

## PUBLIC FUNDS FOR STUDENT SUPPORT DURING ECONOMIC CRISIS

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### **Abstract:**

Knowledge societies emphasise the importance of education as one of the key factors for economic and social progress. Recently, as the negative impact on public funding of tertiary education spread with the global economic crisis, these expectations increased even further, particularly in countries that were economically more affected by the crisis. We examined how the global economic crisis affected the funding for student support in European countries, depending on the specific situation of individual economies. We divided the countries into two groups based on the impact of the global economic crisis on their economies: economically more affected and economically less affected countries. Using these two groups, we comparatively studied the changes in the financing of student support between 2008 and 2011, i.e. since the beginning of the global economic crisis and until the last year for which the data was available. We compared the changes in funding between the two groups. On average, public spending on student support as a share of total public spending on tertiary education is higher in economically more affected countries and lower in the group of economically less affected countries. The change in this proportion was positive in both groups of countries, but the increase was higher in the economically more affected countries than in the economically less affected countries. We note, therefore, that the group of economically more affected countries faces a reduction in the total public spending, but tries regardless, to largely protect the less privileged groups of students by increasing or maintaining the public spending on student support, thereby enabling access to tertiary education for the widest possible population.

*Keywords: tertiary education, student support, economic crisis, public funds*

## 1. INTRODUCTION

From 2008, the effects of the global economic crisis spread quickly and had a high impact on the economies of all countries and all sectors of a country, including an important impact on tertiary education systems all over the world. However, the impact of the financial and economic crisis on tertiary education systems varied between countries, due to the different forms and structures of tertiary education systems in individual countries (Eggins and West 2010, Skrbinjek and Lesjak 2014). This makes it an interesting research topic.

The national crisis exit strategies identify tertiary education as one of the key development factors that can contribute to economic recovery, despite the fact that the longevity of the crisis can have a negative impact on development areas that do not generate immediate economic results, and that the tertiary education sector is such an area.

We were interested in the crisis period and therefore studied the period between 2008 and 2011. We used 2008 as a comparative year for years 2009 and 2011, when the impact of the economic crisis was more apparent. We used the cluster analysis method to divide selected countries into two groups based on the impact of the economic and financial crisis on their economies, in line with our research question. To cluster the countries, we included five variables, which reflected the countries' general macroeconomic state and the result enabled us to distribute the countries into two groups. We named these groups based on the prevailing values of the indicators; *economically more affected countries* and *economically less affected countries*.

Our research focused on the study of changes to the financing of student support in correlation with the impact of the economic crisis on countries' economies. Our research question was "How does public spending on student support change during a crisis?" Vincent-Lancrin (2009, p. 275) finds that, in most countries, an increasing proportion of public spending was being allocated to student support funding between 1995 and 2005. Therefore, we believe that the student support funds will not diminish even in the time of crisis, as indirect financing is considered to be an important instrument for promoting accessibility of tertiary education.

Our research was based on an analysis of secondary data sources and we faced limited data availability and relevance, as well as missing values. Our main data source was the Eurostat database, which has less extensive data on tertiary education in comparison to the data for the entire education. In addition, the data on tertiary education financing is included in the Eurostat database with a time lag; the last available year is 2011. We included a total of 30 European countries; 27 European Union member states and 3 European Free Trade Association (EFTA) members<sup>1</sup>.

## 2. TERTIARY EDUCATION AND TERTIARY EDUCATION FUNDING

The European tertiary education sector with over 4,000 tertiary education institutions is diverse and competitive at the same time. There are differences even within individual tertiary education systems, due to new demands of the modern society, the direction of national tertiary education policies, as well as the historical development and tradition (Clark 1978, p. 1; Bleiklie and Kogan 2006, p. 18).

