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## INVESTMENTS IN HIGHER EDUCATION IN OECD COUNTRIES

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**Summary:** The article deals with investments in higher education in the most developed countries in the world, which importance is growing especially in consequence of increasing interest in higher education. The issue of obtaining additional financial resources is relating to countries, in which the system of higher education is covered primarily through the public resources. These countries should think about a change in their system of financing higher education in the future (for example by the implementation of student's financial participation on the costs allied to their education), because apart from that they might not be able to cover constantly increasing demand for higher education and also the increasing quality of higher education. This could consequently endanger their position in the international competition and also in the process of globalization.

**Keywords:** investments, higher education, benefits, OECD countries, expenditures.

### 1. Introduction

In connection with the issue of investing in education it is very important to discuss about the character of education as a good. Is it possible to consider the education as a public good? Education is often considered as a public good, from which is consequently derived, that the responsibility for providing and financing education should take on the state. As we can find out thereafter, this opinion is not exactly correct.

### 2. Determination of the character of education

The first place in defining the concept of public good belongs to P. A. Samuelson<sup>1</sup> (to another authors, who deal with the issue of public goods belong for example married

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<sup>1</sup> P.A. Samuelson, *The Pure Theory of Public Expenditure*, „The Review of Economics and Statistics“ 1954, Vol. 36, No. 4.

couple of Musgrave's<sup>2</sup>, J. E. Stiglitz<sup>3</sup>, J. M. Buchanan<sup>4</sup>, G. N. Mankiw<sup>5</sup>, etc.). Samuelson is considered as the establisher of the theory of public goods. He distinguishes between private and public goods. He accepts public goods as goods, which bring benefits for all members of society to the intent that the consumption of a public good by one subject do not preclude its consumption by another subject. Exactly this characteristic differentiates public goods from private goods. Resulting from the Samuelson's article we can define two main characteristics typical for public goods:

- **non-rivalry** – this characteristics points out that consumption of one good is possible to realize with more individuals without losing benefit from its consumption,
- **non-exclusion from the consumption** – this characteristics means that it is not possible to exclude anyone from the consumption of public good.

According to the typology of goods and defining concept of public good on the part of particular authors and their view at the issue of the character of education as a good, we attained to conclusion, or more precisely, we identify with the opinion that only the obligatory education belongs to public goods (because this type of education meets the condition about non – rivalry and non – exclusion from the consumption). It is not possible to classify higher education as a public good, because the consumption of it is partly rivalry and it is characterized by relatively easy exclusion from the consumption. Also its consumption is possible to willingly refuse. Higher education can also not be classified as a private good, because its consumption by one individual allows consuming by another. For reasons given, we consider higher education as a mixed good, which a consumer can consume so far to fill the capacity without reducing any benefit, which have another individuals from its consumption. This conclusion is also resulting from the working paper, which was made by the International Monetary Fund in 1999<sup>6</sup>. In this document it is noticed, that higher education is in general partly rivalry and also excludable.

It is necessary to consider higher education as a mixed good. So the state intervention in financing this part of education becomes necessity. This argument is testified to many factors, which are in general instrumental to give reasons for the state intervention to economy, but later these factors have been applied to providing and financing education. A pioneering article in the mentioned sphere was introduced by an important American economist M. Friedman in 1995 under the name of

<sup>2</sup> R.A. Musgrave, P.B. Musgrave, *Public Finance in Theory and Practice*, MacGraw – Hill, New York 1989.

<sup>3</sup> J.E. Stiglitz, *Economics of the Public Sector*, Norton and Co., New York 1988.

<sup>4</sup> J.M. Buchanan, *Public Finance in Democratic Process: Fiscal Institutions and Individual Choice*, The University of North Carolina Press, Chapel Hill 1987.

