

### BOX 3.

#### THE QUALITY OF HUMAN CAPITAL: ARE LITHUANIA'S HUMAN CAPITAL INDICATORS IN LINE WITH THE ECONOMIC DEVELOPMENT LEVEL?<sup>16</sup>

**The new economic growth theory proposes that the quality of human capital is one of the key economic development factors.** Theoretical models used to assess the impact of human capital on economic growth suggest that their improving quality increases labour productivity and the capacity of the economy to adopt and develop new technologies.<sup>17</sup>

**Empirical economic studies often use the share of the population or labour force with secondary or higher education as an equivalent to the quality of human capital.** This type of indicator is used by Ehrlich (2007)<sup>18</sup> to explain why the US overtook European countries in the 20<sup>th</sup> century in terms of both overall and per-capita GDP. On the basis of this indicator, Žuk and Savelin (2018)<sup>19</sup> claimed that the quality of human capital had an impact on growth rates in Central, Eastern and South-Eastern European economies.

**Another indicator, which is rather frequently used to assess the quality of human capital in a particular country, is the United Nations' Human Development Index (HDI).** It is a geometric average of three sub-indices: life expectancy, educational attainment and the standard of living. Research shows that the connection between the HDI and economic growth is strong and possibly two-way, i.e. improvements in the HDI have a positive effect on growth and, respectively, accelerating economic growth favourably affects the evolution of the HDI. Therefore, economic growth will not become sustainable unless accompanied by improvements in the quality of human capital.<sup>20</sup>

**In 2017, Lithuania's HDI exceeded the indices of one-fourth of EU countries, while its education indicators were the most favourable** (see Chart A). As regards sub-indices, Lithuania's performance is weakest in terms of life expectancy. In 2017, its value in Lithuania stood at 0.843<sup>21</sup>, being almost the lowest indicator among all EU countries. The value of the sub-index of the standard of living is also below the EU average. This sub-index is compiled by measuring gross national income per capita, i.e. an alternative indicator for GDP per capita in assessing a country's standard of living.<sup>22</sup> In the context of HDI sub-indices, Lithuania performs best in the field of education. It ranked 11 among the countries analysed, and the value of this sub-index for 2017 was 0.879 and stood somewhat above the average of the analysed countries. The fact that education indicators in Lithuania are relatively high is also evidenced by the share of the population aged 25-64 with higher education, which accounted for 40.3% in 2017 (see Chart A). The latter indicator ranks among the top third of indicators of EU countries and is notably above the average EU value. It should be noted, however, that both of the above-mentioned indicators cover the quantitative assessment of education rather than its qualitative parameters which, in Lithuania's case, have been increasingly brought into question. For example, according to the Global Competitiveness Report 2018, in terms of skills of secondary and university graduates, Lithuania ranked 107 out of 140 countries assessed.

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<sup>16</sup> For more information on the quality of human capital and its impact on Lithuania's economic development, see the Bank of Lithuania's publication "Convergence factors of Lithuania's economy and the importance of the labour market" to be published at the end of 2019.

<sup>17</sup> Mankiw, N. G, Romer, D., ir Weil, D.N. (1992). Contribution to the Empirics of Economic Growth // The Quarterly Journal of Economics, Vol. 107, No. 2 (May, 1992), pp. 407-437; Romer, P. (1990). Human Capital and Growth: Theory and Evidence // Carnegie Rochester Conference Series on Public Policy 32, p. 251-286; Pistorius, C. (2004). The Competitiveness and Innovation // Elektron, Vol. 21, No. 3.

<sup>18</sup> Ehrlich I. (2007). The Mystery of Human Capital as Engine of Growth, or Why the US Became the Economic Superpower in the 20th Century // NBER Working Paper No. 12868.

<sup>19</sup> Žuk P., Savelin L. 2018: Real Convergence in Central, Eastern and South-Eastern Europe // ECB, Occasional Paper Series No 212.

<sup>20</sup> Ranis, G., Stewart, F., Ramirez, A. 2000: Economic Growth and Human Development // World Development, No 28(2), p. 197-219.

<sup>21</sup> The HDI and sub-indices range between 0 and 1. In 2013-2017, the values of these indicators in EU countries ranged between 0.75 and 0.98.

