

## Fertility Trends and Population Policy in the Canton of Sarajevo

### *Termékenységi tendenciák és népesedéspolitikai Sarajevó kantonban*

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**KEYWORDS:** demography; Bosnia and Herzegovina; Sarajevo; population policy; total fertility rate

**ABSTRACT:** The demography of Bosnia and Herzegovina fits into the Southeast-European trends with sub-replacement fertility and high emigration rates. At the national level, natural decline started in 2007, while migration is influenced by the war and its aftermath, as well as several economic and political push factors (low wages, corruption, high unemployment, etc.), and also has a serious impact on birth and death rates. On the other hand, demographic trends in the Canton of Sarajevo differ from the national pattern. It reached sub-replacement fertility more than a decade later (2019), and migration still has a positive balance: besides significant emigration rates, immigration to the Canton, especially from the other parts of Bosnia and Herzegovina, is higher. Since migration involves younger generations, it is also a factor behind the more favourable fertility rates, and can be evaluated as a consequence of better socio-economic development in the capital and its gravitational area.

In the Canton, there have been several factors that contributed to the decline of birth rates in the past decades. Changing functions of family and children in the society, increasing women's employment, educational level and career aspirations, growing individualism and rationality, the changing social climate in relation to children, higher personal standards, and other socio-psychological factors should be mentioned. Birth rates were also (positively) influenced by other factors. One of the most important points is that the Canton has certainly one of the best support policies in Bosnia and Herzegovina including financial support and allowances for newborn children, subsidies in preschool education, primary and secondary schools as well as scholarships for pupils and students. Positive economic trends such as new constructions of residential buildings, business, and shopping centres, as well as an even stronger concentration of attractive institutions and activities should be emphasised.

In 2021, the total fertility rate accounted for 1.38 in the Canton, while it has shown a great variation among the municipalities. The municipality with the lowest total



fertility rate (Novi Grad) had the highest total number of live births in the Canton, while the municipality with the lowest total number of live births (Trnovo) was the only one with total fertility rate values above the replacement level. Due to its demographic, economic and political significance, the Canton of Sarajevo is a key area for population revitalisation in Bosnia and Herzegovina. Therefore, local measures have national significance, and can act as a model for the rest of the country in terms of population policy as well.

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**KULCSSZAVAK:** demográfia; Bosznia-Hercegovina; Szarajevó; népesedéspolitiká; teljes termékenységi arányszám

**ABSZTRAKT:** Az elmúlt évtizedekben a népességdinamika, illetve a termékenység és a természetes népmozgalom összekapcsolódó fogalmai a világ számos népességföldrajzosának figyelmét felkeltették, de nem Bosznia-Hercegovinában. Erre a hiányosságra is reflektálva, jelen tanulmány Szarajevó kanton példáján keresztül részletesen elemzi a termékenységi tendenciákat a 2001–2021 közötti időszakban.

Bosznia-Hercegovina természetes reprodukció szintjét el nem érő termékenysége és magas kivándorlási rátája illeszkedik a délkelet-európai demográfiai trendekbe. Míg a természetes fogyás országos szinten 2007-ben kezdődött, Szarajevó kanton csak több mint egy évtizeddel később (2019) került ebbe a helyzetbe, a migráció pedig – szemben az országos tendenciákkal – még mindig pozitív egyenleget mutat. Mivel a migráció a fiatalabb generációkat érinti, egyrészt okozója is a kedvezőbb termékenységi arányszámoknak, másrészt következménye a főváros és vonzáskörzete környezetéből kiemelkedő társadalmi-gazdasági fejlődésének.

Az elmúlt években a születési arányszám negatív, de országos átlagnál kedvezőbb értékeit számos tényező befolyásolta. Az egyik legfontosabb pozitív tényező a kanton családtámogatási politikája, ami magába foglalja az újszülöttek anyagi támogatását, az óvodai nevelés, az általános iskolák és középiskolák támogatását, valamint a tanulók és diákok ösztöndíját. Kiemelendők továbbá a pozitív gazdasági tendenciák, különösen az országos átlaghoz képest jelentős építkezések.

## Introduction

Population is the most important resource of a state. By default, larger population means stronger state. For this reason, the evolution of the population driven by two main factors (natural change – births vs. deaths – and migration) is an important issue for every state. Europe has been experiencing sub-replacement fertility (with significant regional differences) for decades, but migration has compensated for this.

Today, Central and South-Eastern Europe have the most unfavourable fertility rates in Europe, with death rates significantly higher than birth rates in all but a few countries (Szymańska 2022). However, while in Western Europe the natural decline is compensated by immigration, Central Europe is characterised by a significant emigration of its labour force, which has only been counterbalanced by similarly motivated immigration in the last decade, partly from South-Eastern Europe. In contrast, the demographic situation in South-Eastern Europe is even less favourable, due to a combination of sub-replacement fertility and high emigration rates. In recent years, the region has experienced a significant decline in population and the outlook is not favourable. Governments are trying to deal with the situation in various legal and financial ways, with little success so far (Judah 2019).

In many areas of Bosnia and Herzegovina, including the Canton of Sarajevo (hereinafter: Canton), the problem of simple population reproduction is a key issue today. Decreasing birth rates and natural change have their short-term and long-term effects. The weak natural dynamics does not only affect the current total movement of the population, but it results in very unfavourable structural-dynamic consequences in 20 to 25 years, when the cohorts born now enter the fertile period of their lives. In this paper, we analyse the recent demographic trends of the Canton of Sarajevo, we discuss their causes, and introduce the local population policy.

### **Basic demographic concepts, data and methodology**

Nativity is the number of live births in relation to the total population, while fertility is the number of live births in relation to the female population of fertile age (i.e., aged 15 to 49). When talking about the birth rate, it is usually understood as the number of live births per thousand inhabitants (Wertheimer-Baletić 1999).

Level of education and family income, variables determining the social position of the individual and the family, greatly influence the birth rate. Specifically, higher educated women get married later, have higher aspirations in their careers, and have higher wishes in terms of the quality of the upbringing and the schooling of their children. A research in the USA has shown that higher educated couples are more “efficient” in family planning (Rindfuss, Sweet 1977).

In demographic statistics, total fertility rate (TFR) is the best indicator of fertility. It shows the likely average number of live births that an “average” woman would have during her fertile period, assuming current age-specific fertility rates and excluding the effects of mortality. TFR is a good approximation of the average number of children in a family (Nejašmić 2005).

