ЕКОНОМІЧНА ТА СОЦІАЛЬНА ГЕОГРАФІЯ

УДК 913(4/9)
DOI:https://doi.org/10.25128/2519-4577.24.2.7

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ANALYSIS OF THE DEMOGRAPHIC SITUATION IN EU COUNTRIES

The article analyzes the current demographic situation in EU countries. The authors pay special attention to the changes in the number of the population for the period 2011-2023; analyze the indicators of birth, mortality and average life expectancy in the EU in general and in its individual countries in particular.

A detailed study of the demographic situation in the region allowed the authors to group the EU countries according to the similarity of demographic indicators and their trends in the modern period. The first group consists of countries with the least favorable demographic structure. Negative demographic trends here have been going on for several decades. The demographic situation can be calleting critical. This includes Bulgaria and Germany. The second group of countries has the same negative trends, but not as serious. There are also negative demographic trends here, which are in the first group, but are older. This group includes most EU countries: Austria, Croatia, Czech Republic, Estonia, Greece, Hungary, Italy, Latvia, Lithuania, Poland, Portugal, Romania, Slovakia, Slovenia and Spain. The third group consists of countries with a relatively good demographic situation, or countries that are just beginning to suffer from negative demographic trends with the potential to take measures to correct the situation. This group includes seven countries: Belgium, Denmark, Finland, France, Malta, the Netherlands and Sweden. The fourth group is small and includes EU countries that demonstrate positive demographic trends - a higher percentage of the young population and a high birth rate. These are Cyprus, Ireland and Luxembourg.

The analysis of birth rates in the countries of the European Union in the modern period allows us to state that the tendency to lower birth rates began to be detecting after the crisis of 2008, when 4.68 million people were born in the EU. Austria, Belgium, Denmark, Estonia, the Netherlands, Germany, Slovenia, France, and Finland are also among the countries with significant population growth. Romania and Slovakia belong to the group of countries where minor changes in the number of the population, which do not affect the general demographic situation, are observe ding. Demographic problems in the EU are regularly reflecting in Eurostat's analytical reports. According to data from this statistical agency, published at the end of 2023, 75.7% of European households have no children. This indicates that depopulation and population decline are almost inevitable in the coming decades. According to Eurostat's cautious forecasts, the population of the European Union will decrease by 6% by 2100.

The mortality rates in the countries still exceed the birth rates, thus negative natural growth is forming and natural reproduction of the population is not ensure ding in full. According to the indicators of the mortality rate, the countries of the European Union can be divided into three categories: 1) with high indicators of the mortality rate; 2) with low the mortality rates; 3) with the mortality rates close to the EU average.

In all EU countries, there are differences in life expectancy of men and women. On average, women in the studied countries live 5.3 years longer than mining. Together with the general indicator of average life expectancy, its value for the male and female population of the EU-27 increased.

Further studies of the demographic situation in the EU countries should be amending at a detailed forecast of the demographic situation in the coming years and at the analysis of the effectiveness of the demographic policy of the countries of the region.

Key words: *demography, population, EU, birth rate, mortality, fertility.*

Relevance and novelty of the research. The study of the demographic situation in the EU countries has gained special relevance in recent years. The demographic aging of the population, the increase in the burden on people of working age, significant migration processes, the reduction in the birth rate and other negative phenomena caused the need for a well-thought-out demographic development strategy for the countries of the region. In addition, for this, a detailed study of the demographic situation of both the EU as a whole and each individual country from this formation is necessary. Eurostat's forecasts for the population of the EU until the year 2100 are quite disappointing and indicate a rapid population decline already in the middle of the 21st century [8]. Therefore, the demographic policy needs urgent and well-thought-out measures in order to prevent a demographic crisis.

Analysis of the latest publications on the research topic. In recent years, Ukrainian scientists have studied the population of the EU in the following areas: migration in the region (Tokar P., 2023), the modern development of the EU migration policy and the migration prospects of Ukraine (Malinovska O., 2021), the impact of migration on the transformation of the sex-age composition of the population and on economic development in the EU countries (Grechka O., 2020). Foreign scientists pay more attention to the study of the impact of COVID-19 on morbidity

and mortality in EU countries (Srikanta Sannigrahi, Francesco Pilla, Bidroha Basu et al., 2020), the problems of the demographic transition (Lesthaeghe R., 2020), the relationship between unemployment and the decline birth rate in the EU (Giammarco Alderotti, Daniele Vignoli, Michela Baccini, Anna Matysiak), the impact of population aging on the formation of the labor market in the EU countries (Cristea M., Noja G.G., Stefea P., Sala A.L.), etc.

Presentation of the main material. Analysis of the population of the countries of the European Union for the period from 2011 to 2023 shows a growth of 1.4% (Table 1).