Tertiary education can be funded from public or private sources. *Public financial resources* include national or international budget funds allocated to secure the provision of tertiary education, capital investments, grants for primary research, and public transfers to other private entities, such as subsidies to transport enterprises for discounted tickets for students, subsidized meals, subsidized housing, etc. (SURS 2011; Lepori et al., 2007, p. 87; Jongbloed, 2007, p. 116). *Private financial resources* become available through business and can include contributions from students (or their parents) for material expenses, registration fees and tuition fees (Gwosc and Schwarzenberger, 2009, p. 239) or tertiary education services for businesses (research, consultancy, training for private parties), as well as donations and grants (Nkrumah-Young and Powell, 2011, p. 4).

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<sup>1</sup> Our analysis does not include the latest European Union member, Croatia, as the major part of our research was carried out before Croatia joined the European Union on 1 July 2013.

The largest share of public resources is distributed directly to tertiary education institutions, with a smaller share allocated indirectly (to students or households) in the form of transfers and other forms of student support (Salmi in Hauptman 2006, p. 7). The indirect public spending is used as a tool to create incentives to make tertiary education more accessible, thereby achieving a greater inclusion of the widest possible population, and especially the socio-economically disadvantaged students. The most common forms of an indirect student financial support are scholarships, given as a grant, and loans, with repayments (usually) only starting after graduation. Table 1 below shows that some form of financial support is present in most tertiary education systems. Although the ratio between loans and grants varies greatly, most countries in both groups offer both forms of financial support. Iceland is the only country that offers only loans, whereas in Lithuania and Latvia vouchers are sometimes used to offset tuition costs.

**Table 1:** Student financial support forms in the first and second Bologna cycles, 2009/10

Grants and loans	Grants only	Loans only	Vouchers
BG BE-fr,de DE DK FI EE LV LT EL CY UK SE NO NL PL HU SK	AT BE-nl FR CZ MT RO ES SI IE IT	IS	LV LT

Note: The UK data includes first cycle only. No data: CH, PT, LU.  
Source: European Commission/EACEA/Eurydice (2011, p. 50)

Student financial support can be direct, given to students directly, or indirect, given to their parents. Due to the nature of the data, we will focus only on the forms of student support as defined by Eurostat, i.e. the direct forms of support, and use the indicator for the share of public spending on student support in relation to all public spending on tertiary education.

### 3. DATA, METHODOLOGY AND VARIABLES

To start off our research, we used the cluster analysis method to establish groups of countries with a comparable impact of the economic crisis on their economies.

The data was taken from the Eurostat database and analysed with statistical programmes R-commander and SPSS. We included 30 countries in total, including 27 EU members and 3 EFTA members<sup>2</sup>. Thus, there are some limitations according to the data used linked to uncertainty, missing values and rather generalized data. In order to provide the missing data we looked into OECD database and complement Eurostat database. We were unable to include any other country due to the lack of data, as clustering does not allow for missing values. We assumed that the selected variables reflect the actual differences in macroeconomic and fiscal indicators between countries, although the data we used could potentially be unreliable.

We clustered the countries using five variables that relate to changes in 2009-2012 compared to 2008<sup>3</sup>: GDP per capita index in PPS, real GDP growth rate, unemployment rate, fiscal surplus/deficit and gross debt, calculated as the difference between extreme values, i.e. the minimum or the maximum value between 2009 and 2012 compared with the value of the indicator in 2008. In doing this, we captured the extent of the impact of the crisis on individual countries.

Clustering works on the principle of classification of selected units into groups according to similarity, which means that we divided 30 countries into groups based on the similarity of the financial crisis impact on their economies, where this impact was as different as possible between groups.

