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IMPACT OF MIGRATION AND POPULATION AGING ON ECONOMIC GROWTH IN THE REPUBLIC OF CROATIA

Abstract

Purpose: Migrations are a complex economic variable that is highly influenced by conditions such as social, societal, economic, political, environmental, and the like. The preferences of the population vary and in accordance with their own needs, the population decides to migrate. Many economies of the world are facing the problem of out-migration of the young population. Moreover, the elderly population is increasing as a percentage of the total population. The aim of this research is to show the gender and age structure of the population, the state of migration and the impact on the economic growth in the Republic of Croatia.

Methodology: Data on the population structure and migration in the Republic of Croatia are analyzed for the period 2004-2019.

Results: The research conducted suggests that the population of the Republic of Croatia is facing a large outflow of young people and a decline in the birth rate.

Conclusion: In the Republic of Croatia, the age structure of the population follows global trends, which means that there is a larger proportion of the elderly population. Such changes have serious consequences for sustainable economic growth for any country, including the Republic of Croatia.

Keywords: Migration, population aging, labor market, Republic of Croatia

1. Introduction

The outflow of people from a country means loss of a country's very valuable human capital, especially if they are young, educated people. On the other hand, the aging population is putting tremendous pressure on the country's pension and health care systems. The life expectancy of the population is being extended due to better living conditions, medical care and better accessibility to services that provide more comfortable living conditions for the elderly population. Throughout history, migrations have shaped society and changed its appearance. Population movement is one of the very important economic determinants that determines the future growth and development of any economy. The Republic of Croatia joined the European Union in mid-2013, gaining access to

the European market. However, one of the direct effects of joining the European Community and the related redistribution of domestic factors was significant migration from the Republic of Croatia to the European Union. The main hypothesis that will be researched in this paper is that migration and population aging have a negative impact on economic growth. Furthermore, the consequence of such situation will have negative implications for the labor market, the pension system and the health care system. That is why it is of great importance that the Government adopts economic policies which will encourage demographic renewal. The purpose and aim of this paper are to present and analyze data on migration and population structure and to explain the impact on a country's economic growth. In what follows, current data on migration in the Republic of Croatia and the age of the population are presented, which were obtained from the Central Bureau of Statistics, Eurostat, and World Bank databases.

2. The impact of migration and population aging on economic growth

Economic growth can be defined as an increase in the quality and quantity of goods and services produced and consumed in an economy over time. It is usually measured as a percentage rate of increase in real gross domestic product (GDP) or real GDP per capita. (Roser, 2013). Growth is usually calculated realistically, that is, in line with inflation, to eliminate the distorting effect of inflation on the price of manufactured goods. Economic growth is measured by calculating national income (Bjork, 1999, p. 251). "Economic growth rate" refers to the geometric annual growth rate of GDP between the current year and the previous year over a given period. GDP growth caused only by an increase in available inputs, such as population growth or new land, is called large-scale growth (Bjork, 1999, p. 256). A country's productive capacity and economic characteristics are likely to change as its population ages, because different age groups have different needs. A standard approach to assessing these changes is to assume constants in the behavior of age groups with respect to consumption, savings, and employment. In addition, it is important to assess the impact of these changes in the relative size of different age groups on national income (Akrap, 2013, p. 15). However, this simple approach can lead to flawed assumptions, as changes in norms and expectations alter individual behavior in ways that will affect the economic consequences of an aging population. In particularly, longer life expectancies relative to previous generations may lead individuals to remain in the labor force longer and withdraw their savings at a later age. Moreover, the relationship between population aging and aggregate economic performance is a result of the institutional context. Bussolo et al. (2015) conducted research on population aging and came to the conclusion that the main cause of population aging is a decline in fertility rates. With increasing longevity and an aging population, pension policy schemes, pension, and health care systems, labor market and capital market efficiency, and the structure of regional and global policies are very likely to adapt to new changes. The extent of these changes may in turn depend on the electoral and political behavior of the older electorate, whose needs and interests may differ from those of the younger population (Deren-Antoljak, 2002, p. 222).

Human capital is an important dimension in economic growth. In his research, Kwon (2009) listed some definitions used by different authors to explain what human capital is. It can be summarized that human capital is a combination of knowledge, skills, competencies, behavior, and education of an individual. It is an investment that increases the productivity of people. The impact of human capital can be divided into three areas - individual, organization and society. From the individual's perspective, human capital affects his/her employment opportunities - the better a person's skills and knowledge, the easier he/she is to employ. From the perspective of the organization, human capital has an impact on the organization's competitiveness, its routines, and its culture. The social perspective of human capital synthesizes the individual and organizational perspectives. Human capital increases social awareness. A better educated population is more aware of social problems that affect modern society (Kwon, 2009).

