Higher education and training as crucial pillars in creating the competitiveness of nation

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Abstract

The article tries to accent that one of the fundamental challenges and tasks of the contemporary national economies in an effort to create and maintain competitiveness is to develop and upgrade the human capital through a qualitative educational system and a system of continuous training of the workforce. Using the data from the World Economic Forum (WEF)’s Global Competitiveness Reports the paper presents the interdependence between the quality of the educational and training system and the level of competitiveness. The paper is focused on the South East European (SEE) countries and the quality of their educational and training system as one of the reason of their competitiveness lag. Through the correlation index the paper confirms the differences in relationship of education and training/competitiveness index between SEE, Central European and Baltics (CEB) economies and some EU members.

Keywords: Higher education; training; competitiveness.

1. Introduction

The paper highlights the role of higher education and training system in enhancing the competitiveness of nation. It examines the quality of higher education and training system of some SEE countries according to the Global Competitiveness Reports of World Economic Forum. The pillar of higher education and training of SEE countries will be first compared with that of CEB countries and the EU15 members. The paper will elaborate the reasons that
might be crucial for the pillar quality lag. Second, through the correlation analyses it will prove the reliability of competitiveness on the education and training quality.

Knowledge and skills of human resources are dynamic categories that are acquired through the process of continual improvement of the educational and training system that allows flexibility and adaptability of the human factor in accordance with the market needs. Within the knowledge-based economy, the creation of knowledge and its effective transfer in industry is a key factor in increasing the competitiveness of nations. Investing in quantitative and qualitative development of higher education means investing in knowledge, skills and abilities necessary to create greater productivity and higher added value. According to Schultz (1993) the human capital "is a key factor for increasing and sustaining competitive advantage, so maintenance of competitiveness requires human capital to become a tool to increase productivity" (p.16). Rastogi (2002) emphasizes that "human capital is an important input, especially through the continuous improvement of knowledge, skills and capabilities" (p.198). Becker (1993) notes that "the costs of education and training are capital investment that have a return value" (p. 25). Benhabib and Spiegel (1994) notice the crucial role that human capital plays in the process of technology absorption.

The quality of the education and training system is a key requirement in the process of creating more added values in the production of goods and services and in increasing the investment attractiveness of the SEE economies, but at the same time they are one of the major flaws in the creation and promotion of competitive capacity in all SEE economies. According to Borensztein, Lee and De Gregorio (1998) "there is a strong complementary interaction between FDI and human capital" (p.121).

The empirical results within the WEF’s Global Competitiveness Reports show a high portion of differences in the level of growth of educational and training aspects of human capital. So the qualitative level of human development is determined and identified as one of the main weaknesses in the creation of competitiveness in all SEE economies.

The research analysis confirms the positive correlation between the quality of human capital and competitiveness, so the investment in education and training process should be a key weapon in the whole process of competitiveness creation for all SEE economies. It is useful to determine if the actual measures, policies and level of investment employ by the SEE countries are good enough to ensure higher level of competitiveness. Through the research we can realize that any investment in the improvement of the quality of human capital through the educational and training process can lead to higher competitiveness of nation. The education and training process for the SEE economies would have a role of multiplier, because it will improve and contribute to technology readiness and innovations, which are the main weaknesses in the competitiveness of SEE economies. The SEE economies should follow the experience of the advanced EU economies and former transition economies actual members of EU, which use investment in human capital as a reliable recipe in creating competitiveness and also as a power tool in overcoming any kind of economic crises

2. Method

The first research method used for this study is a correlation analysis. It helps in investigating correlation between the higher education and training system and Global competitiveness index. It is found out the strong positive correlation of 0.86 between them. Also we realised that differences in the level of quality of education and training system lead to differences in correlation index. Individual correlation index made for the separate group of economies confirmed the strongest correlation of 0.89 for the advanced developed economies of EU and the lowest correlation of 0.28 for the developing countries in SEE.

Using the method for linear regression it is identified how the disparities in education and training system between the economies with different level of development can influence the competitiveness index. The formula 1, for regression analysis, helps to detect what value of the quality of education and training system lead to higher competitiveness. So it is useful to predict how the changes in education and training system influence the changes of competitiveness

\[ y = 0.92 + 0.74x \]  

Correlation and regression analysis are based on the data for indicators of competitiveness analysed and exposed in the annual Global Competitiveness Reports prepared by the World Economic Forum.
Integral method within the research is comparative analysis as a useful tool to compare the data and results among analysed group of economies: developing economies of SEE, the former transition economies of CEB and five advanced economies of EU ranked in the first top ten most competitive economies according to WEF.

3. Results

The annual Global Competitiveness Reports of World Economic Forum have examined competitiveness as the unity of set of complementary factors that enable or disable the process of creating the competitiveness of nation. The WEF (Global Competitiveness Report, 2011-2012) defines the competitiveness as the set of institutions, policies and factors that determine the level of productivity of a country. The human factor as a crucial component is analysed within the Global Competitiveness Index as a separate factor (pillar 4: Health and primary education and pillar 5: Higher education and training). The human factor through the qualitative component has also direct influence to other competitiveness pillars, i.e. a well-educated and trained workforce influence to pillar 9: Technological Readiness and pillar 12: Innovation.