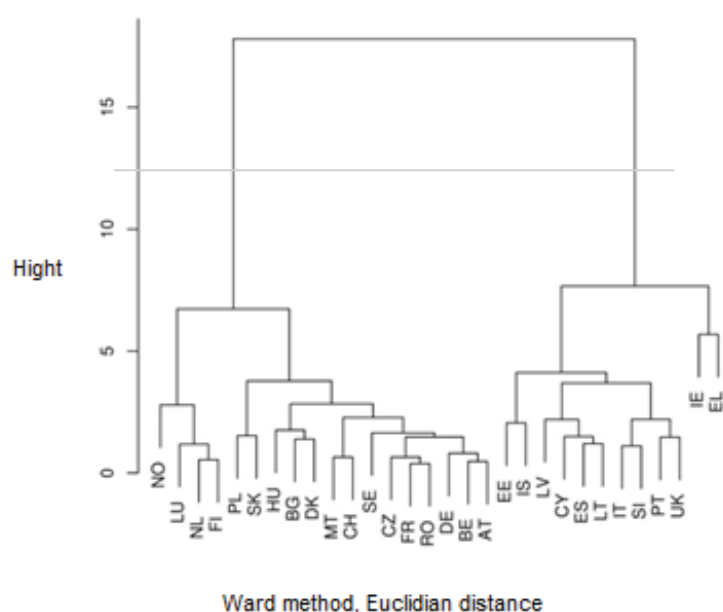
While there are multiple methods of clustering (Everitt, 1974), we used hierarchical clustering with Ward's method and Euclidean distance due to a small number of units surveyed. Ward's method takes into account the sum of squared deviations of the corresponding classification, and where there is

<sup>2</sup> The 3 EFTA members included in the research are Iceland, Norway and Switzerland.

<sup>3</sup> The crisis period covered is between 2009 and 2012, as the latest data available is for 2012. The data for 2008 was used as a comparative data, reflecting the state of the economy before the crisis. The crisis was already foreseen in 2008 as the economic growth of the 27 EU members in 2008 was at a modest 0.3 percent, however, the impact on the higher education and policy responses was not showing yet. Therefore, 2009 is taken as the first year of the crisis, as the GDP in the 27 EU countries fell by 4.3 percent on average in this year.

more than one variable, adds up the squared deviation sums for all variables (Kosmelj and Breskvar Zaucer, 2006, p. 303).

**Figure 1:** Clustering Dendrogram



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

The result of clustering are two clearly distinguished groups, shown in the dendrogram above (Figure 1). We will therefore use these two groups in our data analysis. The table 2 below shows the clustering results, with 18 countries falling into the first and 12 countries falling into the second group. It is apparent that the countries in the first group have had, on average, a smaller fluctuation in GDP per capita index (in PPS), higher average real GDP growth rate (between 2008 and 2012) and lower average amplitude of the unemployment rate, fiscal deficit and gross public debt. We can therefore conclude that the first group comprises of countries that were economically less affected than the second group of countries, which were economically more affected by the financial crisis. We will therefore refer to the first group as *the economically less affected countries* and the second group as *the economically more affected countries*.

**Table 2:** The clustering of countries into groups, based on economic indicators

Group Name	Group 1: Economically Less Affected Countries		Group 2: Economically More Affected Countries	
Number of Countries (N)	18		12	
Countries	NO, LU, NL, FI, PL, SK, HU, BG, DK, MT, CH, SE, CZ, FR, RO, DE, BE, AT		EE, IS, LV, CY, ES, LT, IT, SI, PT, UK, IE, EL	
Statistical Significance	$\mu$	$\sigma$	$\mu$	$\sigma$
Change in GDP per Capita Index	-1.500	4.756	-7.083	4.033
Average GDP Growth	0.563	1.049	-1.305	1.162
Change in Unemployment Rate	2.317	1.687	8.958	4.326
Change in Surplus/Deficit	-4.256	2.293	-5.900	6.423
Change in Gross Public Debt	12.256	7.549	36.475	18.136

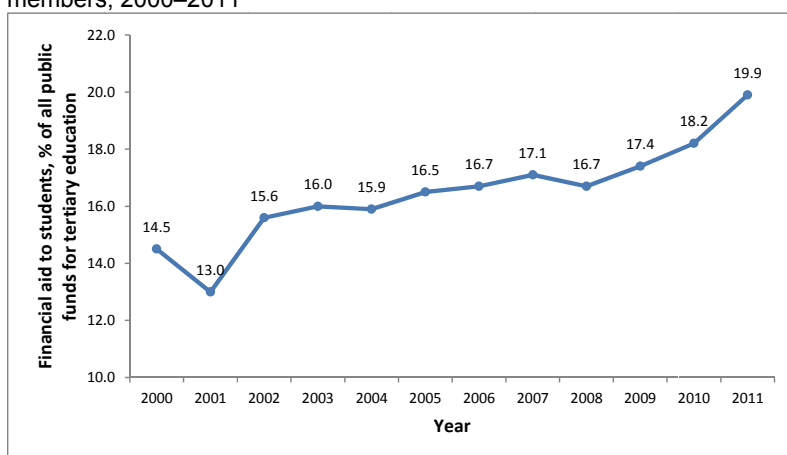
Note:  $\mu$ - average,  $\sigma$  – standard deviation

