International Trends in Student Lending*

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Several volumes of study have recently been published on the subject of financing education. These could even be used as textbooks for a course on the funding of higher education, as they discuss current issues of this practice in meticulous detail. This paper is intended to provide an overview in a similar spirit, but in a narrower, yet very current area of the financing of education, namely student lending. This paper presents the most important student lending-related national statistics of OECD countries in a systematic form, and draws conclusions concerning the initiatives of the system of financing of higher education through a comparative analysis of those. This study seeks to answer the question of whether student lending in the future will play an increasing role in the financing of higher education, regardless of economic background. It arrives at the conclusion that if we strive to involve additional resources in higher education in large European countries with populations exceeding 20 million people, such as Germany or France, to an extent equalling approximately 1% of the GDP, the use of private funding is almost the only available option. If this is accomplished by increasing tuition fees, which is what the international models suggest, the market of student lending is projected to experience significant growth. However, the results of this process will become significant in the space of several decades.

Journal of Economic Literature (JEL) Classification: G15, I22

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1 Introduction

Human knowledge, or the human factor, plays a key role in economic growth. One form of investment in productivity is learning in an organised form (*Schultz, 1961*). Participation in public education is obligatory; however, large numbers of people today study in higher education as well. Studying in higher education can also be considered a kind of investment, because although it is a costly process, the average college or university graduate has much better chances in their career and life than a person without a degree. As a service, higher education incurs costs. For an individual, this may occur in the form of direct and indirect costs. Direct costs may include, for example, tuition, lodging, and living costs. Indirect costs, or opportunity costs, include missed income that the individual would have earned had they not invested in higher education. The first category represents actual expenses and may be significant, compared to savings and income (*Varga, 1998*). According to OECD statistics, in developed countries, on average a student receives their first degree at the age of 27 (OECD, 2014:79). This means that at the end of their studies, most of them have no or very little savings. One typical solution to this problem is when the student involves their family in the financing of their education. In the United States, for instance, there are loan schemes designed expressly for such cases. FFEL is a loan for family members of persons studying in higher education.[1]

One central issue in the matter of financing of higher education is the involvement of the state. Although higher education cannot be considered to be a public good in the classic sense, since it is possible to exclude an individual from consumption and the consumption of individuals may also impair the consumption options of others, we still consider it important to have the state enter this market. One reason is that higher education has favourable external effects. Human capital with a high level of education is capable of higher productivity and better efficiency. This trickles down to those who work in their environment, which is usually not paid for (*Lucas, 1988*).

The literature of cost-sharing deals with questions around the role of the state and that of individuals (*Halász, 2014:44*). *Johnstone (2004)* identifies four key players in cost-sharing, who share the costs of education. In addition to the *state* channel, the following players belong to the channel of private financing: *students*, the *family* and *donors*. In addition to their income and savings, students or their family can also fund studies through loans not borrowed from the state. The donors fund either the educational institutions or the other two players (state, families).[2]

There are several forms and models for the involvement of the state (*Halász, 2012*). The involvement of the state may be realised through the funding of institutions. This

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1   Federal Family Education Loan (FFEL) is a scheme designed to enable the parents of students to borrow in an effort to finance the costs of education (US Department of Education, 2015).

2   Neither the referenced author nor this article seeks to assess the funding of institutions of higher education in relation to their research or business activities.

happens when the state supports institutions of higher education, which charge students only partial costs. An extreme but frequent example of this is when the institution of higher education is owned by the state and offers its services tuition-free. However, it can happen in these cases as well that the scope of consumers is restricted by an entry procedure. *Another possible way is to directly support students or their families by means of scholarships, grants, or through a student-lending system.* The state may also provide support to donors, for example, by granting tax breaks. Here one may think of company scholarships, which entitle the company to a tax credit. *In this study, we highlight student lending in relation to these options.*

One of the central questions of student lending is whether the private market is able to provide it. Although it has been mentioned that students may also borrow loans themselves, the market may be wary of providing such loans to students for their studies. The title of productivity is not transferable; therefore, it cannot be mortgaged either. And requiring a guarantee by the family would exclude from financing precisely those parties who probably need it the most (*McPherson & Schapiro, 2006*). Although the mechanism of securitisation enables lenders to transfer risk to financial actors who are willing to take it on, *Roy (2014)* states that during the crisis quasi-arbitrage transactions could also be performed using student loan-based derivative instruments. After the crisis, however, the popularity of these kinds of financial activities decreased.

One natural point of entry is when the state enters the market as the surety provider. On one hand, it may be the guarantor of the borrowers (asset-side guarantee); on the other hand, it may support the institutions (liability-side guarantee). As with any insurance-related problem, moral risk occurs in this case, too. If the borrower fails to pay, the state provides a guarantee to the lender, the lender's interest in collecting the loan, and the borrower's interest in repayment will decrease. If the state provides a guarantee for the source that is available for the lender, then the lender may be inclined to lend and collect too generously. In the latter case, the moral risk is manageable by having an organisation that is owned by the state itself, and collection is tied to the taxation system. This is how the Hungarian Student Loan Centre operates, for example, while the United States may be a case in point for asset-side guarantee provision. Finally, the state may also operate as a lender. *Berlinger (2002)* argues that, in fact, lending with a full guarantee is not through private sources, but rather state funding.

In the first section, we review those basic relationships that must be known in order to assess the problems discussed in this paper, which are partly related to funding and partly to economics of education. On one hand, we present the relationship between the economic performance of the countries and the ratio of persons with a degree; on the other hand, we look at the entire volume of investment in higher education. Furthermore, we explore how expenditures in higher education have changed over the past decade and a half. In this way, the paper illustrates the statement that the growth of the market of higher education can be considered to be global and is also significant in less-developed

OECD countries. If we also explore the trends in terms of state and private investments, it is possible to see that both have increased over the recent period. Funding of studies from student loans is, in fact, a private investment, since it is actually a transfer of future income. Based on the trends, we anticipate that student lending will grow. However, it is remains to be seen where and in what way this growth will come about. Should we expect explosive growth of the large student loan markets to match those in the United States, where the debt portfolio of households with student loans hovers around 1,100 billion dollars? Is it going to be common, as in Australia, for 80% of students to have a student loan upon graduation? What is the volume of the debt portfolio that we should expect? When answering these questions, we explore the hypothesis that the growth of investment in higher education is sustainable given the models known today.