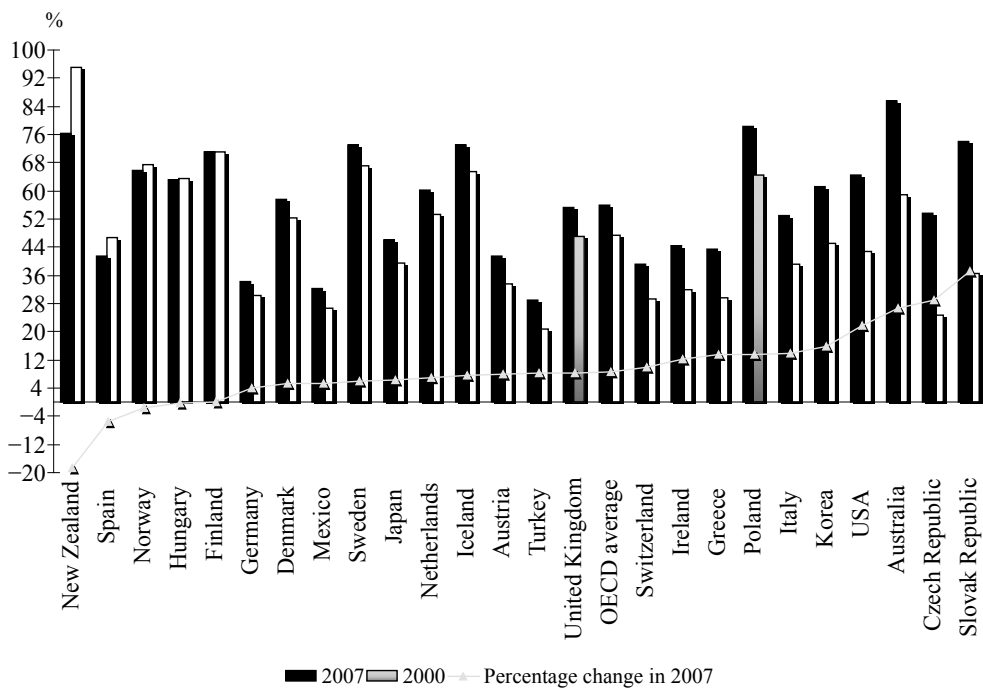
<sup>5</sup> G.N. Mankiw, *Macroeconomics*, Worth, New York 1992.

<sup>6</sup> B.U. Wigger, R.K. Weizsäcker, *Risk, resources, and education – public versus private financing of higher education*, International monetary fund, IMF Working Paper 1999, s. 3.

„The Role of Government“<sup>7</sup>. To the factors that give reasons to the state intervention in education M. Friedman classed under mentioned four points:

- 1) capital market imperfection,
- 2) incomplete information,
- 3) possibility to create a monopoly,
- 4) existence of positive externalities.

The last point, existence of positive externalities is the main reason for constantly increasing interest in higher education, which we can see in many of the most developed countries in the world (see Figure 1).



**Fig. 1.** Entry rates at tertiary education

Source: *Education at a Glance: OECD Indicators 2009*, OECD, Paris 2009, self creating.

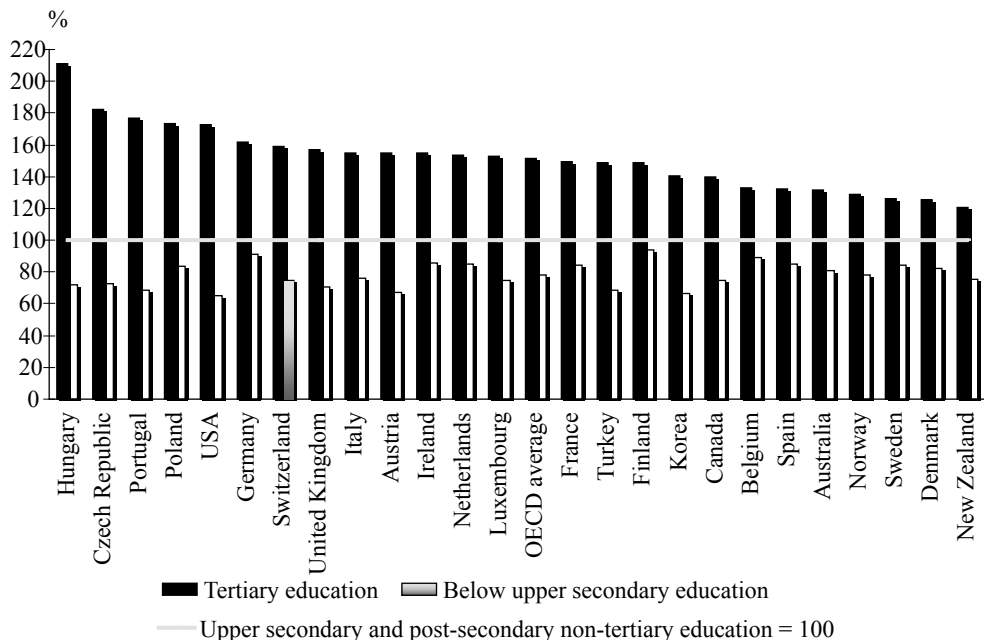
As we can find out in the chart, practically in each from the most developed countries in the world we could see an increase in entry rate to tertiary education in the year 2007<sup>8</sup> in comparison with 2000. The exceptions are only Norway, Spain and New Zealand (in Norway entry rate decreased only about 2%, in Spain about 6% and in New Zealand about 20%). In Hungary and Finland the entry rate to tertiary edu-