Kwon (2009) also presented three approaches to measuring human capital stock: output-based, cost-based, and income-based. The output-based approach analyzes the relationship between human

capital and economic growth and is expressed in terms of enrollment rates. The cost-based approach measures how much an individual has invested in their education and training. The income-based approach is based on the returns that individuals make to the labor market after their education.

Wen-Hsin et al. (2019) emphasize that empirical findings indicate that human capital is essential for productivity growth and that an aging workforce and population is negatively related to the GDP growth rate.

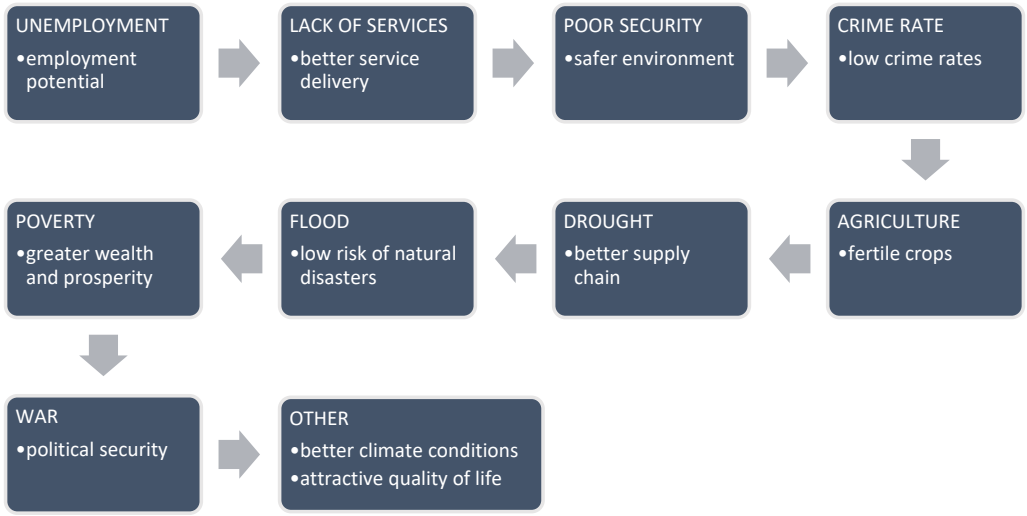
2.1 Basic characteristics and causes of migrations

Migrations can be defined as population movements from one place to another, with the intention of settling permanently or temporarily in a new place or geographical region. Movement is often over long distances and from one country to another, but internal migration is also possible and it is the dominant form of human movement on a global scale (International Organization for Migration, 2020). Populations may migrate as individuals, in family units, or in large groups (International Organization for Migration, 2020). Population movement can be natural, through births and mortality, or mechanical, through emigration and immigration. In modern times, the management of migration is closely linked to state sovereignty. States retain decision-making power over both the entry and residence of non-residents, as migration directly affects some key elements of the state economic policy. Bilateral and multilateral agreements are features of migration management, and there are several global agreements in the form of international treaties in which states have agreed to apply human rights and related responsibilities. Historically, population migration is the movement of a population from one place to another, possibly to another state, with the intention of settling temporarily or permanently in a new place. It usually involves a long-distance move from one country or region to another. Migrations can be voluntary or forced. Voluntary migration refers to a self-initiated move for personal reasons, while forced migration refers to leaving one's former place of residence for political, social, economic, religious and similar reasons. Furthermore, migrations can be internal, external, emigration, immigration, return migration and seasonal migration.

Walmsley et al. (2017) present contemporary theories of international migration which suggest that people usually move because they expect higher wages, employment, better health care, and education. They state that migrations due to a financial crisis are temporary and do not affect the demographic story. Liberalization in migration policies will accelerate migrations and reduce negative effects of population aging. The causes of migration are shown in Figure 1. Internal migration refers to the movement of population within a country, state or continent, while external migration refers to the movement to another country, state or continent. Emigration is a term that means leaving a state and moving to another state. Immigration is moving to a new country. Return migration refers to returning to the country, state, or region which one left earlier. Seasonal migration is the movement of population depending on climate or working conditions in a particular area as well as tourism needs. Accordingly, emigrants are residents who leave one state or country to live in another. Immigrants are people who enter a country from another state or country to live there permanently. Refugees are people who have been forced to leave their permanent residence due to political, economic, and other circumstances (Mikac & Dragović, 2017, p. 147). Population migrations occur continuously and are motivated by various reasons. In poorer parts of the world, populations migrate in search of better living conditions, such as food, water, and other basic needs. In developing countries, populations migrate due to inadequate economic, political, and social conditions. In developed countries, the reasons for migration may be personal preferences of the residents and their individual need to change their place of residence. The economic and political situation in the country can play a very important role in the reasons for population migration. Due to better economic opportunities, many leave their current place of residence but already choose to go to more developed countries that offer better social and societal opportunities.