Analysis of these questions is primarily be based on the most recent statistics from the 2014 volume of *Education at a Glance*, issued by the statistical office of the OECD. We present the source of these data in the second section.

The third section contains a comparative analysis of the data. Finally, the paper ends with a conclusion. In the conclusion, we formulate a statement concerning the hypothesis mentioned above (after the part containing the analysis): although there is a clear initiative in the global market of higher education to involve private funding as widely as possible, we still cannot anticipate exorbitant growth in student lending. One or two countries have a student-lending market that can be considered quite large. Primarily in smaller countries, such as those in Scandinavia, it is possible to realise very significant investments without high tuition. Despite that, student lending is present in Scandinavian countries. By contrast, in Germany, for example, it is less common. However, if countries with populations exceeding 60 million also start moving towards a system with high tuition involving a high ratio of private funds, then we can expect that there will evolve a lending ratio of 40–60% of students, coupled with repayment terms of 10–15 years. But these variables show significant deviation even in the small sample. In summary, the future of student lending is rather unpredictable, but its spread is inevitable.

2 Statement of the problem

In this section, we present by means of figures and tables some fundamental relationships necessary for the explanation of the subject of the economics of education. It is a consequence of the human factor involved in production that a higher level of education results in higher GDP in the future, but it should also be mentioned that the process is probably circular. The data in *Table 1* also prompt us to draw a similar conclusion. *Table 1* is a correlation table that shows, by means of the intersection of lines and columns corresponding to the appropriate years, linear correlation coefficients of the ratio of graduates and per capita GDP in the 34 OECD countries. It should be noted that a linear

relationship does not mean causality, but based on the theory a relationship may be assumed and its direction can also be specified. Below the main diagonal of the matrix, we find a linear correlation coefficient of medium value (0.4–0.5), which we interpret to mean that there is a positive linear relationship of medium strength between past per capita GDP and the ratio of persons involved in higher education.

Table 1

Correlation table between the ratio of graduates in various years (demographic of ages 25–64) and per capita GDP (at constant purchasing power, at 2005 prices) in OECD countries

		Per capita GDP (at constant purchasing power, at 2005 prices)					
		2000	2005	2008	2009	2010	2011
Ratio of graduates within the 25-64 demographic	2000	0.445	0.457	0.427	0.435	0.435	0.441
	2005	0.441	0.446	0.422	0.440	0.439	0.445
	2008	0.450	0.459	0.434	0.454	0.454	0.459
	2009	0.504	0.519	0.499	0.515	0.518	0.524
	2010	0.494	0.510	0.489	0.506	0.509	0.515
	2011	0.522	0.541	0.523	0.537	0.540	0.544

Source: calculation of the author based on OECD (2014:45–46), OECD (2015)

If we go above the main diagonal, we can register relationships between persons involved in higher education in the past and future GDP figures. It is perhaps worth noting that the correlation coefficients are stronger between the higher education ratios at the end of the 2000s and the GDP figures of former years. We interpret this to mean that *in more affluent countries, the ratio of persons involved in higher education increased by an even higher extent than in the less affluent OECD countries.* With the exception of Chile, there is no country that shows a decrease of student ratios exceeding 1 percentage point between any two consecutive years *(OECD, 2014: 45–46).*

Table 2

Relationship between per capita GDP (2011) and expenses on higher education as a percentage of GDP (2011) in OECD countries

|		Per capita GDP (at constant purchasing power, at 2005 prices)					
		2000	2005	2008	2009	2010	2011
Expenditure on higher education as the percentage of GDP	2000	0.36439	0.369437	0.361048	0.381893	0.407583	0.421458
	2005	0.315214	0.314073	0.321331	0.346271	0.368337	0.368259
	2008	0.252037	0.268346	0.256987	0.279249	0.300916	0.307875
	2009	0.28888	0.302874	0.290481	0.308062	0.329046	0.334196
	2010	0.217978	0.231407	0.224659	0.237232	0.259356	0.26874
	2011	0.216917	0.234362	0.226955	0.241474	0.261512	0.270104

Source: calculation of the author based on OECD (2014: 231), OECD (2015)

Table 2 can be interpreted similarly to the first one. It shows the correlation between expenditure on higher education proportionate to GDP and the expenses on higher education as a percentage of GDP, based on a sample of 34 OECD countries. Here the correlation is not so strong as in the system of relationships presented in Table 1. Typically, these countries spend 1–1.8% of their annual GDP on higher education (*OECD, 2014: 231*). According to *Table 1*, those countries that spent a higher ratio of their GDP on higher education at the beginning of the 2000s were the more affluent ones, and this relationship was strengthened. Countries that had spent higher ratios earlier were more likely to catch up with the more developed ones later. *However, the correlations weakened significantly.* For example, only a weak positive correlation existed between the per capita GDP a decade earlier and the GDP-proportionate expenditure. The correlation with the current spending characteristics is even weaker than it had been at the beginning of the 2000s in the instant data.

Figure 1 shows the student ratio and the expenses broken down by country, as well as according to their changes. We can conclude that there is a general increase in the ratio of graduates: in the 2000s, positive average growth rates were typical (blue), as was already mentioned above. If we consider institutional expenses per one student, the picture grows more complex. No clear pattern can be discerned in *Figure 1* that would imply that the changes in institutional expenditure per one student show a correlation with the massification of higher education. A case in point is that in both Portugal and the United States, the volume of institutional expenditures per one student is a bit lower than in 2005, although in the former country the process of massification of higher education was much more significant during this period than in the latter.

