

DEMOGRAPHIC DEVELOPMENTS IN THE SR IN CONTEXT OF THE LABOUR MARKET IMPACT

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Abstract

Most developed countries have had to deal with demographic change in recent decades, which has an impact on the functioning of society as a whole. The aim of this paper is to analyze selected demographic indicators such as the structure of the population according to productivity, birth rate, mortality or educational level of the population and to define the impacts of their development on the functioning of society. In order to achieve this goal, we became acquainted with our theoretical publications, while adhering to this theoretical knowledge and then supplementing with statistical data. In the processing of the work were used mainly general scientific methods such as description, induction, deduction, method of analysis or synthesis.

Key words

demographic change, labor market, population aging, Slovak Republic

JEL Classification: : J10, J11, J19

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Introduction

Demographic development in the context of the changes it brings is becoming an increasingly discussed topic, especially in developed countries. One of the most serious problems at present is the aging of the population, which affects not only the Slovak Republic and other European countries, but also other developed countries around the world. In most of them, there is a simultaneous decline in birth rates and a prolongation of life expectancy at birth, which raises concerns about the future. The declining birth rate is caused by the so-called demographic-economic paradox - with the growing GDP of the country, increasing education and independence of women, the gross birth rate in individual countries is also decreasing. This effect is called bottom-up aging. On the other hand, as a result of ever-improving health care, mortality is declining, leading to longer life expectancy and contributing to an aging population. This effect is in turn referred to as population aging from above. Both of these facts lead to an increase in the index of economic burden of persons. A situation arises where more and more people are receiving a pension and fewer and fewer people have to work for these pensions. There is an imbalance that needs to be addressed as soon as

possible, as all the above facts directly affect the Slovak Republic.

Goal and Methodology (Times new roman Body text 10)

The main goal of the paper is to analyze the demographic development in Slovakia and to point out the trends that have manifested themselves in recent years. In order to achieve this goal, it was first necessary to study several theoretical publications dealing with the issue. We subsequently supplemented the theoretical knowledge with statistical data taken from the Statistical Office of the Slovak Republic. General scientific methods such as induction, deduction, analysis, synthesis, abstraction or descriptive method were used in the processing of the paper. The method of comparison was also used to compare the data.

1 Demographic changes in the Slovak Republic

Demographic developments, especially the aging of the population, are significantly affecting the functioning of the labor market. In the long run, Slovakia is expected to have to cope with significant demographic changes. The most important will be the already mentioned

gradual aging of the population, but also the increase in the educational level of the population (Dujava, Pécsyová, 2020). These two factors should have a positive effect on the unemployment rate - a slight decrease in the unemployment rate is expected due to an increase in the share of the retired population, which ranks among the inactive in the labor market. At first glance, however, the positive development will be accompanied by several problems. The largest will be the functioning of the pension system, the next will be the insufficient scope of the labor supply. The age of the average worker is expected to continue to increase. This will in turn increase the amount of experience delivered to the labor markets. This experience is valued by default in the labor market, which is likely to have an impact on wages and potentially on other outcomes (Böhm et al., 2020). The number of economically active population has been declining in recent years, mainly for the following reasons:

- population aging (people are living to an older age and fewer children are being born at the same time. National governments are trying to mitigate the effects of an aging population, in particular by raising the retirement age. However, this approach cannot be applied indefinitely.)
- increasing the number of students at schools (more and more students continue their studies at

university after graduating from high school - retained workforce)

- work abroad (many inhabitants of the Slovak Republic go to work abroad / border areas due to better working conditions or higher earnings, and therefore do not fill vacancies in the Slovak Republic)