Research in South Asia showed that countries which receive more migrants are experiencing increased production and greater returns to capital. This leads to increased investments and capital growth over time. Positive migration flows and increased capital will increase real GDP (Walmsley et al., 2017).

Figure 1 Causes of population migration



Source: Jaccob (2013)

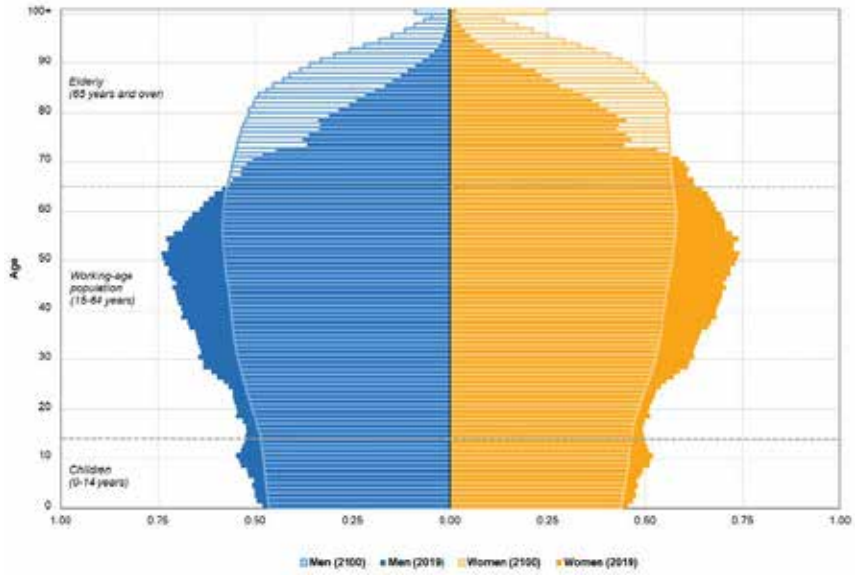
2.2 Population aging as a consequence of demographic transition vs. economic growth

Population aging is the concept of an increasing proportion of the middle-aged population in the total population of a country or area, due to declining birth rates and increasing life expectancy. Most countries have increasing life expectancy and an aging population. According to research conducted by Žokalj (2016) in all EU countries, life expectancy is expected to increase, with the highest growth in the countries with the shortest life expectancy in 2013 (the Baltic countries, Romania, Bulgaria and Hungary). At the EU level, life expectancy of men will increase from 77.6 (2013) to 84 years (2060), and life expectancy of women in 2060 will be 89.1 years (in 2013, it was 83.1).

Thach and Duc (2019) emphasize that in most developing countries, a combination of declining fertility rates and mortality rates and increasing life expectancy led to a rapidly aging population.

These are trends that first appeared in developed countries and are now seen in almost all developing countries. The inevitable consequence of the demographic transition and the move to lower birth and death rates is an evolution in the age structure of the world's population. Many societies, especially in developed countries, have already reached older population age structures than ever before in the past. Many developing countries are experiencing a sudden change in the midst of demographic transition, that is, the transition of a relative number of children, the working population and the elderly. The number of people over 60 years of age was 605 million in 2000 (Mirkin & Weinberger, 2000, p. 41). It is estimated that this number will exceed 2 billion people by 2050, which will be equal to the number of children under the age of 14.

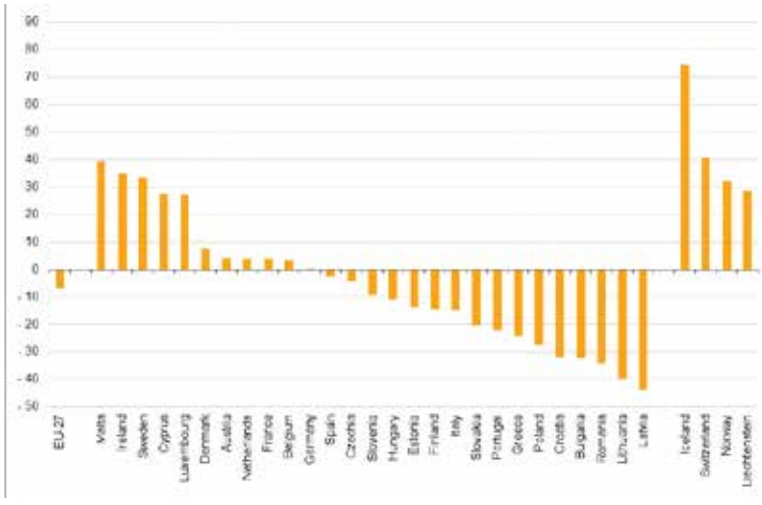
Figure 2 Population pyramid in EU27 in 2019 and 2100 (% of population)



Source: Eurostat (2021). https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Population_projections_in_the_EU

Figure 2 shows the age and gender structure of the population in the European Union for 2019 and the projections for 2100. There is a clear age difference in both population pyramids. It is estimated that the change in the age and gender structure of the population will lead to a decreasing share of children and young people in the total EU population. However, the working age population (15-64 years) is also projected to be significantly smaller. These projections result from assumptions about future fertility, mortality and net immigration.