Figure 1
Average annual growth rate in the ratio of graduates within the 25–64 demographic between 2000–2011 (blue), and the percentage change in the expenses of institutions of higher education per one student from 2005 to 2011 (orange)[3]
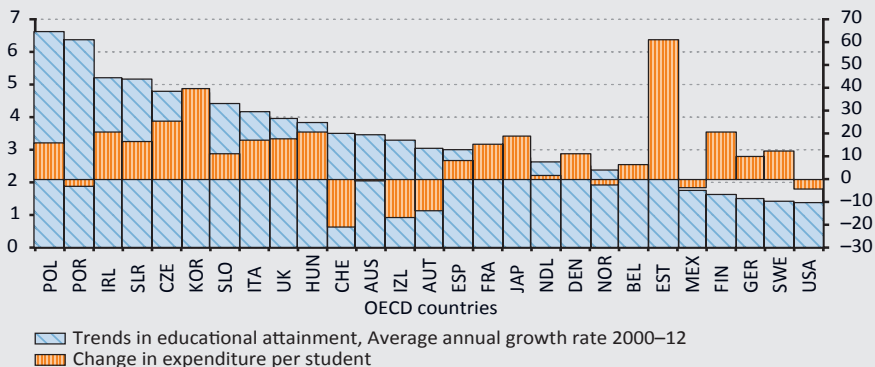
Source: calculation of the author based on OECD (2014:45–46) and OECD (2014:220)

3   Owing to a lack of data, TUR, NZ, LUX, CHL, CAN, and GRE are not included.

In Europe, the model of the welfare state faces serious sustainability challenges (*Berend T., 2003; Sapir, 2005; Snower et al., 2009*) and state-financed higher education may be one of the "victims" of these challenges. Other forms of involvement of the state may be promoted. Germany is a case in point, where tuition was introduced after 30 years (*Dwenger et al., 2012*). Current economic processes point toward the so-called knowledge-based society, in which the human factor plays a more significant role than at any time in the past (*Lundvall, 2006*). One form of increasing productivity is through education (*Schultz, 1961; Becker, 1964*). The process of massification of higher education, recorded since the 1960s (*Lomas, 2002*), only enables the funding of higher education almost entirely from central budgetary sources, in accordance with the principle of equal opportunities and fairness, at a high expense to the state (*Marcucci–Johnstone, 2007*). Some signs of this must also be found in Hungary, where in the recent past a significant process of change has taken place, resulting in certain majors becoming almost entirely chargeable.

Concerning the definition of tuition, *Marcucci–Johnstone (2007a)* identify four basic models of education financing. The two most typical are the upfront tuition fee model and its opposite, the model of state funding (i.e. no tuition fee). There are also concepts that combine elements from both models, such as the system of the dual-track tuition fee (also applied in Hungary), in which some students are financed by the state, while those who fail to reach the admittance score limit for state-financed places have an opportunity to purchase studies for themselves. There is also the differentiated model, which applies separate fees for international students. As *Barr (2004)* puts it, "free" higher education is a dead end, which cannot be sustained in the long term in the 21st century. One typical proof of this is that Germany, with one of the most significant examples of free higher education, has permitted its states to introduce a tuition fee in their institutions of higher education; several states did take this opportunity (*Dwenger et al., 2012*).

One possible way for the financing of tuition fees is the student loan, as mentioned above. Student lending may be provided according to several concepts. One of the simplest concepts is the conventional mortgage type loan, in which repayment starts immediately after the loan is extended (i.e. there is no grace period and the debt must be repaid in annuity-type instalments, depending on the borrowed amount). However, this model is rather difficult for the borrower if they are in a financially disadvantaged state, since during their studies the borrowers have no or very little income (*Del Ray–Racionario, 2010*). On the other hand, predictability and easy administration are mentioned as its advantages. Income-contingent repayment is more advantageous for the borrower. Here the repayment of the student loan is defined on the basis of the current or deferred income of the borrower. However, the downside of this scheme is that the term of repayment is uncertain. (For more details, see *Garcia-Peñalosa–Walde, 2000; Berlinger, 2002; Chapman, 2006; Del Ray–Racionario, 2010*). Additional models include the graduate tax, which is actually not a repayment schedule based on the loan portfolio, but rather an obligatory tax that must be paid regardless of the initial borrowing. No such scheme has yet been introduced in practice (*Chapman, 2006*). The last model, also a theoretical concept, is

designed to conclude so-called human capital contracts in order to involve the private sector in the financing of higher education. Annuity and income-contingent loans are common, but one can see a variety of conditions depending on the place of application. More details are provided about this in section 4 of the study.

Based on the data of *Tables 1* and *2* and the data of the primary axis in *Figure 1*, we can conclude that the size of the market of higher education is continuing to grow globally. We can see the highest growth in those countries that are striving to catch up with the most developed economies, such as Poland, the Czech Republic, Portugal, Ireland, and South Korea.

Based on the figures and this hypothesis, the remaining part of this paper explores the following problem. If we anticipate the continued massification of higher education and an increasing need for sources of lending, it must be noted that a strong economic background does not provide a clear answer to the question of funding (see the secondary axis of *Figure 1*). Is it possible that the involvement of private funding and student lending are the answers to these processes, or do there perhaps exist alternative funding models that can be expected to surge?

3 Source of the data

We use the *OECD Education at a Glance* database, mentioned and used earlier, for the exploration of the problems specified above. This is probably the widest available collection of statistics on education, and it certainly is as far as education-financing data is concerned. The publication *Education at a Glance* was first issued in 1992. Since then it has been published annually. Its constantly updated database is also available as a download from the Internet. In addition, each year new statistics and reports are added to the publication. For example, one of the most recent additions to the subject of education financing has been a presentation of data related to student lending; this is a good indication of how current this topic is. However, data processing takes time; therefore, the most recent data in the 2014 publication are typically from 2011 or 2012.