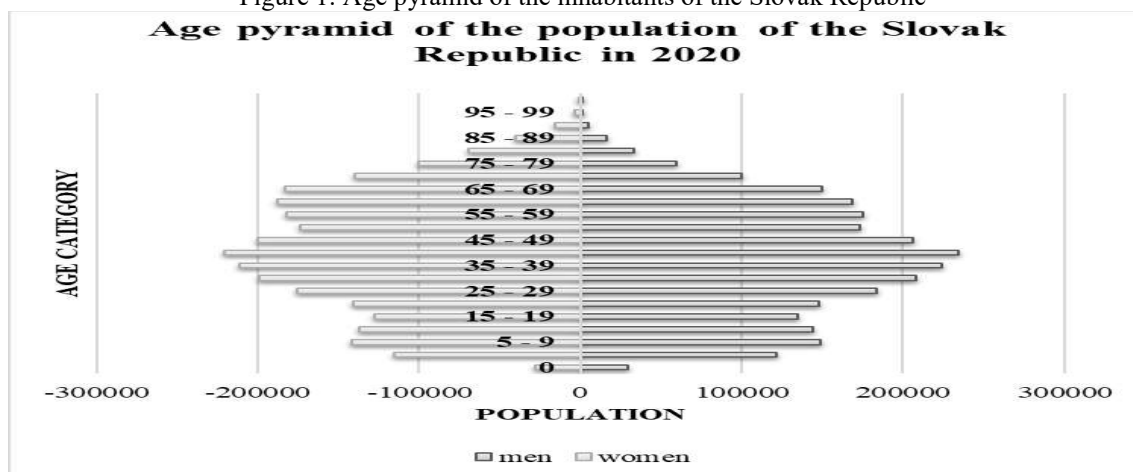
- labor immigration to the Slovak Republic is low, conditions in Slovakia do not attract labor from abroad.

For these reasons, there will be an increasing situation where labor supply will not be able to completely replace those who are retiring.

1.1 Population aging

The aging of the population is manifested by an increase in the older age groups of the population in absolute and relative terms, and it occurs as a result of the improvement of some social conditions (Dimitrová, 2007). The aging of the population will probably be very important in the coming decades not only in the Slovak Republic, but also in other developed countries. Persistently low birth rates and higher life expectancy are changing the shape of the age pyramids of individual countries. This situation will lead to an increased burden on people of working age, who will have to provide funding for the social expenditure needed for a range of services needed to support an aging population.

Figure 1: Age pyramid of the inhabitants of the Slovak Republic



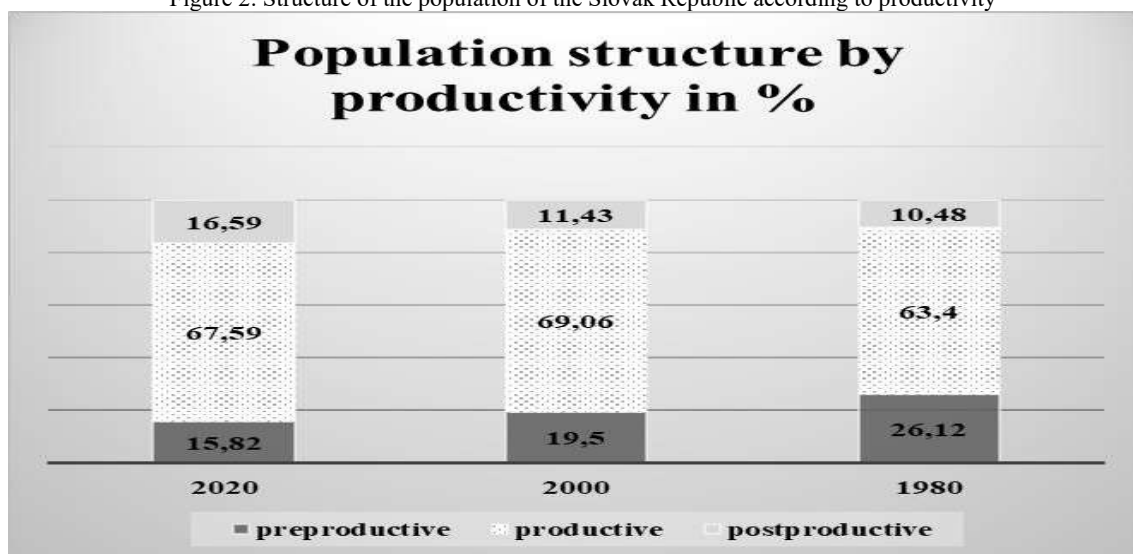
Source: ŠÚSR, own processing

If we look at the age structure of the population of the Slovak Republic, we can see that the population aged 30-44 is the most represented. However, the population approaching retirement age is also increasingly represented. Its size already exceeds the size of the pre-productive age population, and such a development may pose a problem in the future, especially as regards the functioning of the currently set pension system.