Figure 3 Projected population change in the period 2019-2100 (in %)



Source: Eurostat (2021). https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Population_projections_in_the_EU

According to Eurostat (2021), all EU Member States will age, but the pace will vary across countries. Malta and Ireland are countries with the biggest growth in population by 2100 with more than 35%. On the other hand, in Latvia, Lithuania, Romania, Bulgaria and Croatia, the number of inhabitants will fall by more than 30% by 2100. Current data show that two thirds of the total population in the European Union is of working age. However, this proportion is decreasing steadily, and it is projected that the working age population will reach 55% in 2100. These projections are based on the current median age and age dependency ratio, which varies from country to country. The demographic dependency ratio is used as an approximate indicator of the relative size of the working age population and the non-working age population. The youth dependency ratio, i.e. the number of children per 100 working-age people aged 15 to 65, and the old-age dependency ratio, i.e. the number of people aged 65 and over per 100 working-age people, indicate the dependency burden on the workers and how this type of dependency shifts from the younger to the older age group during the demographic transition (Mirkin & Weinberger, 2000, p. 47). It is predicted that Germany and Portugal will have the highest young-age dependency ratio by 2100. In contrast, the biggest old-age dependency ratio is predicted for Germany and Luxembourg. It is also interesting to note that the old-age dependency ratio will be above 50% in most EU Member States by 2060, meaning that there will be two people of working age for every person over 65 (Eurostat, 2021). These predictions clearly indicate a negative feeling about the future of the labor market. The United Nations (2019) indicated that the number of persons over 80 nearly tripled between 1990 and 2019. Moreover, the largest increases were recorded in Eastern and South-Eastern Asia, Northern Africa and Western Asia. These regions have the fastest pace of population aging. Life expectancy also increased by additional 19 years.

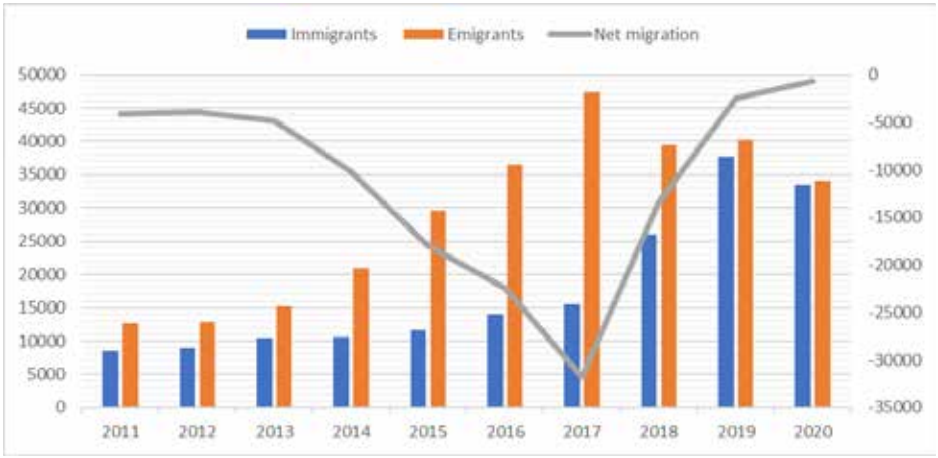
Rapid changes in the age structure of society can make it difficult to adapt to changes that spread over time because the rate of aging has very important implications for government policy, the pension system, health care, and economic growth (Bloom et al., 2011, p. 56). Population aging is not gender neutral according to basic demographics. The trend in the structure of the elderly population changes in terms of gender, that is, it changes the balance of men and women in the total population. The higher mortality of men during their lifetime means that women on average outnumber men in old age, and the difference widens towards older age. Demographic change and population aging is a serious issue for modern society that might have a negative impact on economic growth. The proportion of working-age people in the population is a key indicator of a region's or a country's potential to reap a demographic dividend. A high proportion of working-age people is only beneficial if those people are employed. If they are unemployed, the outcome is likely to be problematic. That is the reason why market policies should encourage employment by improving access to health care and education, so the working-age population is well-prepared for the demands in the labor market. If a government does not provide infrastructure and efficient employment policy, the social and income inequalities will increase (Bloom et al., 2010).