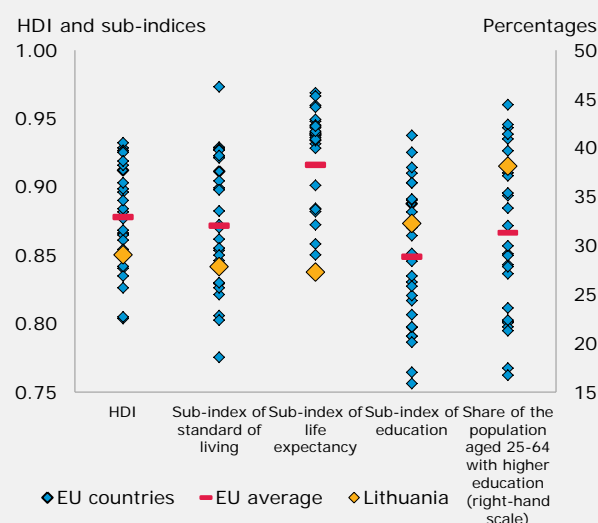
<sup>22</sup> Gross national income is equal to a country's GDP minus income earned by non-residents plus income of the same type earned by the country's residents in other countries.

Lithuania's current HDI is quite close to the values of other countries at the time they reached a similar level of development<sup>23</sup>, although the values of sub-indices vary considerably (see Chart B). The value of Lithuania's HDI sub-index of life expectancy for 2017 was by more than one standard deviation lower than the average values of countries at the time they reached a similar level of development, while the value of its HDI sub-index of education was by more than one standard deviation higher. The share of the population aged 25-64 with higher education also significantly exceeded the average values of other countries at the time they reached a similar level of development.

**The values of Lithuania's indicators defining the quality of human capital vary significantly compared to EU countries.**

Chart A. Comparison of the HDI and the share of the population aged 25-64 with higher education in Lithuania and the EU

Averages of 2013-2017

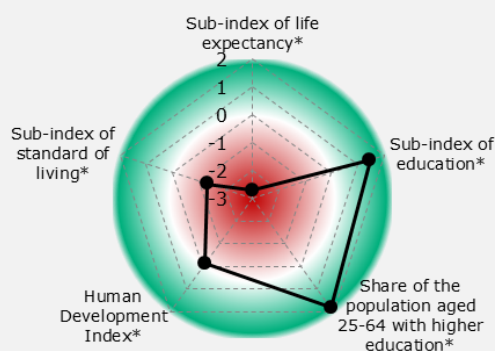


Sources: United Nations, Eurostat and Bank of Lithuania calculations.

**Quality indicators of Lithuania's human capital for 2017 differ from values of other countries at the time they reached a similar level of development.**

Chart B. Conformity of Lithuania's quality indicators on human capital with the values of indicators of other countries at the time they reached a similar level of development

Lithuania's data for 2017



Sources: United Nations, Eurostat and Bank of Lithuania calculations.

\*Standardised deviation from the average value of indicators of other countries at the time they reached a similar level of development.

**The indicators analysed in this box do not allow a straightforward assessment as to whether the quality of human capital in Lithuania is in line with the country's development level.** Compared with the relevant indicators of other countries that have (previously) reached a similar level of development, some Lithuania's indicators are higher (e.g. education indicators), while some of them – lag behind (e.g. the HDI sub-index of life expectancy). All this implies that Lithuania's economic development has not yet been limited by the quality of human capital. However, it should be noted that high quality of human capital is a necessary but insufficient condition for a country to achieve a high standard of living. It is particularly important that the existing human capital and its quality should match the country's labour market needs at that time. The efficient use of the education system, with a focus on improvement of the quality of graduates' skills, as well as active labour market policies could be some of the possible ways to achieve this goal.

<sup>23</sup> A similar level of development is a level that falls within the interval of 23,500 ± 2.5%. Lithuania's GDP per capita in purchasing power parity terms stood at €23,500 in 2017. In 1995-2017, observations of 11 countries fell within this interval, namely: Ireland, Czechia, Estonia, Greece, Spain, the UK, Cyprus, Malta, Portugal, Slovenia and Finland.