Higher education and training are key preconditions for competitiveness creation, but also the factor that lead to development gap between advanced and developing economies. The following figure, on the scale from 1 to 7, shows the differences in the quality of the pillar between: SEE economies, CEB economies and EU15.

Fig. 1. Higher education and training pillar in SEE, CEB and EU15 countries


The weaknesses of the pillar 5: Higher education and training in SEE countries is connected with the weaknesses of national education and training systems that have quantitative and qualitative nature.

Quantitative reasons refer to the low level of enrolment that accounts 40.8% for SEE region, compared to the percentage of enrolment in the EU15 which is over 65% and in CE Baltics where reaches over 66%. High percentage of coverage of the population in higher education represents one of the crucial factors in the process of creating competitiveness.

Except to the quantitative element, SEE countries lag behind in terms of qualitative aspects of education, which are directly connected to the financing of the education and quality of curricula and teaching methods.

Public investment in education in the EU ranges between 5.5 and 6% of GDP, which is consistent with the recommendations of UNESCO, despite investments in SEE countries which are around 4% of GDP (UNESCO, Institute for Statistics). These data suggest that support for education by budgetary resources is far away from established criteria to ensuring a certain level of educational quality. One of the serious weaknesses in financing of education which is common to all SEE countries is the lack of support from private sources, which in the EU reaches 1% of GDP.
The low level of training practice is one of the reasons associated with low quality and inflexibility of the human factor in SEE countries. Differences in the quality of training system that exist between the EU and the countries of Central Europe on the one hand and the economies of Southeast Europe on the other are reflected in the share of participation of the population in the training system. In EU 9% of the population is involved in the training system, while the share in the former transition countries of Central Europe – actual EU member states is higher, i.e. the Czech Republic 11.4%, Estonia 12%, Slovenia 15.9% (EUROSTAT). Such a high share of participation in the training system in the former transition economies from CEB, contribute to higher flexibility of the labour and reduction of unemployment caused by the transition process. In contrast the share of the population involved in the training system in SEE countries is between 2 and 3% of the population.

The positive relationship between the quality of education and training system and the index of competitiveness can be seen through an analysis of the correlation index (r) and linear regression analysis. The analysis is made on the examples of three types of economies: the first five advanced economies of EU that are ranked in the top ten most competitive economies according to WEF, the second group are the former transition economies today’s members of EU and the third group refer to the developing countries from SEE.

<table>
<thead>
<tr>
<th>Country</th>
<th>Quality of education and training system (s)</th>
<th>GCI (y)</th>
<th>r* for separate group</th>
<th>r* for all economies</th>
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<tr>
<td>Albania</td>
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<td>r = 0.28</td>
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<td>r = 0.86</td>
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<td>Croatia</td>
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<td>Appendix C.</td>
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<td>Macedonia</td>
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Note: r* - correlation coefficient
Source: WEF, 2013, GCR (2013-2014)

Applying the formula for correlation between the quality of the education and training system as an independent variable and the index of competitiveness as the dependent variable is obtained a correlation index of $r = 0.86$. It indicates very strong positive relationship. If we calculate the correlation coefficient separately for every group of the analysed economies we will get different results which reflect the differences in the level of education and training development. The relationship is highest in the case of advanced EU members where the coefficient $r = 0.89$. The lower relationship expresses the former transition economies of CEB where $r = 0.39$, but the coefficient of $r = 0.28$ for SEE economies reflects slightly relationship between higher education and training with the competitiveness.

Using the formula for linear regression we can estimate that any increase in the quality of higher education and training system lead to higher index of competitiveness. So we can predict the value of the competitiveness index for any higher or lower value of higher education and training.
The figure 2 shows that education and training gap plays an important and increasing role in explaining competitiveness disparities among the advanced economies of EU and developing countries of SEE. It confirms the fact that education is a significant factor in raising national competitiveness in the contemporary knowledge-driven economy, (Johansen and Sahlberg, 2011).

Thus the main direction of the measures and policies that should have crucial impact in improving the competitiveness and sustainable development of the economies of SEE should be focused in enhancing the education quality and constantly upgrading the quality of the workforce.

4. Conclusions

Human capital is a crucial factor in the process of competitiveness creation. It acts directly through the labour market or as enabler of the process of competitiveness creation. As we can realised from the previous analysis, investment in human capital means investment in competitiveness creation. Creating highly qualified human skills is a key precondition for productivity growth. According to research finding there is a strong relationship between the quality of educational and training system and the level of competitiveness.

Being familiar with the national competitiveness index provides an opportunity to make a comparative analysis with regional and some target countries, on the same or higher level of competitiveness, to explore the differences in the level of competitiveness and to employ measures, activities and policies that would lead to qualitative and quantitative improvement of the educational and training process. The low level of investment in educational and training system in SEE countries is one of the main reasons for competitiveness disparities compared to the advanced countries of EU. It is essential to accent that higher public and private investment must be directed in
enhancing the quantity and quality of education and training process because the human capital is a crucial factor of switching to a higher level of development, i.e. innovation based development.

References


Detailed statistics on the EU and the candidate countries (http://www.epp.eurostat.ec.europa.eu)