3. Data and methodology

The global financial crisis has hit Croatia hard, and the effects of the deep and prolonged recession have influenced the economy for a long time, despite its accession to the European Union. Judging by the experience of other new EU Member States after the accession, the exodus should not be surprising as it is a direct consequence of joining the free European market, so migration to more developed parts of Europe with higher income is predictable (Murgić, 2009, p. 20). Other EU Member States, such as Bulgaria and Romania, experienced a very similar scenario. The analysis of the data available in the Croatian Bureau of Statistics, Eurostat and World Bank databases will show the effect of migration and population aging and connect the impact on the economic growth of the Republic of Croatia.

Figure 4 shows the movement of the net migration balance of Croatia from 2011 to 2020. As can be seen from the figure, the net migration balance is negative in the observed period, but after the accession of the Republic of Croatia to the European Union a negative net migration balance became even more significant. The lowest point of net migration was recorded in 2017, when most European countries facilitated the employment of workers from the Republic of Croatia.

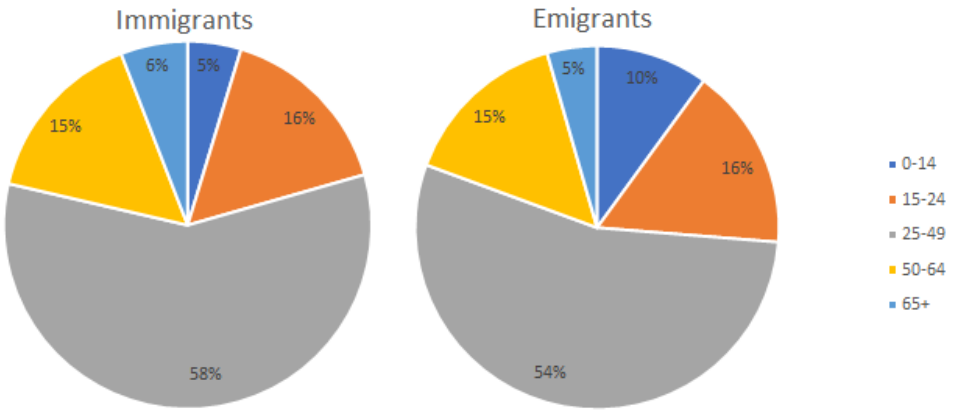
Figure 4 Net migration balance of Croatia from 2011 to 2020



Note: Net migration balance = Number of immigrants – number of emigrants, in thousands.
Source: Authors, based on CBS data (2021)

For years, the largest number of emigrants came from the working population, mostly between the ages of 25 and 50. It is worrying that in recent years whole families have emigrated from Croatia, reducing the number of the working population. Figure 5 gives a detailed overview of the age structure of immigrants into and emigrants from Croatia in 2020. It can be seen that most emigrants and immigrants are between 25 and 50 years old. It indicates that the working-age population migrates most. The data indicate that young citizens with children will emigrate permanently. This out-migration is considered irreversible as it is assumed that the integration of children into the destination country's system will greatly hinder the return of migrants.

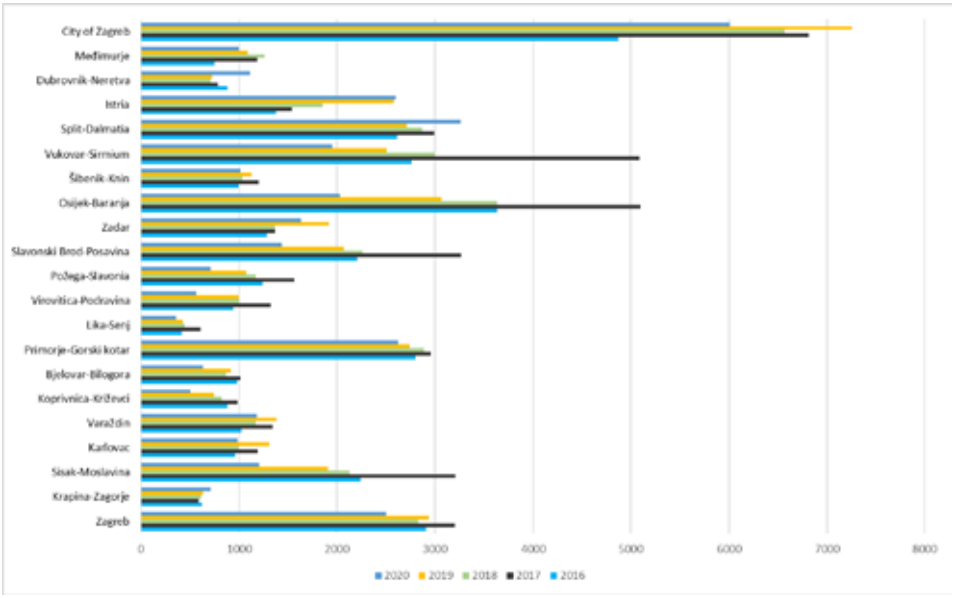
Figure 5 The age structure of immigrants and emigrants from Croatia in 2020



Source: Authors, based on CBS data (2021)

Figure 6 shows the structure of international emigrants from Croatia by counties in the period from 2016 to 2020.