Contemporary demographic situation and fertility in the Canton of Sarajevo has some similar characteristics to those stated in the theory of the second

demographic transition (Lesthaeghe, Neels 2002; Lesthaeghe, Surkyn 2007; Van de Kaa 1994, 2001; Van Bavel 2010). The birth rate falls below the replacement level and refers to changes in family and fertility patterns associated with structural and cultural changes marked by modernisation, expansion of higher education, rise of secularisation and individualistic values, and the importance of self-fulfilment.

Population policies are usually understood as strategies of governments or NGOs to achieve specific demographic goals. There is a most often accepted division of population policies into four types: 1. stimulating or expansive (with pro-natal and immigration variants), which encourages population growth; 2. restrictive (with anti-natality and emigration variants), whose goal is to stop or slow down further population growth; 3. redistributive (or migratory), which promotes a more favourable spatial (re)distribution of the population and settlements; and 4. eugenic (qualitative), which tends to the general improvement of the natural (biological) characteristics of the population. Achieving the goals of certain types of population policies can be short-term (tactics) or medium- and long-term (strategy). From a spatial point of view, population policy can be general, regional or special, e.g., urban-rural (Friganović 1990).

In terms of policies aimed at influencing fertility levels, there are two main approaches. One is the provision of birth control knowledge and services and related improvements through large government-sponsored family planning programs. The second is the change of social and economic environment so that people are motivated to have fewer or more children. Examples of these non-programmatic efforts include modernisation, payments for having or not having children, increased employment opportunities for women, education of the population, and maternity and paternity leaves. The two approaches often are seen as complementary.

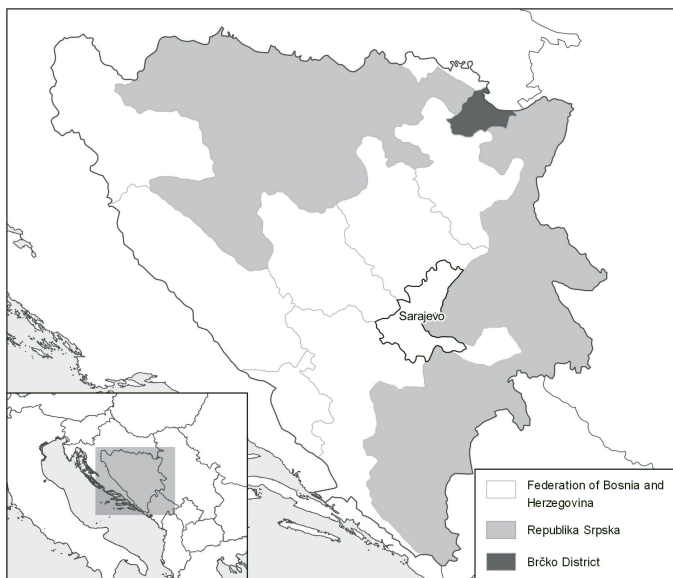
Our main data source is the Federal Statistical Institute, which provides official data of population censuses, population estimates, and vital statistics in Bosnia and Herzegovina. Beyond the administrative level of the Canton, as spatial units, municipalities were also included in the research. We focus on the period between 2001 and 2021. However, the year 2013, as the last census year, as well as the year of the Covid-19 pandemic (where needed) were taken into special consideration. In order to define a broader context and reveal the long-term trends in population development, the research has an extended scope of time, also including the second half of the 20th century.

## Study area

With an area of 1,277 km<sup>2</sup>, the Canton of Sarajevo is the third-smallest canton within the Federation of Bosnia-Herzegovina. It represents 4.9% of the national area and 2.5% of the population. The capital and largest city in terms of population and economy, is located on the territory of the Canton. The urban settlement of Sarajevo had 271,194 inhabitants in 2013 (Gekić et al. 2022b). The average population density of the Canton is 324 inhabitants/km<sup>2</sup> which is 4.7 times higher than the national average. The gravity area of Sarajevo exceeds the administrative borders of the Canton and includes significant parts of the neighboring units as well. This is reflected in the large volume of daily migrations, while at the same time, it represents a force of attraction contributing to the permanent immigration.

Sarajevo has been the main administrative, economic, and cultural centre of Bosnia and Herzegovina since the 19th century (Hajdú, Rácz 2011), which helped its further demographic development, primarily through intensive immigration. This process reached its peak in the second half of the 20th century, but the war in Bosnia and Herzegovina between 1992 and 1995 resulted in several negative factors that contributed to the general decrease of the population. In addition, the new administrative arrangement, which established the Canton, reduced the territory of the Sarajevo region (Figure 1), thus limiting the possibilities

Figure 1.: The Canton of Sarajevo  
*Szarajevó kanton*



Source: compilation of Tamás Szabó

oplanning demographic and general social development. The Canton consists of 9 municipalities: Centar Sarajevo, Novo Sarajevo, Novi Grad Sarajevo and Stari Grad Sarajevo (together they form the City of Sarajevo), then Ilidža, Ilijaš, Hadžići, Trnovo and Vogošća (see below Figure 2).

In 2019, the GDP of the Canton accounted for 3,817 million EUR, which was one fifth of the GDP of Bosnia and Herzegovina, and one third of the GDP of the Federation of Bosnia-Herzegovina. The local GDP per capita (9,090 EUR) was than the average of the European Union by about 45%. At the end of 2021, there were 152,576 persons employed in the Canton. The registered employment rate of the total population accounted for 36.3%. At the end of 2021, 57,965 unemployed persons were registered. The unemployment rate of the active population was 27.5% (Strategija razvoja Kantona Sarajevo 2022).

The only reliable information about the ethnic and religious structure of the Canton comes from the 2013 Census. The ethnic structure was as follows: Bosniaks 83.8%, Croats 4.2%, Serbs 3.2%, Bosnians 3.1%, Bosnians and Herzegovinians 1.4%, all others 2.4%, and 1.7% of the population did not declare, while the ethnic structure was unknown for 0.2%. In all municipalities, Bosniaks have an absolute majority by share, and in no municipality does the second most numerous ethnic group exceed 8%. In terms of the share of the second largest ethnic group, municipalities of Novo Sarajevo (7.2% of the population are Croats) and Centar (6% of the population are Croats) stood out.

