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PUBLIC EDUCATION AND ECONOMIC COMPETITIVENESS[1]

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Abstract: *There is a certain connection between education and economic competitiveness. The relation between these two concepts is easy to intuit. On the medium and long term investments in education generate a strong increase in a country's level of economic competitiveness. Through education the human capital is formed, and it affects all economic fields. Therefore we can observe that human capital has a decisive influence on the economic competitiveness of a country.*

Key words: Investments; education; economic competitiveness; public goods
JEL Classification: E24**;** H23; H41

In this article we try to capture the manner in which education affects economic competitiveness through the formation of human capital. We study the impact of education on human capital and therefore on economic competitiveness because education is the service whose output influences most visible, directly or indirectly, all the economic sectors and institutions from a country.

The debate regarding **the impact of education on economic competitiveness** is still open and there are more or less adequate opinions pro and against the existence of this impact and its amplitude. The reality is that through spillover effects education can have a significant effect on economic competitiveness. That is why we accept that investments in education are a significant factor of influence on economic competitiveness. Education can affect/influence the economic competitiveness of a country in a variety of ways, but the most visible way is the formation of human capital. The effects of human capital formation are higher than the ones of investments in infrastructure. Anyhow regardless of the destination of public investments their influence can't be quantified instantly.

Which are the effects of investments in public education?

The most visible effect consists in the fact that **no kid is left outside the system** of education. All individuals have the possibility to achieve themselves through education. Thus, through investments, the total amount and quality of human capital is steadily growing.

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Generally speaking, we could say that all areas, whether or not economic, are affected by education and by the fact that individuals trained in the system get to practice in it. But it is also important to note that the link between education and economic sectors is not very strong on the short term and that the effect of investments in education will be visible in these areas only on the long run.

The link between education and economic competitiveness can also be deduced from the effects on economic indicators attributed by a number of authors to education. Author who considers that it and its quality level is responsible for increasing tax revenue and for the evolution of other economic indicators. Education affects income, innovation, health and happiness and may be essential in helping people to escape the various dimensions of poverty (Knight, Shi and Quheng, 2007, p. 3).

Although there are multiple effects of education upon the factors of economic competitiveness, like:

Effects on incomes

On the long term investments in public education can affect personal incomes and total incomes in a country. Revenues are higher for talented individuals who have better skills, factors that can contribute to this being: over-education, networking skills, quality schools and multiple specializations (Martins and Pereira, 2004, p. 20). In other words the accumulation, of skills and knowledge, via public education, enables them to obtain better paid jobs.

Education factors such as higher participation to education or a balanced distribution of education are instrumental in achieving a more balanced income distribution (de Gregorio and Lee, 1999, p. 3). This is also obvious because if a higher proportion of the population endorses the knowledge and skills, extreme differences between revenue will disappear.

Effects on GDP

Investments in education have a very strong influence on GDP. According to a study conducted between 1960 and 2000 in the U.S., each additional year of schooling attracted, on average, an increase in GDP of 0.58%. Improving the average level of knowledge determines a significant increase of GDP (Hanushek and Wößmann, 2007, p. 4).

Tests conducted in Western Europe and the U.S. showed that two thirds of their growth rates during the period of the Second World War and 1967 were generated by: advance of knowledge, the entries in the structures of education, scale economies and a more efficient allocation of resources (Denison, 1967 in Garces, 2010, p. 7). While low competitiveness of Latin American countries can be attributed to a deficit of education.

Encountered problems

One of the major problems states are facing consists in providing the right amount of education and ensuring the quality of the content and its format. Difficulties relating this issue are of financial, cultural, and sociological nature. Providing high quality education is linked to economic prosperity and at the same time, the lack of education fuels a perpetual state of poverty. This is certainly not the only factor causing poverty, but its affecting, the least developed human capital (Garces, 2010, p. 4). For example, the lack of developed human capital prevented the development of Latin America, because there is a definite connection between technological growth, human capital and education.

We don't intend to suggest that the human capital is formed through education, because each individual can be considered a unit of human capital if it's able to do some economic activities. But the process of education has another role; it increases the value of human capital, allowing entrepreneurs to start businesses with higher added value. The existence of these companies, with high added value, will be reflected in the value of the competitiveness rankings. So, in other words, education influences economic competitiveness through the formation of a higher value human capital.

How does education affect the economic competitiveness?