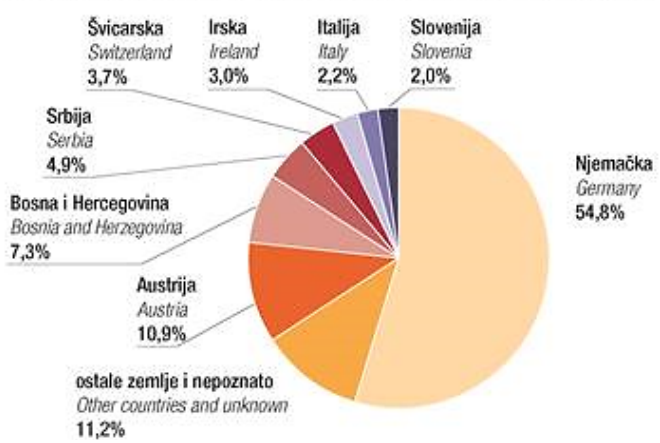
Figure 6 Number of international emigrants from Croatian counties in the period 2016-2020



Source: Authors, based on CBS data (2021)

The highest number of emigrants in all observation periods was recorded in the city of Zagreb. This is related to the number of inhabitants, as the city of Zagreb is the most densely populated part of Croatia. However, in 2017, Osijek-Baranja and Vukovar-Sirmium counties recorded a higher number of international emigrants. This emigration trend is typical of the Eastern Croatian counties, which are less developed and most affected by the migration trend. Emigration flows were much stronger in the regions with the highest unemployment rate, such as Eastern and Central Croatia and Lika and Gorski Kotar. According to the Croatian Bureau of Statistics (2018), more than 85% of immigrants from Croatia went to three Member States after joining the European Union, namely Germany and Austria, as can be seen in Figure 7.

Figure 7 Main European emigration destinations for Croatian residents in 2020

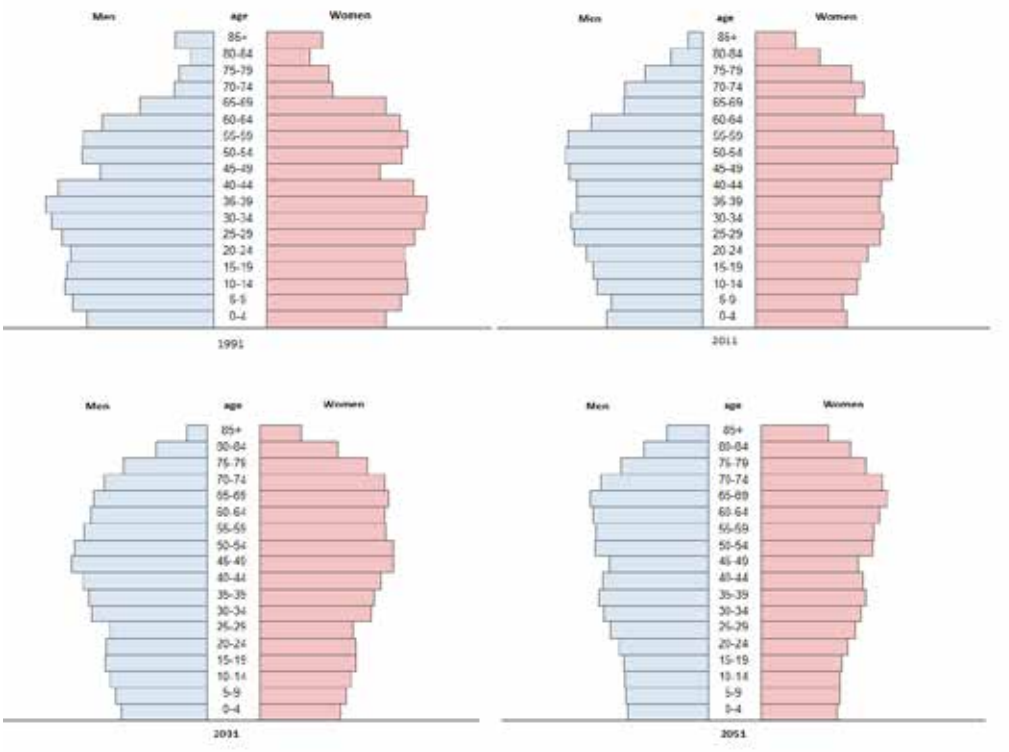


Source: CBS (2021). https://www.dzs.hr/Hrv_Eng/publication/2021/07-01-02_01_2021.htm