## 4. PUBLIC SPENDING ON STUDENT FINANCIAL AID

### 4.1. Changes in public spending on student financial aid between 2000-2011

In 2011, the 27 EU members allocated on average 19.9% of all public funds for tertiary education to student financial aid (Figure 2), i.e. the funds given to students directly<sup>4</sup>. The chart below suggests that the share of public funds allocated to student financial aid has been increasing in recent years, which means that direct spending on tertiary education institutions has seen a relative decrease in favour of indirect spending on students. It is important to note that the data reflects only the relationship between the direct and indirect public spending on tertiary education and not the actual level of spending.

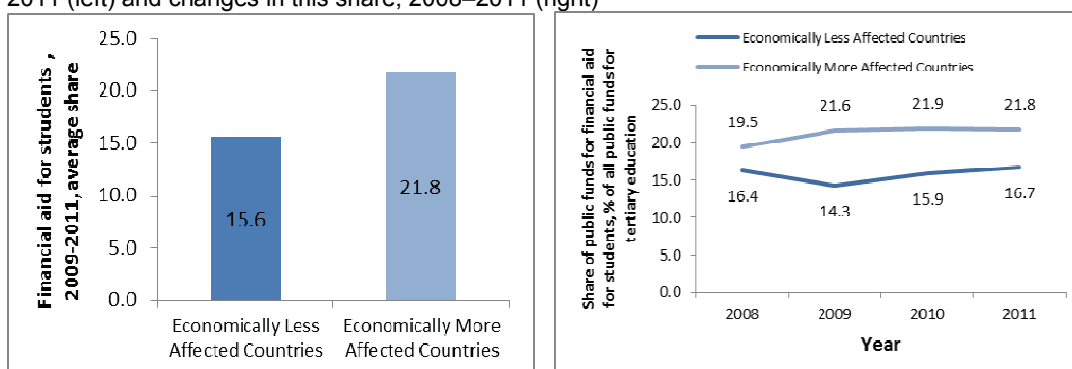
**Figure 2:** Public spending on student financial aid as a % of all public spending on tertiary education, in 27 EU members, 2000–2011



Source: Eurostat (2014) Financial aid to students [educ\_fiaid]. Updated 12.6.2014.

While the share of public spending on student financial aid between 2000 and 2011 was increasing, the trends and patterns vary significantly from one country to another (European Commission/EACEA/Eurydice, 2011, p. 55). Cyprus allocates the highest share of tertiary education budget to student financial aid (mainly due to the Cypriot students studying abroad) (European Commission/EACEA/Eurydice, 2013, p. 72), followed by Norway and the United Kingdom. The share of public spending on student financial aid grew in all three countries, with the highest growth in the UK at 30.7 percentage points. On the other hand, Poland had the smallest share of student financial aid until 2009 (1.4 %), which was increased to 12.1 % in 2010 and 12.7 % in 2011.

**Figure 3:** The average share of public spending on tertiary education allocated to student financial aid, 2009–2011 (left) and changes in this share, 2008–2011 (right)



Note: No data available for EL and LU.

Source: Eurostat (2014) Financial aid to students [educ\_fiaid]. Updated 12.6.2014.