Regarding religions, 84.8% of the total population declared themselves to be members of the Islamic, 4% Catholic, 3.3% Orthodox, and 1.1% Muslim religions. Agnostics made up 1.2%, and atheists represented 2.5% of the total population. Other religions had a share of 0.5%. 2.4% of the population did not declare its religion, while the religion was unknown for 0.2%. In terms of the share of the second largest religious community, municipalities of Novo Sarajevo (6.5% of the population are Catholics) and Centar (5.7% of the population are atheists) stood out (calculation based on BHAS 2016).

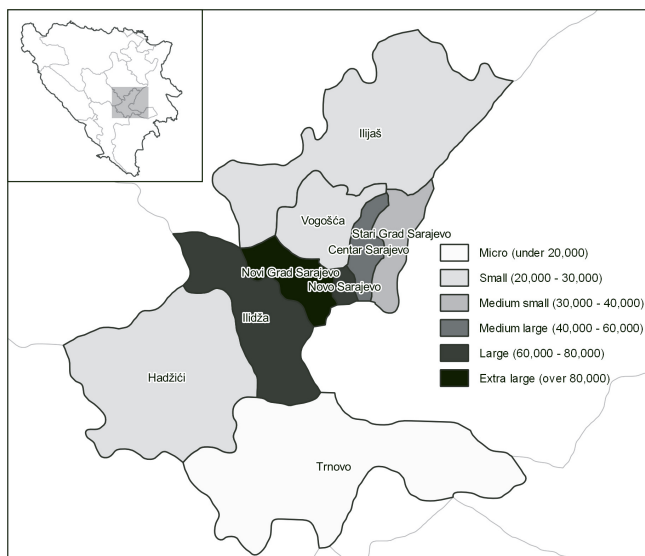
### **Population dynamics**

At the latest census (2013), Bosnia and Herzegovina had a population of 3,531,159. However, according to the estimations, there were 3,403,754 inhabitants in the country at the end of 2021, showing a decrease of 3.6% (BHAS 2016; FZS 2021; ISR 2021). Bosnia and Herzegovina is not an exception in terms of depopulation processes (Kadušić, Smajić, Smajić 2023) mostly caused by emigration, decreasing birth rates, increasing death rates, and population aging. There is no institutionalised population policy to mitigate the negative trends (Kadušić, Suljić 2018). According to Halilovich (2012), Bosnians nowadays represent one of the most widespread emigrant communities from the Balkans.

Between 1992 and 1995, about 1.2 million people were forced to leave the country (Valenta, Ramet 2011).

In the era of continuous population growth since the 1950s, the period between 1992 and 1995 is one of the two exceptions. The war in Bosnia and Herzegovina caused an increased mortality, a drop in birth rates, migrations, and significantly disrupted population development, so a demographic regression was recorded from 1991 to 2013. In the case of the Canton of Sarajevo it had an average of -0.8% per year and -16.1% in total. In contrast to the Canton, the decrease in the number of inhabitants of Bosnia and Herzegovina amounted to 19.3%, and total population decline within the contemporary borders of the Federation of Bosnia-Herzegovina was 18.3%. In 2013, the population of the Canton accounted for 11.7% of the total population of Bosnia and Herzegovina and 18.6% of the total population of the Federation of Bosnia-Herzegovina. Another exception is the period of the Covid-19 pandemic (2020–2022). Compared to the total population dynamics of FBiH, showing a decline from 2013 to 2019 as well, the Canton recorded a constant increase in the number of inhabitants. Its population accounted for 18.6% of the total population of FBiH in 2013, increasing to 19.2% in 2019. The Covid-19 pandemic in the period of 2020–2021 led to a decrease in the number of inhabitants both in FBiH and in the Canton. The decrease is more pronounced (1.3%) in the population of FBiH compared to 0.5% in the Canton (mid-2022 compared to mid-2020).

Figure 2.: The types of municipalities by population size in the Canton of Sarajevo (2013)  
A települések népességszám szerinti típusai Szarajevó kantonban (2013)



Source: compilation of Tamás Szabó

Novi Grad had the largest share (28.7%, or 118,553 persons) in the total population in 2013, followed by the municipalities of Ilidža (16%, 66,730), Novo Sarajevo (15.7%, 64,814), Centar (13.4%, 55,181), and Stari Grad (9%, 36,976). Vogošća (6.3%, 26,343), Hadžići (5.8%, 23,891), Ilijaš (4.7%, 19,603), and Trnovo (0.4%, 1,502) had smaller shares. The municipalities representing the parts of City of Sarajevo account for almost 67% of the total population in the Canton (Figure 2).

The Canton has 413,593 inhabitants, which makes it the second most populous canton in FBiH behind the Canton of Tuzla. However, as a result of its highly diversified natural factors (e.g., relief and climate), as well as certain historical, economic, and social processes, spatial distribution of the population is extremely uneven. At the level of the municipalities, large disparities can be observed between the units building up the City of Sarajevo with the highest densities in Bosnia and Herzegovina, and Trnovo, which is among the municipalities with the least population in the entire country. The municipality of Novo Sarajevo is the most densely populated municipality in the Canton, with approximately 6,500 inhabitants/km<sup>2</sup>. In addition to Novo Sarajevo, municipalities of Novi Grad and Centar stand out with more than 1,000 inhabitants/km<sup>2</sup>. Stari Grad (over 700 inhabitants/km<sup>2</sup>), Ilidža (over 400 inhabitants/km<sup>2</sup>) and Vogošća (over 300 inhabitants/km<sup>2</sup>) can also be considered densely populated. On the other hand, municipalities of Hadžići (88 inhabitants/km<sup>2</sup>) and Ilijaš (63 inhabitants/km<sup>2</sup>) are medium-populated and generally fit into the national average. The municipality of Trnovo in the mountainous south of the Canton, with only 4 inhabitants/km<sup>2</sup>, has one of the lowest population densities in the country, and represents a distinct contrast to the rest of the Canton (FIS 2013).