The source of the data is the so-called INES programme, Indicators of Education Systems, which includes data on 34 OECD countries and the non-member G20 countries. The current study only focuses on the OECD countries.

The INES programme uses several sources in the collection of data.

One of the most important sources is the data of the annual survey of UNESCO, OECD and EUROSTAT on the typical statistics of education, such as number of students, staff working in education, and education financing. *(i)* The study contains a significant volume of data

on skills and competences, which are taken from the results of PISA and PIAAC tests. *(ii)* It also analyses the circumstances of teachers and tutors, including data taken from the OECD survey called TALIS. *(iii)* It can be supplemented by ad hoc surveys.

Therefore, the data presented in the following part is based on the primary data collection of OECD, as well as data pulled from other sources. In many cases, the presented data is already processed data, as raw data sources are not available. When publishing its data, OECD strives to ensure comparability; thus, in most cases it only shares ratios and averages. Nevertheless, these are suitable for drawing fundamental conclusions.

Whenever supplementary data was required (for example, per capita GDP or population figures), the OECD database was consulted concerning the relevant similar years, even when more recent sets of supplementary data were also available (for example, for 2012 or 2013) (*OECD, 2012*).

In many cases, OECD was not able to collect data for every country, because the statistical office of the given country could not or would not release the data. In these cases, we strive in the paper to present as much data as possible, indicating which countries were omitted from the analysis due to lack of data or other causes. Annex 1 of the paper includes the list of countries and notation used in the paper. In several statistics, Belgium was divided up into Flemish and Wallonian regions, and we used the data from the Flemish part whenever possible.

4 Empirical analysis

Since student lending is one of the ways in which private funds are involved in the financing of higher education, the first point that needs to be explored is how private funds and state funds are distributed for the individual countries and how they have evolved over time. In *Figure 2*, 2005 is the point of comparison. For example, in 2000 in Austria the value of private investments was less than 50% of the corresponding value in 2005 (39.1%), but by 2011 it had reached 230% of the value of 2005. Typically, a major change in private funding took place in the 2000s. Chile is different, since the involvement of state funds was very significant after 2005. Furthermore, the great expansion of higher education in the Czech Republic is also remarkable. The line at 100 can be considered critical, since the "points" above that line indicate a drop in expenditures between 2000 and 2005. We can find examples for that primarily concerning the expenditures of the state, such as in Japan or Israel.

Figure 2
State and private educational expenditures in 2011 and in 2000, as a percentage of the expenditures in 2005, calculated at constant prices[4]

Source: edited based on OECD (2014:248)
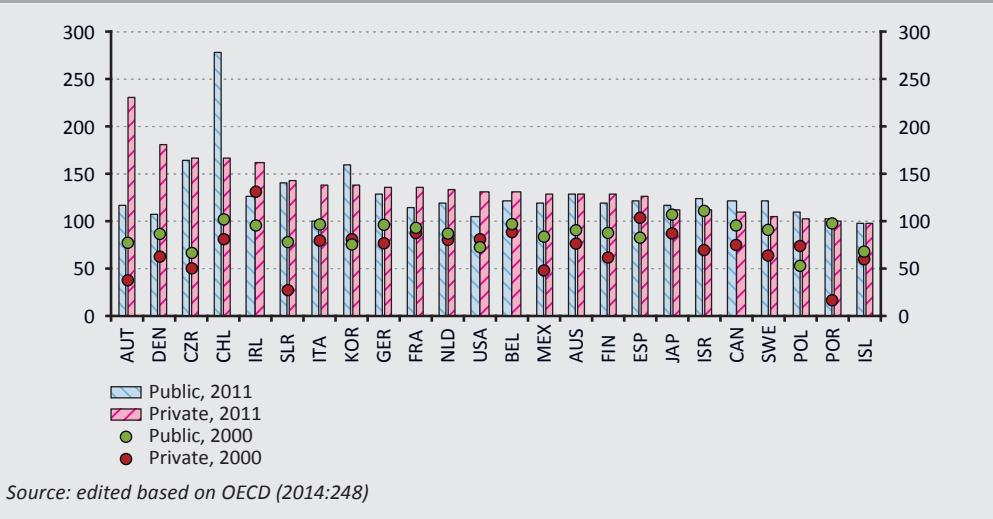
It can be concluded from Figure 2 that there is no or hardly any presumable correlation between the involvement of private and state funds. If we calculate a correlation coefficient for the change data calculated from the two sets of data, then we arrive at correlation coefficients of 0.3 and 0.22 in the changes in private and state expenditures. This implies that although it is more typical that the two values increase simultaneously, the linear relationship is very weak. The Czech Republic, Austria, Portugal, Slovakia and Mexico could be mentioned as examples where significant amounts of capital were involved. The case of Poland is especially interesting: although in that country there was only an increase of 26% between 2000 and 2005 in the ratio of the value, the Polish student loan system started operating in 1998, which coincides with the surge in the involvement of private capital. However, by the second half of the decade the involvement of additional capital seems to have run into limits.

Furthermore, the Czech Republic should be mentioned. It was one of the leaders in the involvement of private capital. Even though no state-supported student loan programme operates in the country, there are solutions offered by private banks, but these usually involve the obligation of opening an account.[5] *Consequently, student lending does not seem to be a necessary or sufficient condition for the growth of permanent private funding.*

One example of a way to involve private funding that is initially effective is the application of relatively low tuition fees. In Europe, very high tuitions (i.e. ones exceeding 5,000

4   Not included due to a lack of data: EST, GRE, HUN, LUX, NZ, NOR, SLO, CHE, TUR, UK.

5   For more details, see European Funding Guide (2014).

euros) are typically only applied in England. On the other hand, in Austria, Germany and the Nordic countries there is no tuition fee or tuition may be required only as an option. In the case of the rest of the countries, the average tuition fee is typically below 1,000 euros (*Eurydice, 2014*).