<sup>7</sup> M. Friedman, *The Role of Government*, [in:] R.A. Solo, *Economics and the Public Interests*, Rutgers University Press, New Brunswick 1955, s. 123-144.

<sup>8</sup> For this year are the most actual available data.

cation remained without any changes, abreast of the year 2000. In all other OECD countries we could notice an increase of interest in the tertiary education, concretely from 4% in Germany to 37% in Slovak Republic.

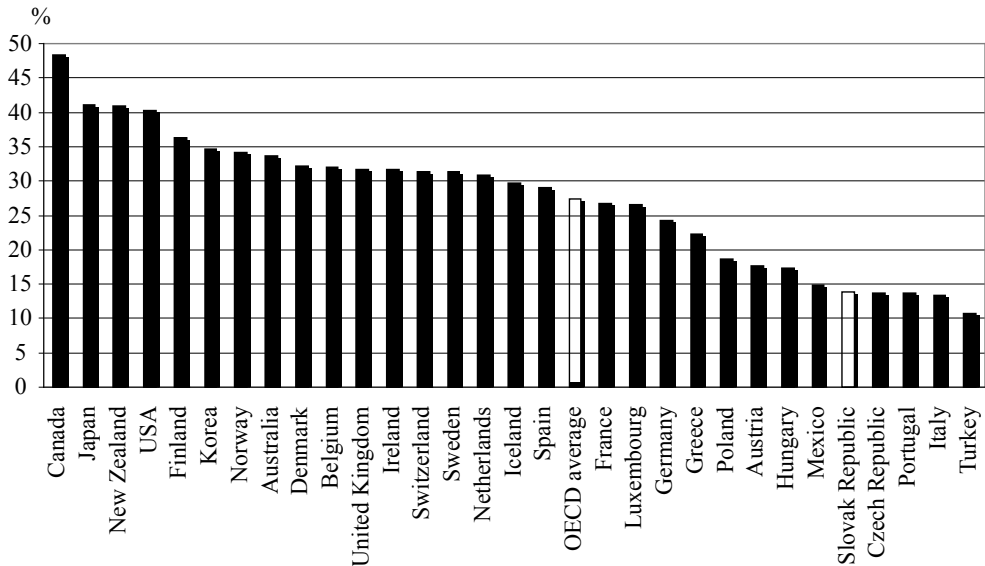
The interest in constantly increase of supply of higher education human capital comes not only from the government of the state, but also from the population living there. This interest of the individuals flows from benefits, which they can obtain from the higher education attained. The main benefits for individuals are especially higher earnings of employees with higher education attained in comparison with the employees without it and also a very high employment rate of individuals with higher education attained. These arguments we could explain through empirical data about the most developed countries in the world, which we illustrate in the Figure 2. From this chart we can see, that the relative earnings of the employees with higher education attained are significantly higher than the earnings of the employees with bellow education attained. This fact we can notice in each OECD country, for which the necessary data is available. In this chart the positive relation between the level of earnings and the level of education attained is expressly noticed. This fact motivates more and more individuals for the consumption of higher education.



**Fig. 2.** Relative earnings of the population with income from employment

Source: *Education at a Glance: OECD Indicators 2009*, OECD, Paris 2009, self creating.

If a country would like to stand to the international competition, which is characteristic for the process of globalization, it has to dispose of required capacity of the qualitative human capital. Therefore the aim of each country should be a constant increase of the education level of its population. The problem of low level of population with tertiary education attained we could also see in many the most developed countries in the world, as for example in Turkey, Italy or Portugal (see Figure 3).



