

**JEL: I20, I29****HUMAN CAPITAL INVESTMENT IN THE SLOVAK REPUBLIC****Jarmila Vidová**, PhD in Economics, MBA,*Department of Economic policy, Faculty of National Economy,  
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**Abstract:** *Human capital is an important source of the economic growth. Human capital embodies knowledge and experience. Its formation is influenced by the family environment, but mainly in schools as the main educational institutions. The learning process needs to be constantly improved, adapted to the global challenges and trends. The need for education is primarily based on the real life, as people without education do not have the opportunity to find a high-quality job in order to secure their future income. There is a great deal of attention in education in the Slovak Republic and around 4% of GDP is invested every year in the educational processes that is less than the EU average indicator. In our paper we focus on theories of human capital and investment in education in the Slovak Republic.*

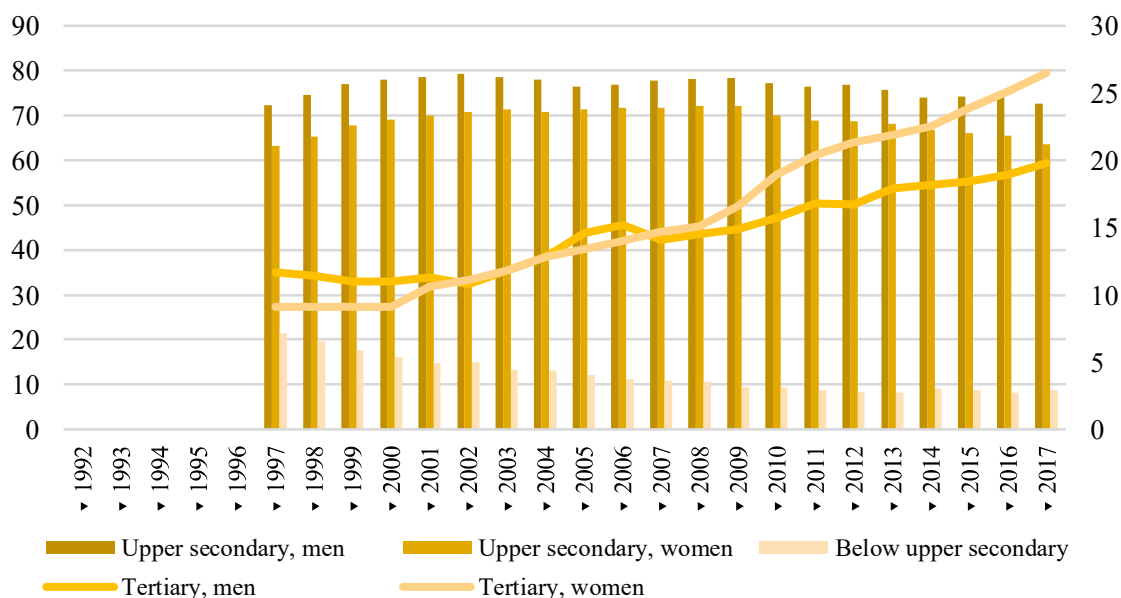
**Keywords:** *education, investments, educational expenditures, economic growth, life quality, household*

**INTRODUCTION**

Human beings become into the center of attention under conditions, where they are the main element of the capital production and creators of values. The importance of human capital and its role and significance in the society has been addressed by many authors and considered as a major determinant of economic growth along with capital and land (Mankiw, Romer & Weil, 1992; Becker, 1993, Armstrong, 2007). Human capital is a productive factor with specific characteristics, which Adam Smith (1776) has already noted in his research, because he has included people's knowledge and skills among production factors. Human capital theory has been elaborated in the early 1960s. The concept of human capital in general economics was introduced by Milton Friedman, when he divided wealth into human capital and other capital in his analysis of money demand. Human capital can be characterized as the sum of innate and acquired abilities, knowledge, experience, habits, motivation and energy that people possess, and which over a period of time can be used to produce goods and services. Samuelson and Nordhaus regard human capital as a collection of useful and valuable skills and knowledge that people have accumulated in the process of education and training. At the same time, they believe that education-based human capital is an excellent investment for the future and a "guarantee" of higher earnings (Smith, 2008). Lucas (1988) has considered human capital to be the engine of long-term economic growth. Other authors dealing with the relationship of human capital and economic growth identify it with a school education (Gould & Ruffin, 1995; Gundlach, 1995). From current authors, Vodák and Kucharčíková (2007) consider human capital to be a major element of the production process that is able to learn, innovate, encourage and implement changes and think creatively. All abovementioned is a prerequisite for a long-term successful operation of human capital in the real economy (ibid).