Table 3 points out a relationship concerning the necessity of involving private capital in terms of three different dimensions. The sizes of the countries are characterised by their respective populations. Countries with less than 20 million inhabitants have been assigned to the small size category, while those with more than 20 million inhabitants fall into the large country category. Concerning the ratio of state expenditures, the ratio of 60% has been selected as the borderline. Where the ratio of state expenditures within the entire sector of higher education exceeded 60%, the country has been assigned to the higher state ratio; where it did not, it went into the low state ratio category. In *Table 3*, the third variable is spending by one resident, which was arrived at as the per capita GDP multiplied by educational expenditures proportionate with GDP. This is a result of the author's own calculation. The most important thing about this indicator is that for it to be high, both high participation in higher education and a high level of support per one student are necessary. If we only consider spending per one student, it may also be high, because not many persons are involved in higher education compared to the entire society. Here the line of division was $500 calculated at 2005 prices and purchasing power, under which level we classified the country as one with a low expenditure, while above $500 meant a high expenditure. In fact, the lines of division are arbitrary; the basis of the selection was the density values shown by the histograms in *Annex 2*. The decision was easier regarding population and expenditure, because the line of division was set on the border between the two peaks. Concerning the expenditures per one resident, the distribution has one peak; therefore, it was natural to select the average as the dividing line. The average value has been calculated as $498, which we rounded up to $500. We also wanted to ensure that a change in the borders would not upset the classification. For example, shifting the dividing line by 5% only changed the classification of one country; if the line was set at $475 concerning the expenditure per one resident, then Belgium would be transferred into the group of Austria, the Netherlands and the Nordic countries.

Table 3 is a useful classification because it shows how much latitude the individual countries have. *We have not found any education-financing model that could be characterised by high spending per inhabitant and large state size, proportionate to both the total population and the expenditures of the state.* If we classify the countries based on a similar principle, according to the figures of the year 2000 (as we do in *Annex 3*), then two countries would be assigned to this group: France and Canada. In Canada, the ratio of state expenditure was 61% at the time (just above the selected dividing line), and in France the average spending per one resident was $398 calculated at 2005 prices and purchasing power, which just exceeded the average figure of $360 among the countries at that time.

Table 3
Models concerning educational expenditures[6]
(2011)

Ratio of state expenditure (%)	Population (million persons)	Expenditure per one resident ($, at 2005 prices and at purchasing power)	
		Low (<500)	High (>500)
High (>60)	Large (>20)	FRA, GER, ESP, MEX, ITA, POL	
	Small (<20)	BEL, DEN, FIN, IZL, NZ, POR, SLO, SLR	AUT, CZE, EST, NLD, NOR, SWE, IRL
Low (<60)	Large (>20)	JAP, UK	AUS, CAN, KOR, USA
	Small (<20)	CHL, ISR	

Source: calculations of the author based on OECD (2014:248); OECD (2015a) and OECD (2015b)

Therefore, both countries would just only fit into these two categories. Later on, they were actually removed, so we cannot consider them as a model for this category. *In countries with a small population, high spending per one resident can also be realised mainly through the channels of the state, with the Scandinavian countries being good examples, but the Czech Republic and Estonia are also interesting.* In 2000, the Czech Republic was still in the low spending category on this line. There are no data about Estonia concerning 2000. *However, it is interesting that we have not come across any model in which the spending per one resident exceeded the average when the sector was characterised by the small size of the state.* Although low expenditure by the state has been a characteristic of larger countries, Chile and Israel are experimenting with such a model, but the spending per one resident does not exceed the average. On the other hand, it is very interesting that in 2000 Australia belonged to this category, but it was removed owing to an increase in population. In 2000, its population was only 19 million, yet this increased to 22.4 million by 2011. In 2000, Israel also belonged to this category, but the spending per one resident practically stagnated there, so it fell below the average. *If a small country intends to reposition itself for private resources, then the example of Australia may be the most useful*. Although in terms of the area of the country it is huge, in terms of actual inhabitants it is not so big.

As mentioned earlier, in addition to the community choice between state and private funding, it is another highlighted question about how the state should channel funds into the educational system. For example, supporting student lending is a possible channel. *Table 4* presents distribution with a similar logic as in Table 3, but according to a new variable. The ratio of state expenditure is the same as in *Table 3*; however, the other variable within state expenditures shows what percent of the expenditures are spent on institutional financing. Concerning this variable, the basis of the grouping is the average value. Institutional financing by the state constitutes 77% of state spending, which can

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6   Not included due to a lack of data: CHE, GRE, HUN, LUX, TUR.

be considered a high value in itself; therefore, a country where the ratio of institutional financing is 68% can already be regarded as being relatively low. As *Table 4* shows, both institutional financing and student financing have their own "followers". It is worth mentioning that *we only find large countries (ones with a population exceeding 20 million) with a focus on student financing with a low level of state expenditure. If a large country implemented a system focused on student financing with a high state expenditure ratio, that would certainly be a novelty.* Since we have no timeline of the statistics on institutional financing, we cannot make any comparison with historical figures from these databases.

Table 4		
Models for education funding[7]		
	Ratio of state expenditure (%)	
The ratio spent on public institutions within state expenditure	High (> 60)	Low (< 60)
High (> 77)	AUT, BEL, CZR, EST, FIN, FRA, GER, IRL, MEX, POL, POR, SPA	CAN, ISR, KOR
Low (< 77)	DEN, ISL, NLD, NZ, NOR, SLO, SWE	AUS, CHL, JAP, UK, US
Source: OECD (2014:248) and OECD (2014:276)		

It is worth exploring the distribution ratio between the two forms (i.e. between student lending and scholarships) if the state takes on a role aimed at private individuals. By expenditure on student lending, we mean the entire loan amount borrowed, and by scholarship we mean the amount received.

We compare *Figure 3* to *Table 4* to support the contention that in *those countries where institutional financing is relatively low, student lending will appear within student funding. Figure 3* only shows those countries about which we had data and the expenditure on student lending exceeds 0. The case of the United States is remarkable: it is by far the system with the largest student loan market, yet the involvement of the state in funding is low.

