 can also be perceived in several southern European countries (Europaeum, 2012, p. 1). Spain, Portugal, Greece and Italy are all on negative trajectory, having severe reductions and in addition the situation isn't stabilizing.

The Netherlands, Ireland and Iceland are also part of this group, although the Netherlands seems to be better off. These three countries of north-west Europe are, however, in a different situation as they retain higher spending in TE but feature negative trends (more than 10% cuts) over the period considered (EUA, 2012, p. 7). Icelandic economy was hit early and hard resulting in HE expenditure cuts of more than 10 % in 2009, followed by further reductions (EUA, 2012, p. 7). Ireland is struggling with a general decline in funding causing hiring and salary freezes, a less favourable staff/student ratio, halted investment/infrastructure projects and fewer research activities (EUA, 2012, p. 7). Finally, the Netherlands had systematic funding decreases since 2008, but overall kept the HE funding stable. In 2011 public funds for HE fell by more than 10% mostly because of the abolition of project funds that subsidised research, innovation and teaching (Vossensteyn, personal contact; EUA, 2011b, p. 3). Reductions are still in the plan for the next 5 years (Europaeum, 2012, p. 4).

3.3 Countries that have adopted stimulus packages

In response to the crisis, some countries introduced incentive programs of stimulus packages including for HE. According to EACEA/Eurydice (2011, p. 43) in 13 European countries stimulus packages were focused particularly on TE. Ireland, Greece, Italy and Iceland with the help of additional public resources intended to protect TE budgets from direct impact of the crisis. Germany, France, Finland, Sweden and Norway used the stimulus packages to maintain a high level of public spending on HE. Stimulus packages were also used for targeted funding for research or teaching and also for student support.

3.4 Countries that have introduces reforms in their funding systems

Several countries have used the crisis to embark on reform processes that include revision of the funding allocation mechanisms (EUA; 2012, p. 8). Public authorities needed to maximize the impact of reduced or constrained resources regardless of their financial outlook for HE sector.

Finland introduced a university system reform with the new Universities Bill, which has transformed the status of universities into independent legal entities enabling them to independently obtain new financial resources, without previous restrictions (Europaeum, 2012, p. 2). In addition Finnish government:

- introduced tax deduction of corporate donations for up to €250,000 until the end of 2012, which has strengthened the budgets of universities,
- launched educational programs in English and offered them abroad,
- enabled that public funding is no longer offered based on the number of degrees (Europaeum, 2012, p. 2).

Due to these measures, the budget for universities in Finland increased by 12%, which is in line with their political commitments providing quality, efficiency, equity and internationalization of Finnish HE (Europaeum, 2012, p. 2).

The particular case of the United Kingdom HE system (including England and Wales), is undergoing a major transition in the way it is funded. HE system of Great Britain is otherwise significantly different from other European HE systems, enabling them to restructure their financial model (EUA, 2012, p. 3). In the period between 2008 and 2010, public funding for TE fell by 10%, moreover, total public expenditure on HE should be reduced by 40% until 2015 (EUA, 2012, p. 3; Euporaeum, 2012, p. 6). Funding for teaching is expected to decrease by 79% while at the same time tuition fees increase from £3,000 to £9,000 (Europaeum, 2012, p. 6). The intention is to shift majority of teaching public funds from public bodies directly to students. This will have a major affect on the future development of HEIs. Uncertainty is even greater, since the amount received will depend on student ability to take income-contingent loans (EUA, 2012, p. 3).

Some form of tuition fees were further introduced in Netherlands and also in Spain, for instance, fees for repeaters or students exceeding the prescribed average length of study (EUA; 2012, p. 6; Euporaeum, 2012, p. 4). With this measure they would reduce the number of students and increase the number of graduates. International students (non-EU/EEA) are also increasingly being charged tuition fees that come close to meeting the actual cost of the programme studied (e.g. in Denmark, Sweden and Spain) (EUA, 2012, p. 6).

On the other hand in Poland the reform of the HE system aims to increase the rights of student, facilitate academic careers and bridge the gap between HE system and labour market (Europaeum, 2012, 4). Among other things, the reform limits the number of qualifications which individuals can obtain within the framework of free study.

4. CASE OF HE FUNDING IN SLOVENIA

In Slovenia, funds for HE teaching activities began to decline in the year 2012, with a rebalans of public budget for the year 2012 (Rebalans proračuna, 2012) and indirectly by adopting new Act on the balancing of public finances (ZJUF, official Gazette no. 40/2012). Before 2012, public funds grew progressively (Table 2, column annual growth rate) and in 2011 reached a maximum. In table 2 we present the amount of public expenditure for study activities of undergraduate studies and 2nd cycle studies in Slovenia that have been awarded to HEIs through lump-sum in the last ten years. We particularly focus only on direct public investment for HE teaching, whereas student transfers are not included.

Especially interesting is the increase in public funding in 2009 (15.3%) despite the fact that in 2009, GDP growth was negative for the first time (real -8% and nominal -5.3), as a result of the impact of the economic and financial crisis on the Slovenian economy (Lesjak & Marjetič, 2010, p. 105). This large increase was due to eliminating wage disparities and to some extent for the financing of the 2nd cycle study programs (Lesjak & Marjetič, 2010, p. 105), due to the implementation of Bologna structure. In 2010, however, public funds decreased by 1.4%, despite the fact that the funding for the 2nd cycle increased even more than in previous year.