Human capital theory argues that educational process and training is essential to human resources, thereby generating human resources for knowledge and skills, and thus, investment in education have a direct influence on the economy (Shultz, 1961). According to Marshall (1925), long-term investment in education and its quality, especially for the creation of innovations, are a prerequisite for economic growth. The quality of education is one of the primary preconditions for future development, competitiveness and a determinant of the elimination of social inequalities. In today's modern society, education is important and becomes a lifelong process. Connection between education and human capital is addressed by several authors. They pointed to the positive relationship between education and economic growth, while focusing on the quality of education (Hanushek, 2008; Orbanová, 2017).

The educational process in the Slovak Republic is under the responsibility of the Ministry of Education, Science and Research, and Sport. It is divided into several levels, i.e. pre-school facilities, primary, secondary and tertiary schools. Based on the OECD data since 1997, the percentage of middle-aged men and women has been developed equally over the long term (left axis); shares of university graduates are increasing. In comparison with 1997, the proportion of women with university education increased from 9.1% (right axis) to 26.5% and the proportion of men with university education increased from 11.7% in 1997 to 19.8% in 2017. There are significant decreases the share of the population with lower secondary education from 21.42% in 1997 to 8.7% in 2017 (*Figure 1*). In addition to the education at above-mentioned levels, the Slovak Republic also places emphasis on lifelong learning by means of universities, retraining organization and other educational institutions.



**Figure 1: Development of the level of education in the Slovak Republic (%)**

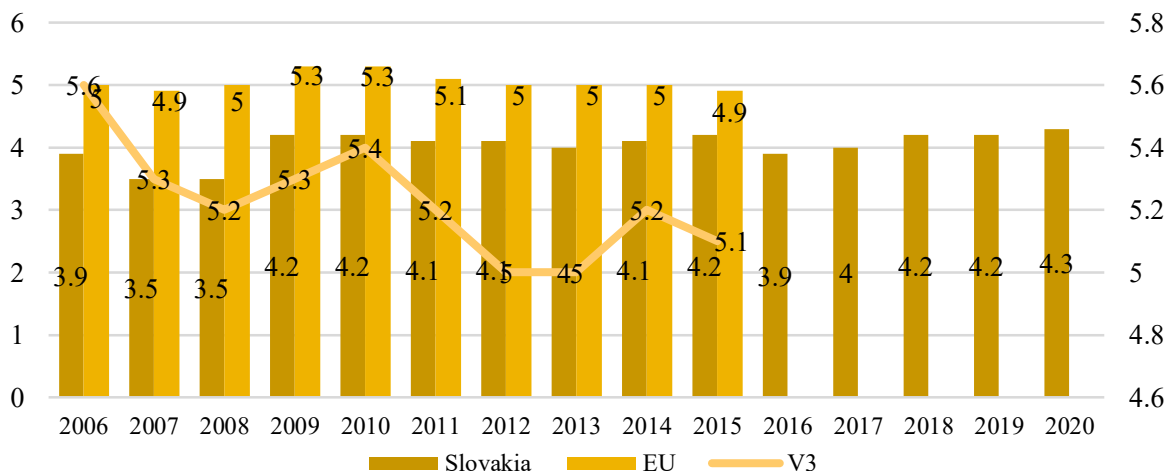
*Source: processed by author based on the OECD data*

## MATERIALS AND METHODS

Both descriptive and graphical analysis have been used during our analytic research of human capital development in the Slovak Republic. Scientific papers of leading foreign and domestic scholars are the base for current researches and conclusions.