Table 5 shows the history of student lending by the state in a particular system, and to which type it belongs: to the income-contingent repayment type or to the category of annuity lending with mortgage repayment. The table implies that *although in the 1950s and 1960s student lending already existed, the major systems widely applied today only emerged later and gradually.*

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7   Not included due to a lack of data: CHE, GRE, HUN, LUX, TUR.

Figure 3

Distribution of involvement of the state between student lending (blue) and scholarship transfers (green)

(2011)
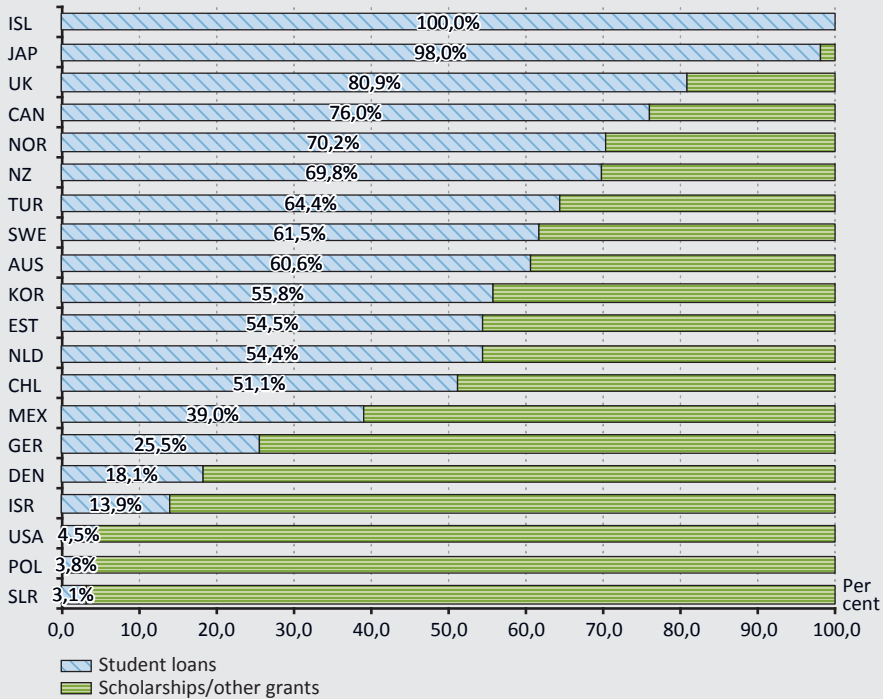
Source: calculation of the author based on OECD (2014:276)

Table 5

State student-lending programs according to inception and type (mortgage type lending – normal typeface; income contingent student lending – boldface; mixed lending – boldface, italics)

Before the 60's	60's	70's	80's	90's	After 2000
Japan	Canada	Denmark	**Australia**	Estonia	**Hungary**
Norway	Finland	Mexico	Belgium	New Zeland	Poland
	Iceland	*United States*	**Netherlands**	**United Kingdom**	Spain
	Turkey				

Source: edited based on OECD (2014: 274–275)

Furthermore, based on *Table 5* we claim that *governments apply a relatively careful approach concerning the organisation of student lending by the state, and although quite a lot of experiences have been collected about this, perhaps we still do not know enough*

to consider state student-lending programmes as natural. Over the next decade, several other countries will probably also join the existing ones with an abundant supply of data.

Table 6 presents some characteristics of the schemes that are already operating, based on which we can conclude that in the case of the average programmes, we should expect repayment terms of approximately 5–15 years and instalments of approximately 1,000–1,500 dollars annually. These instalments typically fall due on small debts. If we consider the two values and ignore the time value of money (apart from one or two exceptions, student loans bear a discounted interest, and precisely because of that, their interests are very low), then borrowers of student loans accumulated average debts of between 5,000–25,000 dollars. This can mainly be compared to debts arising from car loans. In fact, in the United States the market of student loans is the closest to this market in terms of size. The significance of such a market is mainly determined by how many persons are affected by it. In that regard, we can find very significant variations even though there is a scarcity of data. It is difficult to predict how many borrowers a student loan programme will have, but it is an oft-stated expectation from student-lending systems that they should be transparent and flexible. *Marcucci–Johnstone (2007b)* list six types of expectations of a well-designed and well-executed student loan programme: they should be generally available; able to provide sufficient funds; need-based; minimally subsidised; collectible; and able to tap the private capital markets.

Figure 4 provides further details on the question of affected persons. As a form of support, student lending and scholarship are not mutually exclusive. Scholarship holders also qualify for borrowing, should they need to do so; furthermore, borrowers of student loans also qualify for scholarships. However, educational systems differ in terms of how these facilities are distributed among affected persons. *Figure 3* provides some guidance. The ratio of persons only receiving student loans is very low, with the exception of Australia, Iceland and New Zealand. However, *the scholarship-plus-student loan combination is more common.* Student lending is probably a frequently applied source of funding among students when coupled with an appropriate system of scholarships. Consider the examples of Sweden or the Netherlands, where students almost exclusively use this combination. Even so, a significant variation has been registered in the range of 30% and 80% exposure. Due to this, it is actually quite difficult to predict the exact extent to which student lending by the state becomes a widely applied facility among students in order to cover their costs.