Analysis of data from 2022 shows that municipalities of Stari Grad Sarajevo (-2,976 or -8%), Centar Sarajevo (-2,789 or -5%), and Novo Sarajevo (-2,045 or -3.1%) have a lower number of inhabitants compared to 2013. Municipalities recorded an increase in the number of the inhabitants are Ilidža (5,010 or 7.6%), Novi Grad Sarajevo (4,159 or 3.5%), Vogošća (3,011 or 11.5%), Ilijaš (1,275 or 6.5%), Hadžići (735 or 3.1%), and Trnovo (129 or 8.1%). However, a comparison of these data with the year 2020, when Covid-19 pandemic began, reveals a different picture. Direct consequence of the Covid-19 pandemic is a population decrease in five municipalities of the Canton: Stari Grad (-908 or -2.6%), Novo Sarajevo (-1,058 or -1.7%), Centar (-863 or -1.6%), Hadžići (-118 or -0.5%), and Novi Grad (-137 or -0.1%). In 2022, about 420,000 inhabitants lived in the Canton (FIS 2022).

### **Natural movement of the population**

At the end of the 2000s, Bosnia and Herzegovina entered a period of natural depopulation that lasted continuously for a decade, with no indications that it



could be slowed down. Thus, between 2001 and 2021, the number of live births decreased from 37,717 to 27,143 or by as much as 28%. This is a critical turning point for the population (Gekić et al. 2022a). At the same time, the number of deaths increased from 30,325 to 50,333 (by 66%). However, due to the Covid-19 pandemic the number of deaths in 2021 was 29.6% higher than in 2019, so if we compare 2001 with 2019, the number of deaths was “only” 28% higher.

The total fertility rate in Bosnia and Herzegovina accounted for 1.19 birth per woman in 2021, which is one of the lowest in the world, and decreased from 1.28 in 2013. Between 2001 and 2021 TFR decreased by 21%. In 2021, the birth rate was 8‰ (0.8‰ lower than in 2013), the mortality rate was 14.9‰ (4.9‰ higher than in 2013).

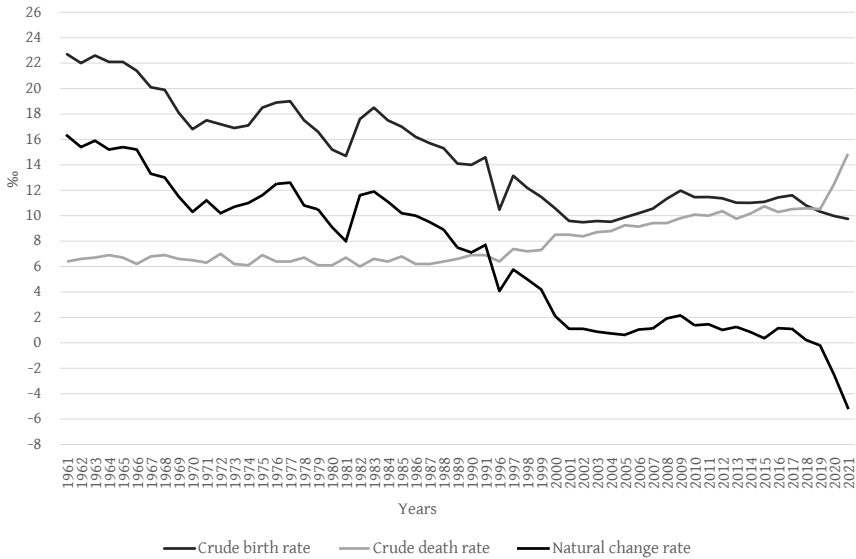
The pace of natural population growth has been decreasing since the mid-1950s, moving from high rates (above 25‰) to moderate ones. In the mid-1980s, the natural growth rate dropped to below 10‰ as a result of a large decline in birth rates. After 1995, it continued to decrease from 5.9‰ in 1996 to the first negative rate of -0.3‰ representing natural population decline in 2007. In 2021, it reached new lows at -6.9‰.

In the early 1960s, the population of the Canton was already at the end of the middle stage of the demographic transition. The decrease in mortality rate led to a decrease in birth rate but natural increase remained significant. In 1968, the birth rate fell below 20‰ marking the start of the last stage of transition. This resulted in relatively low rates of natural growth (below 13‰). Until 1988, the birth rate was above 15‰ and could be characterised as moderate (Figure 3). After 1998, the birth rate only reached 12‰ in 2009. In the entire period from 1996 to 2021, the birth rate was low (in the last 4 years below 11‰). The lowest birth rates were recorded between 2001 and 2004, when they averaged around 3,860 or below 10‰ per year.

In contrast to the birth rate, the mortality rate was between 6 and 7‰ until 1992, after which it increased significantly and has been mostly above 10‰ for the last 12 years. Until 1984, less than 3,000 inhabitants died annually, while from 1988 to 1991 between 3,000 and 3,400. After 2001, when the annual natural increase fell below 500, until 2022, the total natural increase accounted for 4,695 (in the two years of the Covid-19 pandemic 11,495 people died). Since 2019, when natural movement of the population became negative, 3,282 inhabitants have been lost (FIS 2021).

In addition to mortality, emigration of residents during and after the war contributed to the demographic slowdown of the Canton. According to the indicators from 1996 and 1997, demographic transition already has ended, and the post-transition stage has begun. The birth rate was lower than 14‰. Slow demographic dynamics were quickly reflected in the age structure of the population, one of the fundamental determinants of natural dynamics. By the decreasing number and share of young people, the fertile contingent of the population has narrowed.

Figure 3.: Components and rate of natural change in the Canton of Sarajevo (1961–2021)  
 A termézetes népességváltozás összetevői és üteme Szarajevó kantonban (1961–2021)



Source: authors' compilation

In the period between 1991 and 2013, the share of the fertile contingent of the female population (15–49 years of age) in the total female population decreased from 52.9% to 47.7%. At the same time, there was a greater increase in women in the post-fertile period (50 years of age and older), from 24.1% to as much as 38.2% and a decrease in the share of women in the pre-fertile period (0–14 years of age), from 21% to only 14.1%. Consequently, the absolute number of women in the fertile period of life declined drastically, by around 22%.

### Recent demographic trends

Based on the latest data from 2021, the birth rate was 9.8% in the Canton of Sarajevo. The rate of natural change, primarily due to the consequences of the Covid-19 pandemic, is in a big decline, and in 2021 it was -5.1% (there were 2,148 more deaths than births). The FBiH has lower rates of birth, mortality, and natural changes than the Canton, thanks primarily to the effects of the economic development and pro-natal policy measures of the latter.