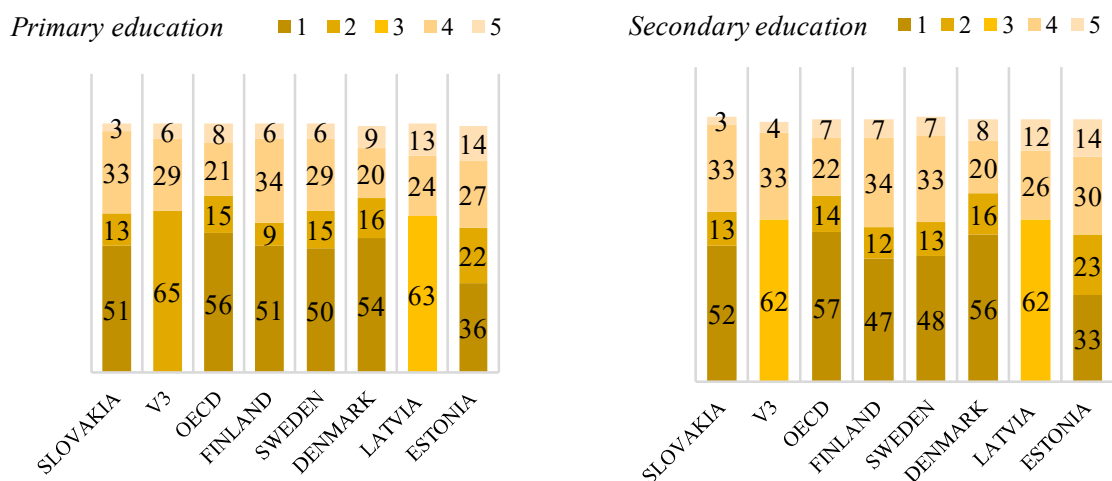
## RESEARCH ON EDUCATIONAL EXPENDITURES

An educational policy is within the competence of the Member States in the EU. Educational expenditures depend on the economic development and the GDP's level achieved. In 2016, educational expenditures in the EU-28 were 4.7% of GDP on average. Of this, pre-primary and primary educational expenditures were 1.5%, secondary educational expenditures were 1.9% and tertiary educational expenditures were around 0.7% of GDP. The highest share of educational expenditures on GDP were in Denmark (6.9%), Sweden (6.6%) and Belgium (6.4%). Slovakia spent around 4% of GDP on education in 2017, which is roughly less than the EU average. The gap has narrowed in recent years and is projected to rise to 4.3% of GDP by 2020 (*Figure 2*).



**Figure 2: Public educational expenditure in 2006-2016 and forecast by 2020, (% of GDP) (according to COFOG methodology)**

Source: processed by Revision of Education Expenditure (2017) based on the data Ministry of Finance and Ministry of Education of Science and Research, and Sport of the Slovak Republic, Eurostat (2017)



**Figure 3: Distribution of educational expenditures in the Slovak republic (from both public and private sources, 2014)**

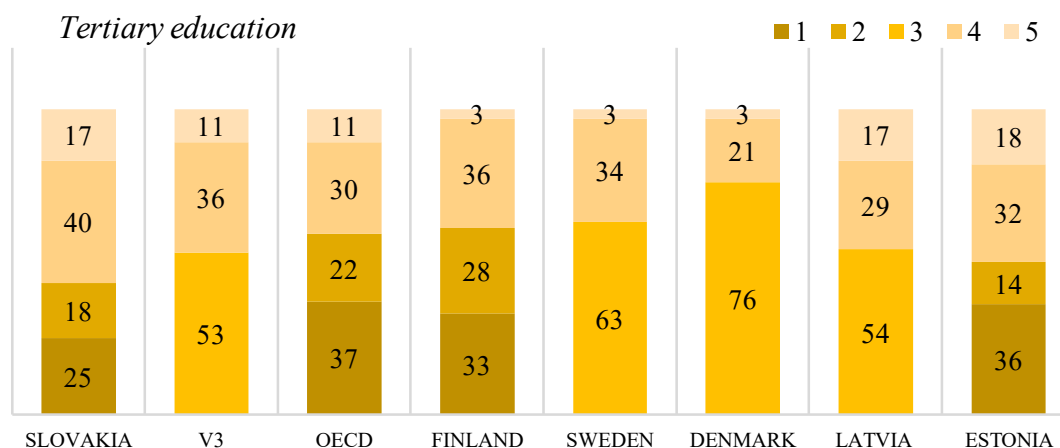
Source: processed by Revision of Education Expenditure (2017) based on the data Ministry of Finance and Ministry of Education of Science and Research, and Sport of the Slovak Republic, Eurostat (2017)

Note: 1 – teachers' wages, 2 – wages of other workers, 3 – total wages, 4 – other current expenses, 5 – capital expenditures

Over the half of public funds for education in the Slovak Republic go to regional education. In 2016, it was about 55% (€ 1.9 billion), of which € 1.5 billion was the state budget and € 400 million have contributed to self-government in terms of original competencies.

Figure 3 shows that primary and secondary education in Slovakia is funded from public funds at 89%, the Czech Republic at 91% and Finland at 99%. Private sources are for only a small percentage. As far as tertiary education is concerned, it is primarily financed from public sources. As regards the distribution of educational expenditure in the Slovak Republic in primary and secondary education, about 63% goes to wages, 33% to current expenditures. Based on the data in Figures 3-5, we can conclude that in OECD countries, on average, 71% of wage expenditures are directed at primary and secondary education, and the rest is directed at current and capital expenditures.

Figure 4 shows the distribution of educational expenditures on tertiary education. In the Slovak Republic, 50% goes to wages, 40% to other current expenses and 15% to capital expenditures. Allocation of expenditure is almost at the same level in selected EU countries and OECD countries.