If we want to measure the impact of public investments in education we can compare world countries in terms human capital rankings. Thus, investments in public education, which are financed through taxes, have as effect an increase of the quality of human capital stocks, which, as a production factor, increases the overall level of productivity. On the other hand, if the level of education is low, it can lead to true "poverty traps" and may accentuate inequalities between generations (Zilcha and Viacene, 2003, pp. 3).

These poverty traps are described in the literature as inabilities of parents to ensure their children's education at a higher level so that they cannot get higher incomes as them, perpetuating the poverty of the family. These "poverty traps" can affect economic competitiveness because an important part of human resources cannot be engaged in activities with high added value.

Given that education level affects both living standards and quality of life, we can say that the degree of human capital development is closely related to it. An interesting connection is the one between the degree of development of human capital and the economic competitiveness of nations.

Table 1 - States with highly developed human capital

Nr. crt.	Countries	Nr. crt.	Countries

1	**Norway**	11	**Japan**
2	**Australia**	12	South Korea
3	New Zeeland	13	**Switzerland**
4	**USA**	14	**France**
5	Ireland	15	**Israel**
6	Liechtenstein	16	Finland
7	**Holland**	17	Island
8	**Canada**	18	**Belgium**
9	Sweden	19	**Denmark**
10	**Germany**	20	Spain

Source: adapted after Human Development Report 2010, p. 171

If we analyze, for example, the top 20 nations according to their degree of development of human capital (see the Human Development Report, 2010), we observe that these countries are very competitive.

There are 2 essential rankings regarding the estimation of the competitiveness of a nation. One is edited by the World Economic Forum and the other one by the IMD Institute from Lausanne, Switzerland. If we analyze, for example, the ranking of competitiveness estimated by the World Economic Forum, we observe that all these countries are from the last category – of the countries that rely on innovation.

Table 2 - Nations Economic Competitiveness Ranking [2]

World Economic Forum ranking		IMD ranking	
Nr. crt.	Countries	Nr. crt.	Countries
1	**Switzerland**	1	Hong Kong
2	**Sweden**	2	**USA**
3	Singapore	3	Singapore
4	**USA**	4	**Sweden**
5	**Germany**	5	**Switzerland**
6	**Japan**	6	Taiwan
7	**Finland**	7	**Canada**
8	**Holland**	8	Qatar
9	**Denmark**	9	**Australia**
10	**Canada**	10	**Germany**
11	Hong Kong	11	Luxembourg
12	Great Britain	12	**Denmark**
13	Taiwan	13	**Norway**
14	**Norway**	14	**Holland**
15	**France**	15	**Finland**
16	**Australia**	16	Malaysia
17	Qatar	17	**Israel**

[2] The two annual rankings are based on methodologies developed by the two bodies. The indicator of the World Economic Forum is calculated on the basis of 12 major criteria. The other is issued by the International Institute for Management Development in Lausanne, Switzerland, on a basis of over 300 criteria.

18	Austria	18	Austria
19	**Belgium**	19	China
20	Luxembourg	20	Great Britain

Source: adapted after The Global Competitiveness Index, 2010-2011, p. 15 and after http://www.imd.org/research/publications/wcy/upload/scoreboard.pdf

If we compare the economic competitiveness rankings at the level of human development, we observe that more than half of the top twenty countries are on the same places in both rankings. Its not difficult to explain this fact. The most developed countries invest in long-term education. To some extent, we can even say that the degree of human development is not only a cause of increasing competitiveness, but also an effect.

Possible threats

If countries with productive sectors which are not well-developed invest in education, they are likely to create outputs of human capital that would not be useful for them. There is a risk of "producing" specialists who have not where to work. For this reason, when creating supply, public bodies dealing with investment in these sectors must take into account the existing potential of absorption of the country, of emigration and immigration rates, of the private supply of education and capacity development of country. In other words, the deciding organism, for the investments in education, from each country must take into account present and future demand for specialists. Since a career covers a period of about 40 years, the forecast capacity should be a very precise. This is possible only in principle.

CONCLUSIONS

There exists a certain connection between these three components: education, human capital and economic competitiveness. But the problem has many aspects still unclear; there is room for a lot of other studies to try to clarify it.

The value added to human capital increases the competitiveness of a state. Studies realized in time show that investments in education have strong effects on human capital and, therefore, upon economic competitiveness.

The states which have the highest rates of developed capital are the most competitive ones. In fact the best way to influence, determine or change the economic competitiveness of a state is to transform it's human capital structure.

But, beware, the time required to improve the human capital can be extremely long. For human capital formation unit may be required and over 20 years.

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