Between 2001 and 2021, 92,040 children were born alive in the Canton of Sarajevo. In the period of 2005–2009, the number of live births increased from slightly more than 4,000 to almost 5,000, and then began to decline with minor fluctuations until 2015, when a three-year period of increase in the number of

live births followed, culminating in 2017 (4,856). This increase in the birth rate is also the result of the entry of women born between 1996 and 1998 (there was an increased number of births after the war) in the age group of the female fertile contingent of 20 and over. After 2017, the number of live births decreased: it was 15.7% lower in 2021 than in 2017. The birth rate in the first five years of the post-millennial period ranged between 9.5‰ and 9.6‰; it grew up to 12‰ in 2009, and then decreased again with slight fluctuations until 2017, when it decreased more rapidly.

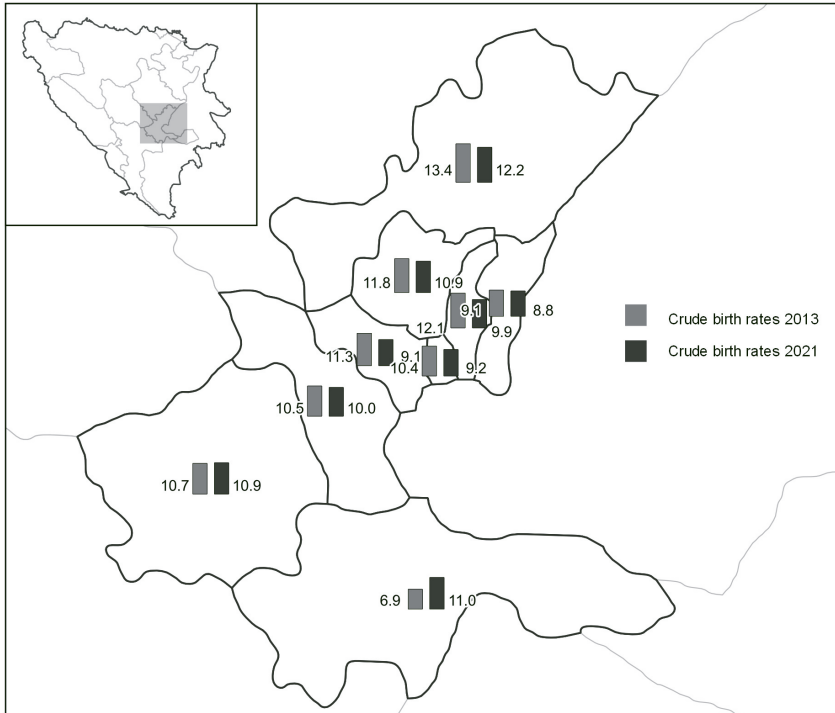
In 2001, the following municipalities had the largest shares in the total number of live births: Novi Grad (27.6%), Novo Sarajevo (17.0%), Centre (15.5%), Ilidža (13.3%) and Stari Grad (11.6%). In 2021 (year of Covid-19 pandemic), the most live births within the Canton were registered in the municipalities of Novi Grad (27.3%), Ilidža (17.3%), Novo Sarajevo (14.3%), Centar (12.8%) and Vogošća (7.7%). Comparing the beginning and the end of the examined period, a significant decrease in the number of live births is noticeable in the municipality of Stari Grad (-32.7%), and a large increase in the municipalities of Ilidža (36.7%), Ilijaš (55.2%) and Vogošća (80.1%). It is important to emphasise that there are certain differences if we compare the pre-pandemic year 2019 with the pandemic years 2020 and 2021. Namely, in two municipalities, a very strong decrease in the number of live births in 2021 compared to 2019 is noticeable: Centar (-11.9%) and Ilidža (-10.5%) (Figure 4).

In the post-millennial period, only the municipality of Ilijaš and only in 2005 had a moderate birth rate (15.1‰). In other municipalities and/or years, the birth rate was low (values up to 15‰): in Centar 10-11‰, in Hadžići 10-13‰, in Ilidža 9-12‰, in Ilijaš 9-15.1‰, in Novi Grad 9-12‰, in Novo Sarajevo 9-11.5‰, in Stari Grad 8-12‰, in Trnovo 4-15‰, and in Vogošća 7.5-15‰ have been registered. According to the latest data from 2021, Ilijaš had the highest birth rate (12.2‰,) followed by Trnovo (11‰), Ilidža and Vogošća (10.9‰).

Between 2001 and 2021, 87,345 people died in the Canton, which compared to the number of live births gives a total natural increase of 4,695. After 2009, the mortality rate ranged mostly between 10-11‰, with a significant increase to 14.9‰ in 2021 (the year of the Covid-19 pandemic). After 2008, the number of deaths was never below 4,000, and the pandemic years of 2020 and 2021 saw a record number of deaths within the post-millennial period. The number of deaths (6,241) in 2021 was 41% higher compared to 2019 (4,425). In 2020, the number of deaths increased by 18.7% compared to the previous year (FIS 2021). Since the Canton has a low birth rate, the natural change is negative.

Dynamics of the birth rate have been influenced by several factors during the period. One of them is that the Canton has certainly one of the best support policies in Bosnia and Herzegovina including financial support and allowances for newborn children, subsidies in preschool education, primary and secondary schools, as well as scholarships for pupils and students. Positive economic trends,

Figure 4.: Crude birth rates of municipalities in the Canton of Sarajevo (2013, 2021)  
 Sarajevo kanton településeinek nyers születési arányszámai (2013, 2021)



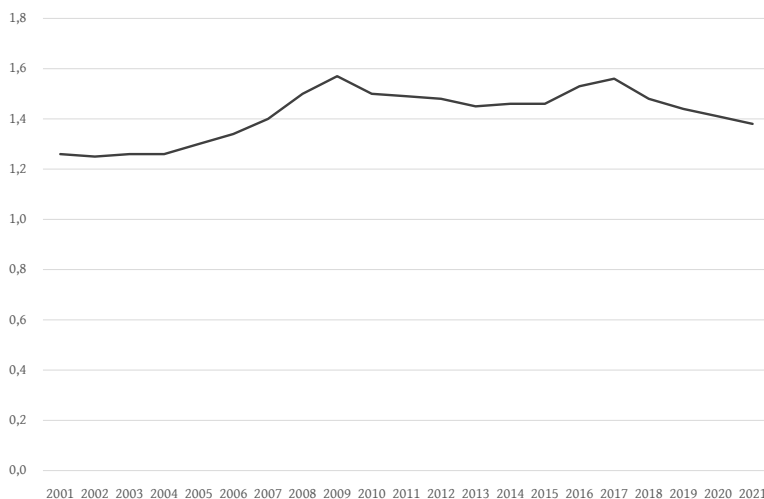
Source: compilation of Tamás Szabó

especially intensive new constructions of residential buildings, business and shopping centres, and an even stronger concentration of other attractive institutions and activities can also be regarded as a very important factor.