Figure 7 shows the main emigration destinations before and after joining the European Union. Although the overall flow of emigrants has increased, the composition of the main destination countries has remained almost unchanged, with the sole exception of Ireland. Considering the decision of Germany and Austria on the transitional regime for Croatian citizens until June 2018, emigration to these two members was even higher. One of the main consequences of emigration is the loss of human capital, i.e., the loss of a highly educated population that chooses to move to another country after leaving school. Accordingly, aggregate demand falls as less money is available in the market. Although total employment declines, there is higher unemployment and lower wages for complementary occupations. There is less competitiveness, but there is also a direct negative impact on market productivity and therefore GDP growth.

Figure 8 shows the age and gender structure of the population of the Republic of Croatia in the period 1991-2051. Large changes in the structure can be observed already in the period 1991-2011. During that period, the proportion of male and female population was equal in all age groups, but in 1991, a larger number of newborns and adolescents was noticeable. After 2011, the gender pyramid changes its shape with age, implying that the population in the Republic of Croatia is getting older and the number of newborns is decreasing. Projections for 2031 and 2051 follow global trends and predict a drastic decrease in the number of newborns and adolescents.

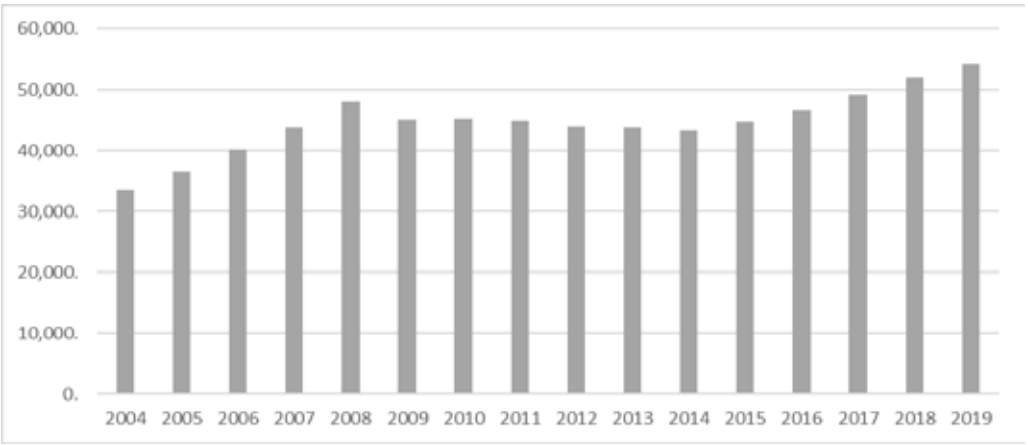
Figure 8 Age and gender structure of the population in Croatia from 1991 to 2051



Source: Croatian Bureau of Statistics (2020). https://www.dzs.hr/app/rss/piramida-stanovnistva.html

It is inevitable that such age and gender structure of the population will have an impact on economic growth in the future, both in the Republic of Croatia and globally.

Figure 9 Gross domestic product in Croatia from 2004 to 2019 (mil. €)



Source: Authors, based on Eurostat data (2020)

Figure 9 shows the movement of the gross domestic product in the period 2004-2019, in current prices. It can be seen that the value of GDP fluctuates in the observed period. GDP grew until 2009, when the Republic of Croatia was hit by the economic crisis. This situation is even better illustrated in Figure 10, which shows the growth rates of GDP in the observed period.

Figure 10 GDP growth rate in Croatia from 2004 to 2019

Source: The World Bank (2020). https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=HR

A drastic decrease in GDP is a result of the economic crisis that affected the whole world and Croatia as well. Due to a poor economic situation, a certain part of the population decided to look for better economic conditions in other European countries (mostly due to the lack of jobs), especially after Croatia joined the European Union, which facilitated the departure of the Croatian population for other countries. Accordingly, the number of emigrants from Croatia is growing, i.e. the value of GDP depends on the movement of the population within the country. From 2015 to 2019, the value of GDP grew, but the number of emigrants also decreased, which in turn indicates that the first wave of emigration has stopped, and the situation is slowly but surely stabilizing.