It may be argued that after some time, mobility becomes so strong that such a student-supporting organisation should be organised at the level of the European Union. On a large scale, this is an opportunity for the distant future (*Berlinger, 2012*). A programme called Erasmus+ Masters Loan will be started in the summer of 2015; it is designed to grant loans in the amount of almost 3 billion euros between 2015 and 2022 to persons studying in master courses abroad. It is expected that approximately 200,000persons will borrow this loan, which will be an interesting experiment *(europa.eu, 2015).*

Table 6
Data related to student lending

Country	Average loan repayment	Average amount of payment	Ration of graduates with debt
Australia	8 years	m	55
Belgium	5 years	276,275	n.a.
Canada	10 years	1057,92	n.a.
Denmark	7 -15 years	1975	45
Finland	5-10 years	1353,2541	38,5
Hungary	10-15 years	1039,296757	27,6
Iceland	22 years	n.a.	n.a.
Japan	15 years	1195,705	n.a.
Netherlands	15 years	n.a.	n.a.
New Zealand	6.7 years	1615	n.a.
Norway	16.4 years	1987,367668	n.a.
Spain	4.4 years	4392,003218	n.a.
Sweden	25 years	1130,904	n.a.
Turkey	1-2 years	2576,016	20
United Kingdom	14-15 years	n.a.	79
United States	10-25 years	m	67,7

Source: edited based on OECD (2014:275)

Figure 4
Ratio of students receiving funds from various sources or from a combination of sources
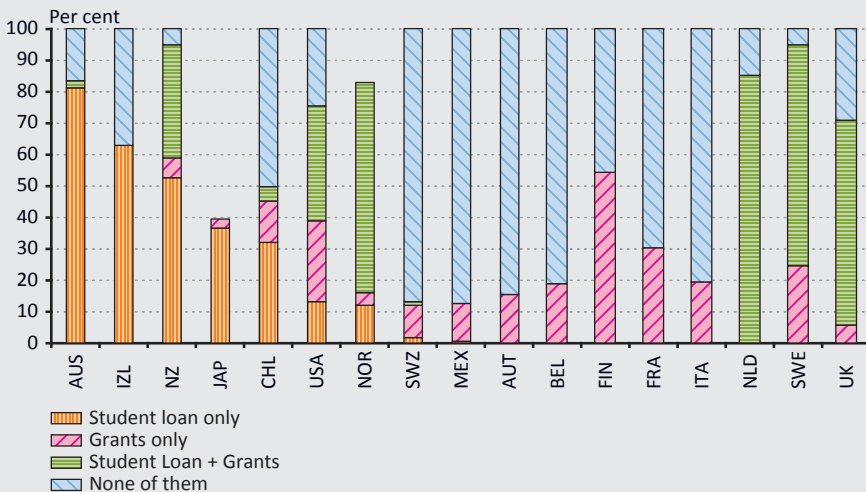
Source: calculations of the author based on OECD (2014:273)

5 Conclusions

In the section on analysis, we identify the following key trends on the basis of various figures: *(i)* In the long run, the volume of both private and state investments is continuing to grow, but the pace is slower; furthermore, there is no major correlation in the extent of the changes, only in their direction at best (*Figure 3*). *(ii)* Larger countries may run into size limits if they follow the Scandinavian model in the distribution of state sources and in the design of education financing, because one can never see an example of this working permanently for a large country (i.e. one with more than 20 million inhabitants) (*Figures 3–4*). *(iii)* The scholarship system and student lending could instead be designed as two systems that complement each other; in that case, they can become very common in practice (*Figure 3*). *(iv)* In a properly balanced system, however, a very high number of students may be affected by the process (as much as 70–80% of graduates, which may constitute 40% of the relevant demographic). Since graduates are typically persons under the age of 30, borrowing a student loan is probably one of their first serious financial decisions, which may mean a commitment of 5–15 years, with a cash flow equalling 1,000–1,500 dollars annually. Thus the student lending market can be as high as the market of car loans (*Tables 1–2*).

In the conclusion of the paper, research directions are formulated based on the results of the analysis.

The purpose of the paper was to provide a brief summary of the knowledge that we have on the economy of education at present, especially concerning the situation and trend of student lending. In the form of a brief theoretical introduction, we presented the circular dynamic that characterises the relationship between higher education and level of economic development. The more developed an economy is, the more it spends on education, which promotes further development. Student lending may be one of the tools of direct state support to students, which also affects the financial markets. Student lending is a complex issue, as it can be detached from regular lending, since the investment itself cannot be mortgaged. Accordingly, the issue of the involvement of the state in the financing of higher education is an issue that must be addressed with student lending in mind.

The trend whereby both private individuals and the state are spending more and more on higher education is identifiable, but it is difficult to identify anything else than a weak positive relationship between the two. There are countries where the expenditures of the state keep increasing at a faster pace, while in others private expenditures show faster growth. Typically, however, both of these keep growing to some extent. We managed to identify one of the characteristic types of education-financing models, the large country-large state model, as one of the possible engines for growth of the student lending markets. The global market is dominated by initiatives that are capable of pushing these systems,

operating with a large higher education market and a high level of state involvement, out of their current positions. Here we can expect potentially high tuition fees and large-scale student lending in the long term. At present, we cannot see any example in which investments in education would exceed 2% of GDP with the process taking place in a large country with high state involvement. These countries, such as Germany or France, either start moving towards a new model or have to follow the "Anglo-Saxon" path.

In light of the results of this paper and the relationships presented, it is possible to start moving in several directions. Based on the simple relationships of the first section, we can easily highlight cases that could be very exciting as a case study. One example is Chile, which has long been committed to such a regime of financing of higher education. It is numerically similar to a possible model that we could also recommend to countries following the large state involvement model. For the time being, these ratios are not yet reflected in a high per capita GDP, but research with a case study could enable us to identify economic impacts. Poland or Estonia lend themselves to such case studies. The social embeddedness of the fast emergence of Estonia could be an interesting topic.

The matter of risks raises an empirical question concerning student lending, both at an individual and a social level. At present, the market does not seem large enough to threaten with macro-level risks,[8] but one may ask whether this could change later on and, if so, under what conditions. Furthermore, the borrowing of student loans and its impact on educational choices is a relatively poorly charted area in literature. Fortunately, more and more secondary data enabling complex statistical analyses will become available concerning the financing of education, which will enable further research on this topic (even using Hungary as a sample, if that is desired).

An assessment of opinions on student lending could be a primary research topic. To what extent do long-standing programs comply with criteria of transparency and ease of comprehension? The comparative analysis of mortgage-type and income-dependent loans is also a topic that is still quite far from being fully researched.