According to estimations of the Federal Institute for Statistics, the share of the fertile contingent in the female population decreased from 47.7% to 45.2% in the period between 2013 and 2021. At the same time, a slightly smaller increase in the proportion of women in the post-fertile period (50 years and older) – from 38.2% to 40.2% – and a small increase in the share of women in the pre-fertile period (0-14 years of age) – from 14.1% to 14.6% – can be observed. The absolute number of women in the fertile period of life decreased by about 4,000 (3.8%), which indicates the narrowing reproductive base of population (FIS 2022). Between 2001 and 2021, the total fertility rate in the Canton of Sarajevo increased by 9.5%, and showed some fluctuations. Female inhabitants gave birth to significantly fewer than two children on average during their fertile period (Figure 5). Compared to Bosnia and Herzegovina, the Canton has had a higher total fertility rate since 2007. Between 2001 and 2021, net reproduction rates of the female population were constantly below 0.8 both in the Canton and in the country.

If we compare the census data of 1991 and 2013, changes of total fertility rate can clearly be linked to the increasing education level of the female population. In 1991, female illiteracy rate was around 6%, and the proportion of female population without education was around 9%, while the total fertility rate (1.8) was not enough even then for the simple reproduction of the population. In 2013, the illiteracy rate of the female population decreased to 2.8% (53% lower than in 1991), and share of the female population without school education accounted for 4.4% (51.1 % lower than in 1991), while the total fertility rate was 1.4. The fall of total fertility rate below the replacement level represents a reproduction pattern typical for developed regions (Figure 5).

Figure 5.: Total fertility rate in the Canton of Sarajevo (2001–2021)  
*Sarajevó kanton teljes termékenység arányozsága (2001–2021)*



Source: authors' compilation

Total fertility rate shows great variation by municipalities. In 2013, Ilijaš (1.80), Centar (1.66), Trnovo (1.53), Hadžići (1.52) and Vogošća (1.46) had values above the average of the Canton, while Novi Grad (1.42), Ilidža (1.38), Novo Sarajevo (1.31) and Stari Grad (1.23) had lower values. In 2021, the same municipalities had values above the average of the Canton: Trnovo (2.68), Ilijaš (1.69), Hadžići (1.65), Vogošća (1.46), Centar (1.43). Ilidža (1.36), Stari Grad (1.33), Novo Sarajevo (1.30), and Novi Grad (1.27) experienced lower rates again. The municipality with the lowest total fertility rate (Novi Grad) had the highest total number of live births in the Canton, while the municipality with the lowest total number of live births (Trnovo) was the only unit with a total fertility rate above the replacement level (Figure 6, Table 1).

Figure 6.: Total fertility rates of municipalities in the Canton of Sarajevo (2013, 2021)  
 Szarajevó kanton településeinek teljes termékenységi arányszámái (2013, 2021)



Source: compilation of Tamás Szabó

Table 1.: Total fertility rate in the Canton of Sarajevo by municipalities (2013-2021)  
 Szarajevó kanton teljes termékenységi arányszámái települési bontásban (2013-2021)

| Municipality  | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---------------|------|------|------|------|------|------|------|------|------|
| Centar        | 1.66 | 1.49 | 1.57 | 1.68 | 1.71 | 1.53 | 1.61 | 1.47 | 1.43 |
| Hadžići       | 1.52 | 1.69 | 1.55 | 1.69 | 1.82 | 1.63 | 1.50 | 1.60 | 1.65 |
| Ilidža        | 1.38 | 1.50 | 1.46 | 1.40 | 1.49 | 1.39 | 1.51 | 1.29 | 1.36 |
| Ilijaš        | 1.80 | 1.78 | 1.97 | 1.90 | 1.71 | 1.72 | 1.83 | 1.61 | 1.69 |
| Novi Grad     | 1.42 | 1.36 | 1.37 | 1.39 | 1.39 | 1.44 | 1.34 | 1.36 | 1.27 |
| Novo Sarajevo | 1.31 | 1.43 | 1.35 | 1.47 | 1.48 | 1.43 | 1.23 | 1.33 | 1.30 |
| Stari Grad    | 1.23 | 1.32 | 1.50 | 1.63 | 1.74 | 1.53 | 1.31 | 1.38 | 1.33 |
| Trnovo        | 1.53 | 2.28 | 2.40 | 2.70 | 3.28 | 2.52 | 4.00 | 2.97 | 2.68 |
| Vogošća       | 1.46 | 1.43 | 1.39 | 1.68 | 1.69 | 1.45 | 1.48 | 1.56 | 1.46 |

Source: authors' calculations

Unlike the Federation of Bosnia-Herzegovina, the Canton is still an immigration area, primarily for younger people. In 2021, the younger population between the ages of 20 and 40 accounted for 48.8% of the migrants. This type of immigration significantly rejuvenates the total population. In the period between 2013 and 2021, the balance of migration was positive (8,059 persons). Emigration from the Canton and immigration to the Canton from other areas accounted for 32.4-37.5% of the migrations per year (the rest being migrations within the Canton). Not surprisingly, the Canton is the focal point of domestic migration in Bosnia and Herzegovina. Most of the population immigrated to the Canton for employment, education, and marriage, and the majority moved out for employment and marriage. Most of the population with a higher level of education and in their most productive years is emigrating, while population with a lower level of education and qualifications, but still of age groups that can significantly contribute to the reproduction of the population, is immigrating.