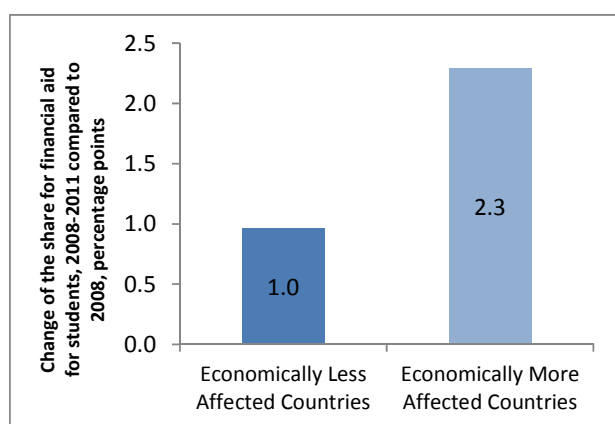
<sup>4</sup> The Eurostat data includes direct transfers to students, where these take the form of a grant or a loan. The data does not, however, include other social transfers funded from the public funds, which the students and their parents can access through subsidized food, transport, housing, health care and tax breaks.

Public spending on student financial aid between 2009 and 2011 was, on average, higher amongst the economically more affected countries (21.8 %) and lower in the group of economically less affected countries (15.6 %). Higher student financial aid as a share of all spending on tertiary education among the economically more affected countries is partially linked to the different systems of tertiary education funding, but may also be due to a higher number of students relative to the population of young people aged 20-24 (Skrbinjek, Lesjak and Sustersic, forthcoming).

#### 4.2. Changes in public spending on student financial aid

The average change in the share of public spending on student financial aid between 2009 and 2011 compared to 2008 was positive for both groups of countries. However, the economically more affected countries record a higher increase in the share of public spending on student financial aid (by 2.3 percentage points) than the economically less affected countries (by 1 percentage point) (Figure 4).

**Figure 4:** The change in the share of public spending on student financial aid, 2009–2011 compared to 2008, percentage points



Note: No data available for EL and LU.

Source: Eurostat (2014) Financial aid to students [educ\_fiaid]. Updated 12.6.2014.

We can draw two conclusions from the above. Firstly, economically more affected countries are changing their funding systems to make tertiary education more accessible and address the problem of growing youth unemployment by increasing tertiary education enrolment, thereby reducing the share of public funds allocated to tertiary education institutions and increasing the share of public funds earmarked for students. Depending on the tools used, they can, due to the higher share of student financial aid, also achieve a more efficient use of public funds (e.g. deferred tuition financing in the UK). Secondly, student financial aid system is highly dependent on national tertiary education policies and the attention countries pay to social dimensions i.e. whether the under-represented groups of students are also included in this system (European Commission/EACEA/Eurydice, 2012, p. 61). With the crisis deepening, total public spending on tertiary education is decreasing more in the group of economically more affected countries (Skrbinjek, 2015), however, they still endeavour to largely protect the public spending on student financial aid, thereby enabling access to tertiary education for the widest possible population.

## 5. CONCLUSION

The economic and financial crisis had a diverse impact on European countries. Before the start of the crisis (in 2008), the countries that were economically more affected during the crisis already had, on average, a lower GDP per capita, higher unemployment rate, higher fiscal deficit, and only slightly higher gross public debt than the economically less affected countries. This means that they were already lagging behind the economically less affected countries, however, the impact of the economic and financial crisis significantly increased the gap between the two groups and the economically more affected countries fell even further behind the economically less affected ones.

This research explored how public spending on student support was changing. On average, public spending on student support as a share of total public spending on tertiary education was higher in the economically more affected countries and lower in the economically less affected countries. The

change in proportion was positive in both groups, but the increase was higher in economically more affected countries than in economically less affected countries. We note, therefore, that the group of economically more affected countries faces a reduction in the total public spending, but tries regardless, to largely protect the less privileged groups of students by increasing or maintaining the public spending on student support, thereby enabling access to tertiary education for the widest possible population.

Our topic can be extended to find deviations within the groups of countries and identify countries with the most increases in the public spending on student support and those with the least. It is crucial to look at the whole tertiary education funding system and detect the difference between and within both groups of countries. The findings can be combined with the research on student payments (eg. tuition fees) to recognise how the student situation has changed during crisis. Further research can include providing evidence on where has the student's life deteriorated the most and where has stayed the same also during and/or after the crisis. More aspects on student finance can be also covered such as the student debt, affordability and return on education.

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