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8   Over recent years, many authors have referred to the American student lending market as the trouble spot of the next crisis. However, the student-lending market is fundamentally different than a mortgage market, and perhaps most importantly, it is much smaller.

Annexes

Annex 1: Notation of countries

Abbreviation	Name of country	Name of country in Hungarian
AUS	Australia	Ausztrália
AUT	Austria	Ausztria
BEL	Belgium	Belgium
CAN	Canada	Kanada
CHL	Chile	Chile
CZE	Czech Republic	Csehország
DEN	Denmark	Dánia
EST	Estonia	Észtország
FIN	Finland	Finnország
FRA	France	Franciaország
GER	Germany	Németország
GRE	Greece	Görögország
HUN	Hungary	Magyarország
ISL	Iceland	Izland
IRL	Ireland	Írország
ISR	Israel	Izrael
ITA	Italy	Olaszország
JAP	Japan	Japán
KOR	Korea	Dél-Korea
LUX	Luxembourg	Luxemburg
MEX	Mexico	Mexikó
NLD	Netherlands	Hollandia
NZ	New Zealand	Új-Zéland
NOR	Norway	Norvégia
POL	Poland	Lengyelország
POR	Portugal	Portugália
SLR	Slovak Republic	Szlovákia
SLO	Slovenia	Szlovénia
ESP	Spain	Spanyolország
SWE	Sweden	Svédország
CHE	Switzerland	Svájc
TUR	Turkey	Törökország
UK	United Kingdom	Egyesült Királyság
USA	United States	Amerikai Egyesült Államok

Annex 2: Histograms for data of the year 2011
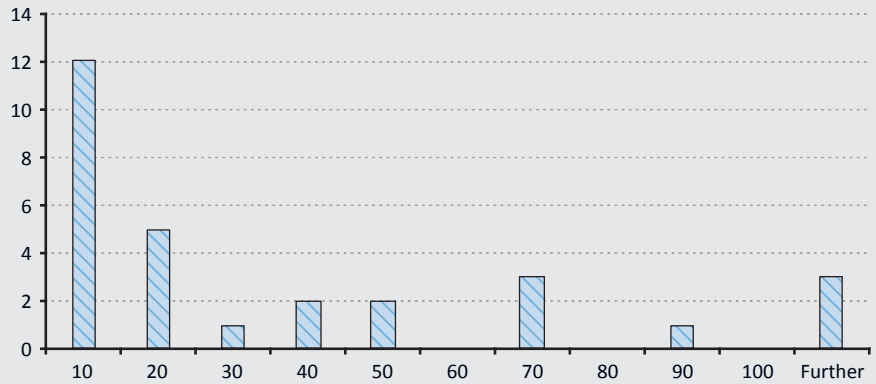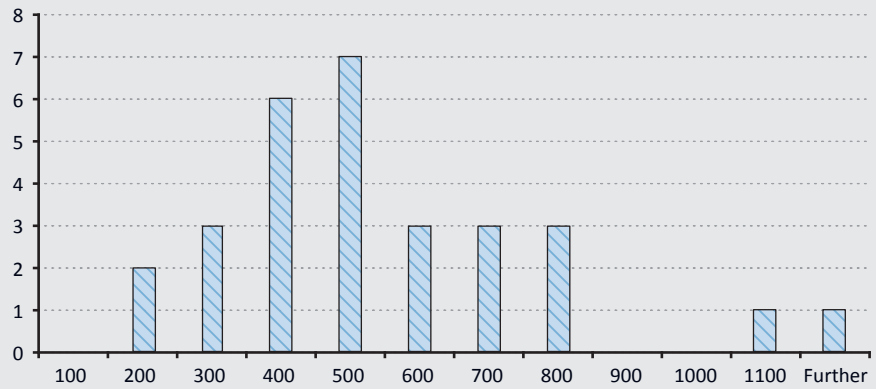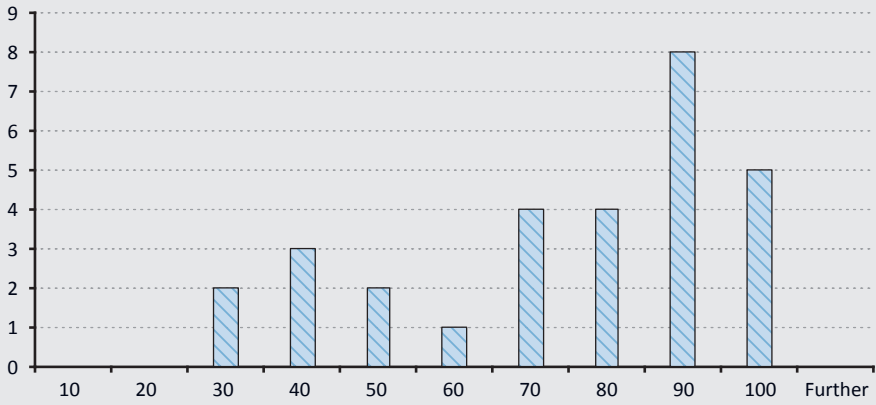
Source: calculations of the author based on OECD (2014:248); OECD (2015a) and OECD (2015b)

Annex 3: Models concerning educational expenditures (2000)[9]

Ratio of state expenditure (%)	Population (million persons)	Expenditure per one resident ($, at 2005 prices and at purchasing power)	
		Low (<360)	High (>360)
High (>60)	Large (>20)	GER,ESP,MEX,ITA,POL, TUR, UK	CAN, FRA
	Small (<20)	AUT, CZR, GRE, HUN, ISL, POR, SLR	BEL, DEN, FIN, IRL, NLD, NOR, SWE
Low (<60)	Large (>20)		JAP,KOR,USA
	Small (<20)	CHL	AUS, ISR

Source: calculations of the author based on OECD (2014:248); OECD (2015a) and OECD (2015b)

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9 Not included due to a lack of data: CHE, GRE, HUN, LUX, TUR.

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