On the one hand, however, this situation appears to be positive - as job vacancies will increase due to the decline in labor supply, employers will be forced to compete actively for employees, e.g. also by raising wages. Thus, it will support the acceleration of wage growth, which has been relatively significant in recent times. A partial solution will also be the fact that

employers will increasingly try to use previously less typical labor resources, such as. more students, mothers with younger children, the long-term unemployed, old-age pensioners or foreigners (Karšay, 2018). In addition, the digital transformation of society, together with other processes taking place in the background of Industry 4.0, is expected to lead to the loss of many jobs. As a result, declining labor supply could be sufficient. However, it is not clear when more significant changes will take place, as the possibility of digitization and automation does not mean that it will actually be introduced. This is because there are certain economic, social, legal and other regulatory constraints that cause significant delays between the invention of new technologies and their adoption and dissemination worldwide (Islam, 2018).

Figure 2: Structure of the population of the Slovak Republic according to productivity



Source: ŠÚSR, own processing

If we look at the structure of the population according to productivity also from the point of view of the development in the past, it can be clearly stated that the aging of the population is more and more pronounced and the population in the post-productive age is increasing, while the share of the population in the pre-productive age is decreasing. While in 1980 the post-productive age population was only 10.48% and by 2000 there was only a slight increase, over the next 20 years its share increased to 16.59%. The share of

the pre-productive age population has decreased by 10.3 percentage points since 1980 to 15.82% in 2020. While in 1980 and 2000 the pre-productive share exceeded the post-productive share, in 2020 the pre-productive share was already 0.77 percentage points lower than the share of post-productive.

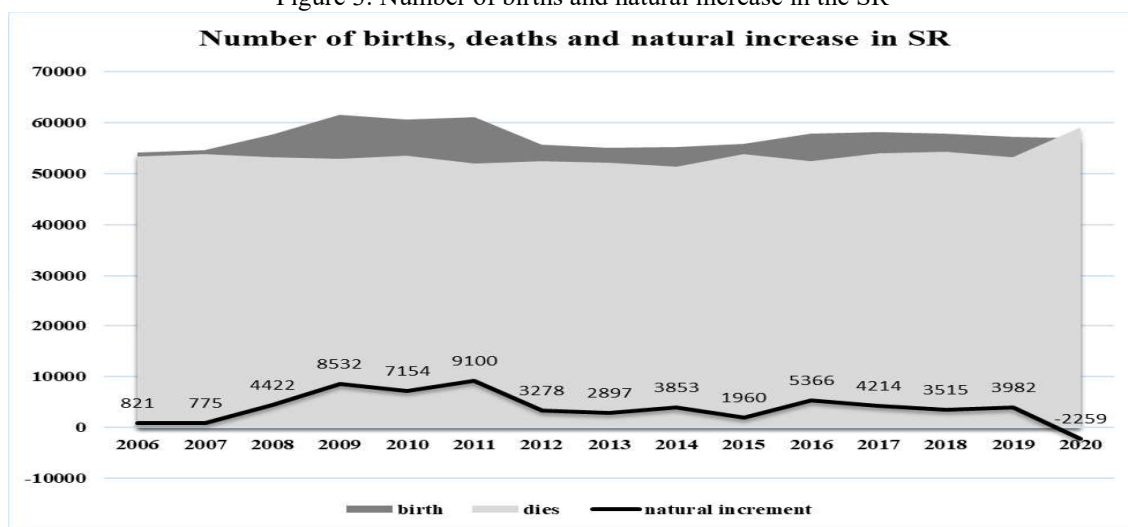
Although it is not yet entirely clear at first sight, a gradual decline in the pre-productive component and an increase in the post-

productive one will lead to a gradual decline in the working-age population, with other potential problems. In addition to dramatically increasing the dependency ratio of older people and growing labor supply more slowly than demand, which may put upward pressure on wages, account must also be taken of the fact that the age structure of the workforce has also changed significantly in recent times, which may also affect the functioning of the labor market (Papadopoulos et al., 2017).