Demographic potential can be measured not only by the age and gender structure of the population and by possible immigration, but also by the attitudes and wishes of the reproductive population about having or not having children. Of course, it depends on economic, social, political, housing, educational, and similar conditions prevailing in the society. The harmonisation of these conditions and the objective wishes of the population are the basic goal of governance at all levels and in all environments. A survey carried out by the Ministry of Labour, Social Policy, Displaced Persons, and Refugees of the Canton of Sarajevo (2022) in October 2022 confirms the desire among the childless population to have children, with the fact that only 11% of the surveyed representative population has a clear attitude about not wanting to have children. The differences between men and women are minimal. For all respondents, regardless of whether they have children or not, the total number of children is 1,238. On the other hand, the total number of children that the respondents would like to have if their circumstances allowed them is 2,390, which is almost twice as much. In this difference, the group of respondents who currently do not have children has a particularly large influence. Among them, respondents who would have two or three children were the most represented (over 35% in the mentioned group). The analysis is not at all optimistic, so a revitalisation population policy is urgently needed at the level of the Canton, but even more so at the level of the entity and the state.

There are multiple reasons behind the unfavourable demographic situation. Economic difficulties add strain to family life; young couples find it difficult to gain access to affordable housing; unemployment rates are soaring; there is a high dependence on part-time and low-wage jobs; and there is no guarantee of continued employment for women who go on maternity leave. In addition to unemployment, inadequacy of the education system, depressing political situation, and the lack of prospects for a better future have all contributed to the

mass emigration of young people. Existential problems of the youth also have a strong impact on having fewer children than desired (Gekić et al. 2020).

Rural-urban migrations contributed to a higher number of live births in urban areas. However, the overall decline in the total fertility rate in recent years was particularly influenced by the constant changes in the family pattern and various social and economic changes. The gradual decrease of marriages for those under 30 years of age continues, and the increased age of marriage and the age of mothers at first birth, as well as the decrease in the rate of higher-order births, undoubtedly contributed to the lower fertility (Gekić et al. 2022a).

Decrease in natural population dynamics is much faster than economic development, so the Canton is already in the post-transitional stage of population development characteristic of highly developed regions. It was favored not only by general socio-economic processes (modernisation, industrialisation, urbanisation, etc.), but also by special factors like war losses and significant emigration. This transition is a clear reflection of the instability of economic development, as well as the political-military (dis)opportunities due to the Second World War, and the war in Bosnia and Herzegovina (1992–1995). In 2019, the Canton entered a period of pronounced natural depopulation, which, as a result of the Covid-19 pandemic, became deeper in 2020 and 2021. Decline in fertility in the last decade is much more noticeable than in the years immediately after the war and partly reflects the absence of systemic population policy.

### **Population policy in the Canton of Sarajevo**

Social welfare policy and the protection of families with children are financed by the budget of the Canton. Among other things, it also finances the work of public institutions providing social protection and founded by the Canton, and associations of persons with disabilities. Regulations on financial benefits under the Law on social protection, protection of civilian victims of war, and protection of families with children adopted every year, determine the amounts of supports in the three aforementioned areas. The Canton (as well as Bosnia and Herzegovina or any other administrative unit within it) does not have an official population policy. But in 2022, the Canton started to create one by starting the process of drafting its Demographic Development Strategy. For almost 20 years, the financial support of families have not changed significantly. For this reason, we make a comparison only between the situations of 2017 and 2022 because there are significant differences.

From 2017 until 2022, the financial support of the families with children have changed in accordance with the aforementioned regulations. The amount of child allowance increased from 17 EUR in 2017 to 27 EUR in 2022. The amount of the increased allowance for children grew from 25 EUR in 2017 to a varied value



of 27 to 44 EUR in 2022. Allowance for working mothers increased from 184 EUR in 2017, to a varied value of 115 to 305 EUR in 2022, noting that these mothers also had the option to obtain additional assistance in the form of childcare in an amount of 205 to 394 EUR. Financial assistance to unemployed mothers grew from 92 EUR in 2017 to 168 EUR in 2022, and these beneficiaries also received the right to additional assistance in the form of care and childcare for an unemployed mother in the amount of 342 EUR. One-time assistance for the equipment of a newborn child amounted to 107 EUR in 2017, and increased to 192 EUR in 2022. Nutritional support for a child up to six months or additional nutrition for nursing mothers amounted to 25 EUR in 2017 and 31 EUR in 2022. However, supports for the placement of children in preschool (82 EUR), health care for beneficiaries of the child allowance (10 EUR), and health care per registered child based on Article 146 of the Cantonal Law (10 EUR) have not changed (Službene novine Kantona Sarajevo 2017, 2022).

Table 2.: Changes in financial support of families in the Canton of Sarajevo (2017–2022, Euro)  
*Változások Szarajevó kanton családtámogatásának pénzügyi eszközeiben (2017–2022, Euró)*

| <i>Instrument</i>  | 2017 | 2022     |
|--|------|----------|
| Child allowance  | 17   | 27       |
| Increased child allowance                                | 25   | max. 44  |
| Allowance for working mothers                            | 184  | max. 305 |
| Financial assistance to unemployed mothers               | 92   | 168      |
| One-time assistance for the equipment of a newborn child | 107  | 192      |
| Nutritional support                                      | 25   | 31       |

Source: authors' calculations

All the allowances are financed by the Ministry of Labour, Social Policy, Displaced Persons and Refugees of the Canton of Sarajevo. According to the data of the ministry, a monthly average of 2.86 million EUR was allocated for these needs in 2022. The increasing financial benefits mark the start of a new population policy in the Canton (Archives of the Ministry of Labour, Social Policy, Displaced Persons and Refugees of the Canton of Sarajevo 2022).

Until the adoption of the Law on Material Support of Families with Children in the Federation of Bosnia-Herzegovina (Službene novine Federacije Bosne i Hercegovine 2022), all rights in protection of families with children in the Canton were regulated by the laws of the Federation and the Canton. The new Law entered into force in July 2022. It defines child allowance in an amount of 19% of the lowest salary in FBiH if the total monthly income per member of the household does not exceed 40% of the lowest salary in the FBiH or if the child has not been placed in a foster family or social protection institution for a period longer than 30 days. The costs are covered by the budget of FBiH. Financial assistance to unemployed mothers in labour is determined in an amount of 55%

of the lowest salary in FBiH, and funds for the realisation of this right are provided by the budgets of the cantons.