4. Results and discussion

Population movement has a major impact on the economic situation and health of every country in the world. Migrations represent the movement of population in or out of the country and accordingly affect numerous economic indicators. In addition to population movements, the economy is also affected by population aging. Migrations affect the structure and population of the country as it is mostly the movement of highly educated and younger people in search of better social and economic opportunities. Each state has its own policies, strategies, and measures to keep the population in its country. The consequences of outmigration are usually felt when there is economic instability in the country. All three countries examined in this study faced this situation. Some of the suggestions to encourage the younger population to stay in the country are a minimum wage increase, reduced public benefits (taxes, surcharges, VAT, etc.), support to young parents, subsidized loans for young families and young married couples as first-time homebuyers, extended stay of children in kindergartens and schools, free kindergartens, more flexible working hours, employment after graduation, internships and subsidized employment for young people without work experience, organization of career fairs and employment fairs several times a year, organization of meetings between employers and employees, and the like. What measures and strategies each country will implement mostly depends on the possibilities and the current situation in the country. These are just a few examples that can facilitate and reduce the outflow of population from the country, and practically every country can introduce and adapt measures according to its needs. Related to this is population aging, which can promote rejuvenation by the same or similar measures. In addition to encouraging the population to remain in the country, all of the above measures can also contribute to population rejuvenation. All these measures enable the population of the country to enter into the rejuvenation process. Accordingly, the economic power of the country, i.e., gross domestic product, increases, migration to the country also increases, immigration decreases, and wealth and well-being are created, which enables better economic progress in the future. Migration and population aging have very similar consequences for the economy and the business cycle. Their negative movement correlates negatively with the economic performance of the country's economy, which was evident from the research presented. Actually, this research clearly shows and confirms the research question that population aging and migration have a negative impact on the economic growth and that the consequence of such situation will have huge negative implications for the national economy as a whole if adequate economic policies are not adopted. The Government should adopt economic policies which will encourage demographic renewal and mitigate the effects of an aging population. The country will achieve more progress by adopting measures, policies, strategies and tactics that create positive trends in population movement and the age structure, and accordingly, the desire of the population to create and participate in future progress of the country will be satisfied, without searching for a better life in foreign countries. Some of them may focus on active employment policies to increase labor force participation and employment rates, then legal reforms that will focus on preventing early retirement, or subsidies paid to employers who hire citizens aged 65 and above. All countries in the world, including the European Union, are facing these problems and have developed their own strategies and tactics to address these problems, with varying success in the implementation and the results that these measures achieve in the economy. Immigrants bring new knowledge, ideas and innovations to the country in which they reside, thus representing the positive side of migration, while the outflow of the population from the country represents a loss in the form of human and scientific capital, which is realized in other countries or in Europe. This problem is faced

by almost all more developed countries, although not at the same intensity. Population aging is a problem of modern society, not just of the world economy. It is a problem that affects the whole world, and the question arises as to how this problem can be adequately solved. It is a burden on the whole economy and dealing with this problem is an extremely sensitive issue for any country.

5. Conclusion

There is no doubt that changes in age distribution have complex economic and social implications at the societal and individual levels. For example, an oversupply of workers can turn into an acute shortage of entrants within a few years. Similarly, the retirement of older workers is a source of serious pressure on the state economy through its impact on the pension system. An important question that arises is how to best allocate limited resources within the private and public sectors. It is a problem that plagues almost every economy both in the world and in Europe. Every economy combats these problems in the best possible way and by applying the best possible measures and policies. Therefore, planning must be more sensitive to expected demographic changes. This is particularly important in light of an increasingly competitive and integrated international economic environment and a rethinking of the limits of the welfare state. It is a common rule that countries can adapt more easily to change if change is slower. As the experience of developed countries shows, adapting to challenges such as an aging population is not easy, even though the aging process has been underway for decades. Given the major changes in the age structure that have taken place in developing countries in a short period of time, these countries have less time to adapt to the changes and problems arising from the change in the age structure compared to developed countries. This actually raises the question of what an adequate way is to adapt to these changes in the aging population without causing harmful consequences for every participant in the economic system. At the individual level, there is a need to ensure that older people maintain their dignity, self-confidence, and mental and physical health to enable their continued participation in society and to recognize their valuable contribution to family and community. A challenge for every country is to create conditions that promote the quality of life and increase the ability of older people to work and live independently of others as long as possible. Croatia is a country facing the problems of migration and population aging. Every country has different strategies and views on these issues, but it is inevitable that these changes will take place faster than before. The elderly population can certainly contribute to the community in which they work by doing simpler and less physically demanding work, which is helpful in carrying out other activities in the public or private sector. This relieves some of the workable contingent, which then has the opportunity to focus on a more important part of their business obligations. Migration causes the outflow of human capital to other countries where better economic, social, political, societal and health conditions prevail. The pressure of an aging population on the pension and health care system further slows down economic growth, which largely depends on the working-age population, which is declining due to stagnation or falling birth rates. Croatia will have to take the issue of sustainability of the pension and health care system more seriously. Finally, there is a legitimate question of how migration and population aging can be exploited for the benefit of economic growth, which can be a research question for new scientific findings.

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