Table 2: Public funds rewarded to higher education institutions for teaching in 2003-2013, annual growth rate, the share of educational expenditure, share of public expenditure, real GDP growth, nominal GDP growth and annual average inflation

Year	Public funds (mio EUR)	Annual growth rate (in %)	Share of educational expenditure (in %)	Share of total public expenditure (in %)	Real GDP growth (in %)	Nominal GDP growth (in %)	Inflation (average, annual) (in %)
2003	160,8	-	-	1.4			
2004	174,2	8.3	-	1.4	4.3	5.4	3.6
2005	185,5	6.5	11.3	1.4	4.5	6	2.5
2006	195,4	5.4	11.0	1.4	5.8	8	2.5
2007	202,5	3.6	11.4	1.4	6.9	11.3	3.6
2008	221,3	9.6	11.4	1.3	3.6	7.9	5.7
2009	255,1	15.3	12.7	1.5	-8	-5.3	0.9
2010	251,4	-1.4	12.5	1.4	1.4	0.3	1.8
2011	259,5	3.2	-	-	0.6	1.6	2
2012	239,9	-7.6	-	-	-2.0	-1.3	2.8
2013	227,2	-5.3	-	-	-1.4	-0.6	2.2

Source: SORS, 2010-2012, UMAR, 2012.

Along with austerity measures, implementation of Bologna structure, demographic change and enrolment trends prompted structural changes in the HE system and new lump-sum financing model was needed. In 2011 a new Decree was introduced, with fixed and variable part. In comparison with the previous financing system, the new lump sum represents 100% of value from 2010 and can be increased or decreased by 3% each year (Lesjak & Marjetič, 2011).

In 2012 €239.9 mio was allocated to teaching activities, which is 7.6% less than in 2011. Trajectory is also negative for 2013, with a further 5.3% decrease, resulting in 12.4% reduction according to 2011. Reductions in Slovenian HE system were not directly a result of the crisis, but indirectly because of the necessity to reduce public debt. However, public expenditure on HE decreased more gradually in Slovenia in comparison with other eastern and southern European countries (Baltic countries, Czech Republic, Hungary, Italy, Portugal and Spain).

5. CONCLUSION

The financial and economic crisis has placed HEIs prior a new challenge. As the economic slowdown and higher unemployment rates lower government revenues, governments are forced to adopt austerity measures and limit the expenditure in sectors with the lowest developmental potential (Tilak, 2010, p. 4). Public funding for HE are much more vulnerable to financial reductions and pressures as they compete with more important sectors, like health or social protection, unless clear policy decisions were chosen to protect human development sectors, if not enhancing their investment (ibid). The new development strategy Europe 2020 has especially favoured to protect HE funding as an important instrument of recovery and growth (European Commission, 2010a). Nevertheless, national HE policy responses have been negative as well as positive. On the other hand, some countries took advantage of economic and financial crisis as an opportunity to change and improve their performance and cost-effectiveness.

Overall, the result of the crisis so far is a decline in public expenditure on TE. In the early years of the crisis, reductions in public expenditure on TE were not common, because of general awareness and recognition of its importance in the knowledge economy at European level that these investments help to overcome the crisis. Still, reductions were evident in almost any HE system in Europe to a different extent. Reductions in the share of public expenditure on education during 2007-2009 led to reductions in the share of public expenditure on TE (relative to other public users), but more slowly. The majority of countries have increased their investments in TE during 2007-2009. But trends are also changing rapidly when crisis is deepening and recession is prolonged. According to EUA (2012) majority of countries with high or medium investment in TE (as % GDB), managed to maintain or increase public expenditure on HE. This group includes Scandinavian countries (except Iceland), Denmark, Switzerland, Austria, Germany and France, as well as Poland and Slovakia. Most severe cuts in public expenditure on HE took place in Baltic and southern countries as well as in Hungary, Czech Republic,

Ireland, Netherlands and Iceland. In Great Britain (Wales and England) drastic reductions in public expenditure were a result of the funding reform.

In Slovenia, the austerity measures were adopted with a lag in the middle of 2012. Public expenditure on HE grew at high rates until 2011, but the trend is now just the opposite for the next 2 years, with funds decreasing by 12.4%. The reductions are a result of indirect effects of the crisis. However, public expenditure for HE in Slovenia decreased more gradually than in other eastern and southern European countries.

Overview of changes in public funding on HE only gives a glance on the whole impact of the crisis. Unavailability of more recent data has clearly limited our research analysis. From a systemic view, it is essential to establish mechanisms that can measure anti-crisis success at the macro and micro (institutional) level. Otherwise, it will be harder to determine reasons that have led to changes in HE, which may affect future responses. In this context, it is very important to look at changes in teaching and research together or in parallel. Nevertheless, further research could also include looking at effects on economy for each group of countries to see if perhaps reductions in HE expenditure would put society at risk of leading to slower economic recovery on the one hand, or it would create the possibility for any serious and radical changes in the HE system itself to become more efficient and thus to better play its role in society on the other hand. Time will best show which HE system and society in such situation will become better.

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