1.2 Development of birth rates and mortality

The age structure of the population depends on the birth rate and mortality rate. The difference between births and deaths represents the natural increase / decrease of the population. The following chart shows the development of these indicators over the last 15 years.

Figure 3: Number of births and natural increase in the SR



Source: ŠÚSR, own processing

The birth rate in the Slovak Republic during the entire period under review, with the exception of 2020, was higher than the mortality rate, ie in all years, except in 2020 affected by the Covid-19 pandemic, we recorded population growth. After the increase in birth rates in the years 2008 to 2011, there was also a more significant increase in natural population growth. Birth rates fell again in 2012, but have started to rise slightly again in recent years. The number of births ranged from 54,000 to 61,000. Mortality remained at approximately the same level throughout the period under review. The number of deaths ranged from 51,000 to 54,000 people. The exception was 2020, which in recent months has been affected by high mortality from Covid-19 infectious respiratory disease and the number of deaths has exceeded 59,000.

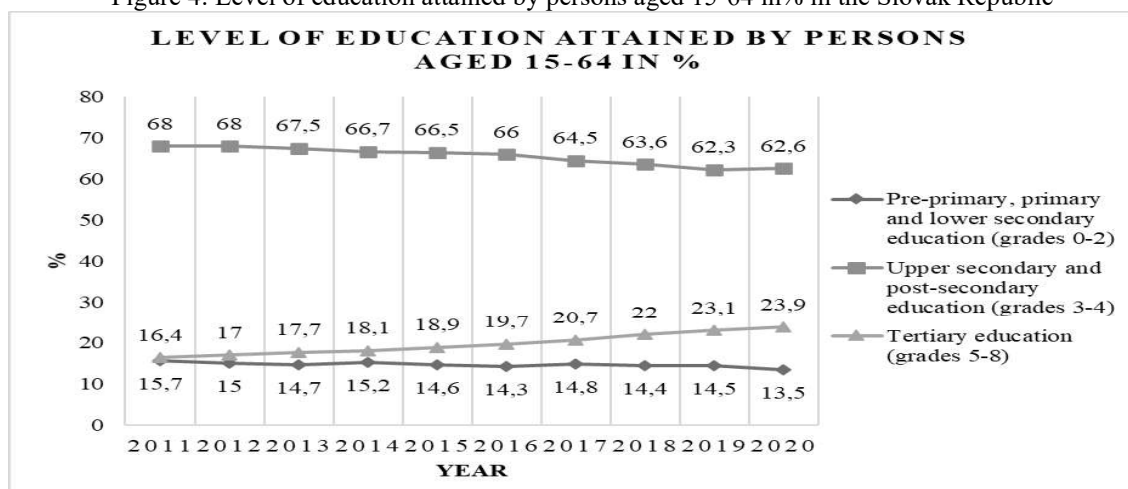
1.3 Increasing the level of education

Another demographic trend worldwide is the increase in the educational level of the population. The need to increase the educational level of the population is contributed to by the current trends in the world economy, which are leading to increasing demands on the workforce in terms of the range of knowledge, skills and abilities. Hübelová (2013) states that the growth of education and increasing the level of human capital is currently one of the key factors for the development of society as a whole, as in post-industrial society the emphasis is on creativity and the ability to adapt to change, and developing these two skills is not possible without sufficient education. The increase in the

educational level of the population also occurs thanks to the so-called the mechanism of cultural transmission, which takes place at school and in the family and still tends to follow each other. This mechanism is based on the fact that the quality of education of one generation affects the

opportunities of the next generation (Storesletten, Zilibotti 2000). Assuming that the older generation was only lower educated, the younger generation would also not be sufficiently educated and the level of education in society would not increase.

Figure 4: Level of education attained by persons aged 15-64 in% in the Slovak Republic



Source: ŠÚSR, own processing

The share of people with tertiary education is increasing and the share of people with upper secondary, but also primary and lower secondary education is decreasing. Since 2011, the share of university graduates in the 15-64 age group has increased by 7.5 percentage points to 23.9% in 2020. On the other hand, the share of people with upper secondary and post-secondary education has fallen from 68% to 62.6% in 2011. % in 2020, ie by 5.4 percentage points. The number of people with pre-primary, primary and lower secondary education also decreased, but only slightly, from 15.7% in 2011 to 13.5% in

2020, a decrease of 2.2 percentage points in this category.