**Fig. 3.** Population with tertiary education

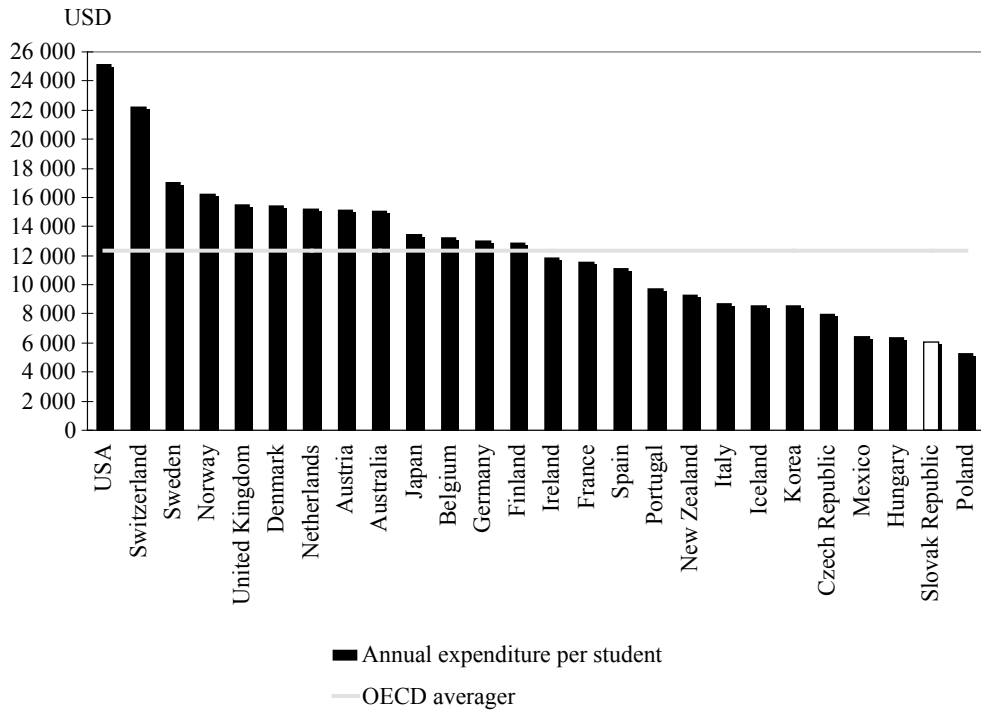
Source: *Education at a Glance: OECD Indicators 2009*, OECD, Paris 2009, self creating.

But for the process of increasing population with the tertiary level of education attained it is necessary to dispose of large additional financial resources, which are very difficult to obtain. So especially countries, which have the system of their tertiary education primarily covered through public resources, should come to think of a change in their system of financing tertiary education, because apart from that they could not be able to stand to the international competition and to ensure their future economic growth.

### 3. Investments in higher education in OECD countries

Investments in higher education in the most developed countries in the world can be described by several indicators for each OECD country for which the necessary data is available.

The first selected indicator monitors the annual expenditure on higher education institutions per student, which is presented in US dollars and calculated by purchasing power parities (see Figure 4 below).