Furthermore, the Law on Material Support stipulates that financial assistance to an unemployed mother in the FBiH determined according to the Labour Law currently amounts to 153 EUR (Službene novine Federacije Bosne i Hercegovine 2022), while the same support according to the law of the Canton of Sarajevo is 509 EUR. There was an obligation to harmonise the law of the Canton with the Law on Material Support, bearing in mind that the financial aid in the Canton is much higher than at a national level. Therefore, based on the law of the Canton, unemployed mothers will receive the additional assistance of child care from the local budget paying the difference of the two regulations.

Financial compensation for mothers in employment is realised in the amount of 60% of the average salary determined in accordance with the law of the Canton. In order for mothers who are employed to continue to receive the same amount of financial benefits, it is prescribed that additional assistance for the care of the child is added to the amount of the compensation, which is obtained by calculating the difference of the two regulations.

It should be emphasised that the scope of rights that children and women in labour had through the law of the Canton before the Law on Material Support came into force are not decreased in any segment of the proposed law. The legal solutions have already been maintained and improved, on the basis of which the protection of these sensitive categories of citizens in the Canton is valued as high, and that the pronatal policy started in the Canton has been continued through this law (Službene novine Kantona Sarajevo 2017, 2022).

Regarding the additional protection of families with children in the Canton, it is important to mention the regulation on subsidising the costs of children's stay in preschools, which defined the beneficiaries and the co-financing of children's stay in kindergartens in the amounts of 50%, 70%, and 100% (Službene novine Kantona Sarajevo 2020–2022).

The average monthly benefits in lieu of salary to mothers in employment were very variable and ranged from 341,160 EUR in 2004 to 777,000 EUR in 2012, and then decreased, only to increase again after 2017. Average monthly funds for mothers not in employment ranged from 165,288 EUR (2004) to 203,284 EUR (2017). Since 2006, the average monthly one-time aid for the equipment of a newborn child have been in constant decline until 2020, from 11,608 EUR to 4,465 EUR, when they increased again in 2021. It is very similar to the average monthly amount of child food assistance, with a much more pronounced decline from 15,953 EUR in 2006 to 5,025 EUR in 2021. The average monthly funds of kindergarten subsidies are significantly higher at the end of the observed period due to the changed scope of the right itself (the difference is 18.8%). Between 2004 and 2021, 103.3 million EUR was allocated for children's allowances, 2.1 million EUR for health care of children, about 130.4 million EUR for salary

compensation of mothers in employment, slightly more than 33 million EUR for financial assistance of mothers without work relationships, then about 1.84 million EUR for one-time aid for the equipment of the newborn children, about 2.4 million EUR for help with feeding the child or mother, and about 2.8 million EUR for kindergarten subsidies.

The average monthly funds for the protection of families with children in the Canton amounted to EUR 1,048,435 in 2004 and have been steadily increasing since that year. The highest average monthly funds were 1,518,758 EUR (in 2012): they significantly decreased until 2018 and then increased slightly. In the pandemic year of 2021, the average monthly funds for the protection of families with children in the Canton amounted to 1,278,976 EUR and were approximately 22% higher than in 2004 (Archives of the Ministry of Labour, Social Policy, Displaced Persons and Refugees of the Canton of Sarajevo 2022).

Another significant issue, the analyzed survey data points to, is the serious scale of the housing crisis, which makes decent housing unaffordable for younger age groups. These groups are usually not creditworthy to take out a loan for the purchase of increasingly expensive apartments. Few can rely on the help of their families, so they are sent to the unregulated market of tenant apartments. Thus, residents in the 25-39 age group see that an unsuitable apartment is a limitation for them, just like being unemployed. Almost all respondents who live in smaller apartments – tenants and owners of apartments with a mortgage – also see this as the reason for not wanting more children. In the Canton and in other regions where similar research has been conducted, it has been proven that the unaffordability of a decent apartment has a negative effect on biological reproduction, and this fact is connected to material deprivation and is one of the reasons for planned emigration. Although the Ministry of Communal Economy, Infrastructure, Spatial Planning, Construction and Environmental Protection invests in co-financing the apartments purchased by young married couples, it is not nearly enough (Ministry of Labour, Social Policy, Displaced Persons and Refugees of the Canton of Sarajevo 2022).

Since 2003, the Canton has been helping young people to solve their housing issue by significant investments. Between 2003 and 2006, 6 million EUR was lent to young people for purchasing their first apartments. In the period of 2007-2016, 7 million EUR was invested in resolution of property-legal relations and construction of collective and individual housing. Last but not least, between 2017 and 2021 10 million EUR were invested in subsidising the housing of young people (Archives of the Ministry of Communal Economy, Infrastructure, Spatial Planning, Construction and Environmental Protection of the Canton of Sarajevo 2022).

## **Conclusion**

The demography of Bosnia and Herzegovina fits into the Southeast-European trends with sub-replacement fertility and high emigration rates. At the national level, natural decline started in 2007, while migration is influenced by the war and its aftermath, as well as several economic and political push factors (low wages, corruption, high unemployment, etc.) and also had a serious impact on birth and death rates. Youth emigration is an especially serious problem.

On the other hand, demographic trends of the Canton of Sarajevo differ from the national pattern. It reached sub-replacement fertility more than a decade later (2019) and migration still has a (slightly) positive balance: beyond significant emigration rates, immigration to the Canton, especially from the other parts of Bosnia and Herzegovina, is still higher. Since migration involves younger generations, it is also a factor supporting more favourable fertility rates, and can be evaluated as consequence of better socio-economic development in the capital and its gravitational area.

Population is intensively affected by the aging process. In the Canton, there have been several factors that contributed to the decline of the birth rates. Changing function of family and children in the society; increasing women's employment, educational level and career aspirations; increasing individualism and rationality; altering social climate in relation to children; higher personal standards; and other socio-psychological factors should be mentioned.

However, since natural change in the Canton turned negative and the overall national demographic trends are bleak, in the last few years, the government of the Canton has taken serious steps in terms of measures and funds to improve demographic trends. Due to its demographic, economic and political significance the Canton is a key area for population revitalisation in Bosnia and Herzegovina, therefore local measures have a national significance and can act as a model for the rest of the country in terms of population policy as well.

Of course, these measures must be harmonised. In addition to family policy measures, effective migration policy also should be put into the focus. It includes the much more attractive indirect measures that would produce results in the short and long term, primarily with the aim of decreasing emigration, especially among the youth and the higher educated population, as well as measures for the return of former emigrants.

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