2 Other selected indicators monitored within demographic development

In addition to the indicators monitored above, there are many others that are monitored in the context of demographic developments and have an impact on the labor market situation. The following table lists the most common.

Table 1: Demographic development - selected indicators

Demographic development - selected indicators	2020	2019	2010
Total population	5 457 873	5 450 421	5 424 925
Gross birth rate	10,38	10,46	11,12
Gross mortality rate	10,82	9,76	9,84
Average age - men	39,65	39,45	37,09
Average age - women	42,79	42,59	40,28
Life expectancy at birth - men	73,47	74,31	71,62
Life expectancy at birth - women	80,17	80,84	78,84
Natural increase per 1000 inhabitants - gross rate	-0,45	0,7	1,28
Gross marriage rate	4,35	5,44	4,68
Divorces per 100 marriages - divorce rate index in %	34,92	31,91	47,28

Source: ŠÚSR, own processing

The population of the Slovak Republic increased by 32,948 inhabitants to 5,457,873 from 2010 to 2020. The gross birth rate, which expresses the number of births per 1,000 inhabitants in the observed period (1 year), decreased in the compared years from 11.12 to 10,38. The gross mortality rate, which expresses the number of deaths per 1,000 inhabitants in the observed period (1 year), decreased very insignificantly until 2019 - from 9.84 to 9.76. In 2020, however, it increased to 10.82 due to the pandemic. On the positive side, both the average age of men (from 37.09 years to 39.65 years) and women (from 40.28 to 42.79) increased during the period under review, and the annual increase in this indicator was not affected by Covid-19 either. Also, until 2019, life expectancy at birth (life expectancy at birth) increased, which is defined as the average number of years a person at age x is likely to survive, assuming that mortality rates do not change. It increased from 71.62 years to 74.31 years for men and from 78.84 to 80.84 years for women, so it can be stated that women live to an older age on average. However, excessive mortality in 2020 contributed to a decline in life expectancy at birth for both men (73.47 years) and women (80.17). The gross rate of natural increase, which expresses the natural increase of

the population per 1000 inhabitants of the average state for the observed period in the monitored area, decreased from 1.28 to 2019 from 1.28 to 0.7. In 2020, a natural decrease in population was even recorded in the Slovak Republic (-0.45). The gross marriage rate, which is defined as the number of marriages per 1000 population on average over the period under review, increased from 4.68 marriages per 1000 population in 2010 to 5.44 marriages per 1000 population in 2019. However, in 2020 it fell to 4.35, as many citizens postponed marriages due to restrictions imposed in connection with the pandemic. On the positive side, the divorce rate, which refers to the number of divorces per 100 marriages in the same period, has fallen since 2010 from 48.28% to 31.91% in 2019. In 2020, it rose slightly again - to 34.92%. It can be assumed that social isolation in particular contributed to this, which repeatedly checked the quality of individual marriages. The index of economic burden of persons recording the number of persons in pre-productive age (0-14 years) and post-productive age (65+ years) per 100 persons in productive age (15-64 years) increased from 38.23% to 48%, as for the future, it is necessary to change the current setting of the Slovak pension system.

Conclusion

Demographic development in the Slovak Republic and related trends raise a number of questions about the future functioning of the company. The birth rate has decreased and its timing has changed, which is reflected, for example, in the increase in the average age of the mother at first birth. In addition, many families have so-called childlessness. The values of society have changed, many people prefer to build a career over parenthood. However, not all aspects of demographic change are necessarily negative. Increasing the educational level of the population is currently considered to be one of

the few positives. Although the population seems to be aging from below as a result of increasing education and the growing position of women in society, as women prefer a different way of life, increasing levels of education also have positive effects. It leads to a decline in unemployment in the long term and is also necessary in the light of the rapid pace of technological progress, the expanding digitization and electronics. Individual countries are trying to influence demographic development in various ways and mitigate its negative effects. However, this is not a matter of time and the manifestations of individual measures will usually only become apparent in the medium term.

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