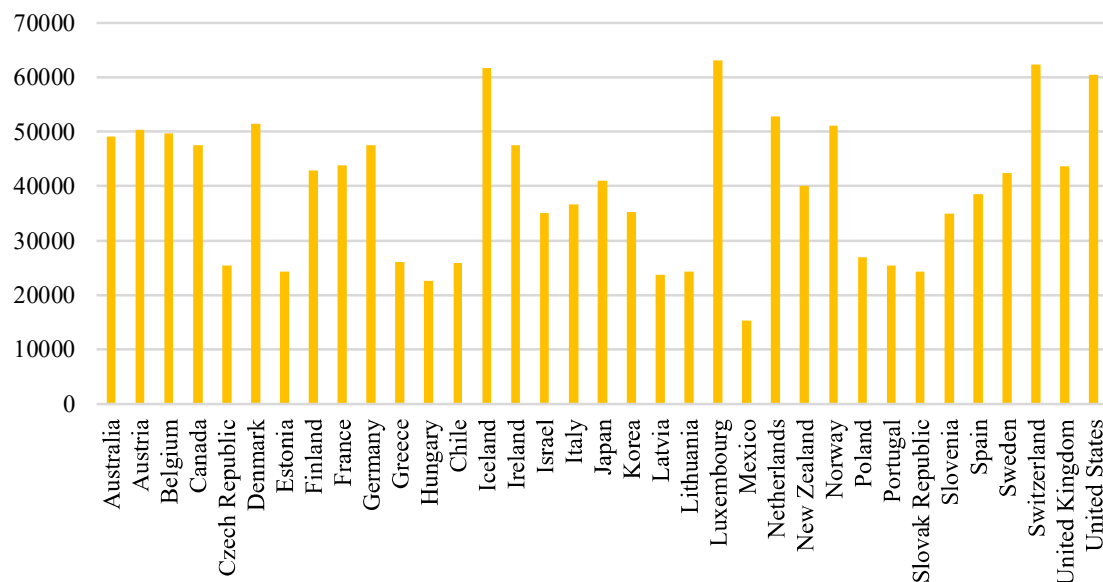
**Figure 4: Distribution of educational expenditure in the Slovak republic (from both public and private sources, 2014)**

Source: processed by Revision of Education Expenditure (2017) based on the data Ministry of Finance and Ministry of Education of Science and Research, and Sport of the Slovak Republic, Eurostat (2017)

Note: 1 – teachers' wages, 2 – wages of other workers, 3 – total wages, 4 – other current expenses, 5 – capital expenditures

As universities are centers of the science and researches, thus, they should be the source of innovations. As in the US and Japan, Slovakia's support for science is very low; science & research spending is only 0.45% of GDP (the lowest level in the EU). The share of science & research spending e.g. in in South Korea is 4.24% of GDP and 2.80% of GDP in the US. As we said, the educational process improves human capital and its quality should also be valued. The main rating is wage. Its height is determined by many factors. The average wage in the Slovak Republic in 2019 is 1143 €, which is a low wage compared to the estimated hourly total labor costs.

Low wages in Slovakia in comparison with the educational level do not confirm the dependence of wage level on the level of education achieved. Many university graduates do not achieve even 80% of the average wage in the national economy.



**Figure 5: Annual average wages (US dollars, 2017)**

*Source: created by author according to OECD data (2017)*

The low level of wages is reflected in the growing indebtedness of households. Compared to the Czech Republic, the Republic of Hungary and the Republic of Poland, the Slovak Republic has the fastest debt and its assets value is decreasing. In 2018, the assets value increased by € 1.6 billion, and debt increased by € 2 billion. According to Allianz Global Wealth Report 2017, Slovak households were the poorest in V4. The average debt size of households in the Slovak Republic was € 6,150, in the Czech Republic € 12,630, in Hungary € 12,220 and € 7,070 in Poland; comparing with € 177,210 in the United States and € 84,080 in the United Kingdom. The rapid debt pace is due to the rapid rise in prices of goods, services and housing, as well as the lack of financial literacy (*Figure 5*).

## CONCLUSIONS

The performance of the economy needs to be boosted by investment in a smart workforce that is able to actively participate in the world progress of science and apply the acquired results to the environment of the home technology and innovation sector. The need to ensure an adequate development of the population's educational and creative potential is very important in small countries. Their domestic market does not allow to obtain sufficient scale revenues, so more than large countries depend on expanding their sales area through the foreign trade. As education needs to be invested, it is necessary to assess workplaces adequately, because low wages are associated with a low rate of return on education and a lower life quality for households.

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