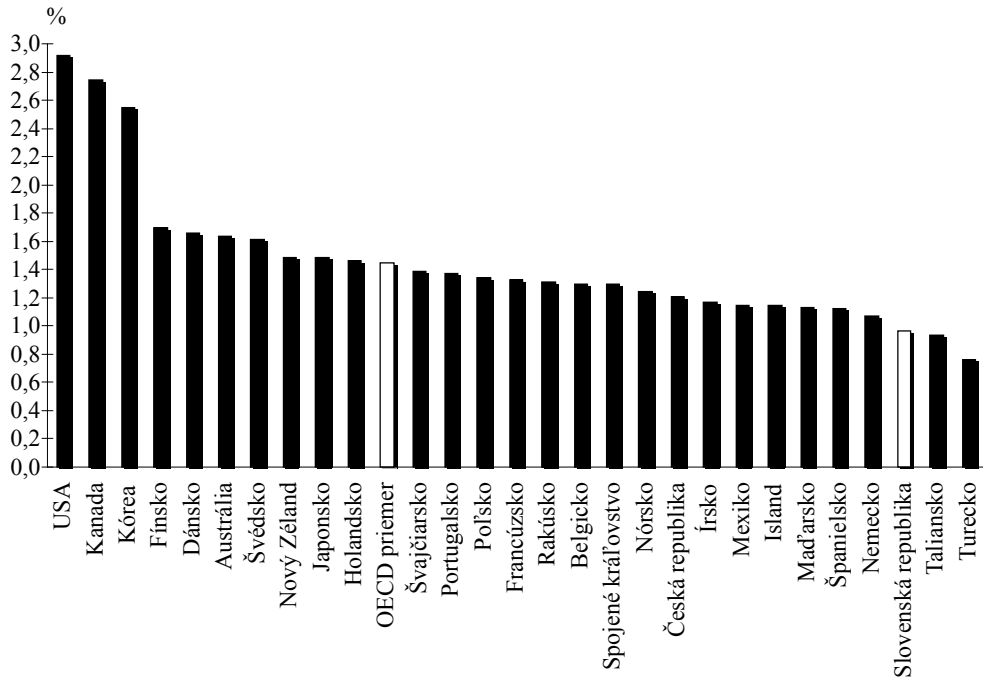
**Fig. 4.** Annual expenditure on higher education institutions per student for all services

Source: *Education at a Glance: OECD Indicators 2009*, OECD, Paris 2009, self creating.

From this chart we can see that the annual expenditures on higher education institutions per student (including also R&D activities) reached the average for OECD countries of 12 336 USD and ranged from 5 224 USD in Poland, to 25 109 USD in the United States. This relatively high average annual expenditure per student was influenced by the very high expenditures in a few countries, notably in the United States and in Switzerland. Above average value is nearly half of all the most developed countries in the world for which data is available. The Slovak Republic belongs to these countries, which spend least financial resources for higher education per student. In OECD rankings Slovakia obtains the penultimate place. Behind is only Poland.

Another indicator chosen to identify the status of financing higher education in the most developed countries in the world is indicator monitoring the spending on higher education as a percentage of gross domestic product. Share of spending on

higher education to GDP indicates how high priority represents the process of education for each country in relation to its limited budget.



**Fig. 5.** Expenditure on tertiary educational institutions as a percentage of GDP

Source: *Education at a Glance: OECD Indicators 2009*, OECD, Paris 2009, self creating.

Based on Figure 5 we can see that OECD countries spend in tertiary education on average 1,4% of their GDP, which represents more than 25% of all sources for education. The largest share of GDP to higher education is given in the United States (2,9%), in Canada (2,7%), in Korea (2,5%), in the Nordic countries (Finland and Denmark – 1,7%, Sweden – 1,6%) and in Australia (1,6%). Least share of gross domestic product to the higher education provides Turkey (only 0,8% of GDP) and Italy (0,9% of GDP). Expenditure on tertiary education institutions in the Slovak Republic, in comparison with other OECD countries is deeply underfinanced (only 1% of GDP).

#### 4. Conclusion

In many of the most developed countries in the world the investments in higher education are very low and insufficient. From this point of view these countries should

think about a change in their system of financing higher education in the future (for example by implementation of student's financial participation on the costs allied to their education), because apart from that they might not be able to cover constantly increasing demand for higher education and also increasing quality of higher education. This could consequently endanger their position in the international competition and also in the process of globalization.

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## INWESTYCJE W SZKOLNICTWIE WYŻSZYM W KRAJACH OECD

**Streszczenie:** Artykuł dotyczy inwestycji w szkolnictwie wyższym w najbardziej rozwiniętych krajach świata, których znaczenie rośnie szczególnie jako skutek wzrastającego zainteresowania kształceniem wyższym. Problem pozyskania dodatkowych środków finansowych dotyczy krajów, w których system szkolnictwa wyższego jest opłacany głównie ze środków publicznych. Te kraje powinny pomyśleć o zmianie ich systemu finansowania szkolnictwa w przyszłości (np. przez wprowadzenie finansowego udziału studentów w kosztach ich edukacji), ponieważ bez tego mogą nie sprostać rosnącemu popytowi na kształcenie wyższe i również rosnącym wymogom jakościowym edukacji. To może w konsekwencji zagrozić ich pozycji w konkurencji międzynarodowej, a także w procesie globalizacji.