Table 1

Population in EU countries from 2017 to 2023, million people*

Country	2011	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023 from t 2011, %
Austria	8.4	8.6	8.7	8.7	8.8	8.8	8.9	8.9	8.9	9.1	+8.3
Belgium	10.9	11.2	11.3	11.3	11.4	11.4	11.5	11.5	11.6	11.7	+7.3
Bulgaria	7.5	7.2	7.1	6.8	6.7	6.6	6.5	6.5	6.4	6.4	-14.7
Greece	11.3	10.8	10.8	10.8	10.7	10.7	10.7	10.6	10.5	10.4	-7.9
Denmark	5.5	5.6	5.7	5.7	5.8	5.8	5.8	5.8	5.9	5.9	+7.2
Estonia	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.4	+7.7
Ireland	4.4	4.7	4.8	4.8	4.8	4.9	4.9	5.0	5.0	5.2	+18.2
Spain	47.2	46.4	46.5	46.5	46.7	46.9	47.3	47.4	47.4	48.1	+1.9
Italy	60.6	60.7	60.6	60.1	59.9	59.8	59.6	59.2	59.1	58.9	-2.8
Cyprus	0.8	0.8	0.9	0.8	0.8	0.8	0.9	0.9	0.9	0.9	+12.5
Latvia	2.2	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	-18.2
Lithuania	3.2	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.9	-9.4
Luxembourg	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	+40.0
Malta	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	+25.0
Netherlands	16.7	16.9	17.0	17.0	17.2	17.3	17.4	17.5	17.6	17.8	+8.4
Germany	81.8	81.7	82.3	82.5	82.8	83.0	83.2	83.2	83.2	84.3	+3.1
Poland	38.2	37.9	37.9	37.9	37.9	37.9	37.9	37.0	36.8	36.7	-3.9
Portugal	10.6	10.4	10.3	10.3	10.2	10.2	10.3	10.3	10.4	10.5	-9.4
Romania	19.0	19.8	19.7	19.6	19.6	19.4	19.3	19.2	19.1	19.0	0.0
Slovakia	5.4	5.4	5.4	5.4	5.4	5.5	5.5	5.5	5.4	5.4	0.0
Slovenia	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	+5.0
Hungary	9.9	9.8	9.8	9.8	9.8	9.7	9.8	9.7	9.7	9.6	-3.0
Finland	5.4	5.4	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.6	+3.7
France	65.1	66.5	66.7	66.8	67.0	67.3	67.5	67.7	67.9	68.2	+4.7
Croatia	4.2	4.2	4.2	4.1	4.0	3.9	3.9	3.9	3.9	3.9	-7.1
Czech Republic	10.5	10.5	10.6	10.6	10.6	10.7	10.7	10.5	10.5	10.8	+2.3
Sweden	9.4	9.8	9.9	9.9	10.1	10.2	10.3	10.4	10.4	10.5	+11.7
Total**	442.4	444.2	445.2	445.5	446.2	446.4	447.3	447.1	446.8	448.8	+1.4

**calculated by the authors based on Eurostat data*

***calculation for the current composition of EU-27 countries (updated composition from 2020)*

It should be noted that we analyzed the EU-27 group of countries, i.e. the updated composition of this formation from 2020 (after the withdrawal of Great Britain from the EU). As of 2023, 448.8 million people lived in the EU countries (6.4 million people more than in 2011). With the overall increase in the population in the EU structure, it is worth noting that different demographic processes are taking place in different countries of this group - some countries show a population decline, while others show a gradual increase in population over the period under study. Let us consider these features in more detail.

Analysis of Table 1 allows us to distinguish three groups of countries - countries in which the population has significantly decreased, countries in which the population has increased, and countries in which the changes in the population were not significant.

In the first group of countries, it is worth highlighting those countries that experienced the largest reduction in population - Bulgaria by 14.7%, Latvia - by 18.2%, Portugal - by 9.4%, Greece - by 7.9%, Croatia - by 7.1%.

The largest population growth during the studied period is observing in Ireland - by 18.2%, Cyprus - by 12.5%, Malta - by 25.0%, Sweden - by 11.7%. The leader in this group is Luxembourg, which recorded population growth of 40.0%.

Austria, Belgium, Denmark, Estonia, the Netherlands, Germany, Slovenia, France, and Finland are also among the countries with

significant population growth.

Romania and Slovakia belong to the group of countries where minor changes in the number of the population, which do not affect the general demographic situation, are observed.

Traditionally, Germany (84.3 million people), France (68.2 million people), Italy (58.9 million people), and Spain (48.1 million people) remain the leading countries in terms of population in the EU region. However, if we analyze how their population changed over the period 2011-2023, it is worth noting that only in Italy the population decreased (by 2.8%), while all other countries of this quartet show population growth.

The group of EU countries with the smallest population includes Estonia (1.4 million people), Luxembourg (0.7 million people), Malta (0.5 million people). In each of these countries, the population increased by approximately 100,000 people during the specified period.

One of the most important demographic indicators, which directly depends on the number of people, is population density (Table 2).

Table 2

Population density of the countries of the European Union, population density

Country	2011	2015	2020	2023	2023 from to 2011, population density
Austria	99.7	100.5	106.2	108.7	+9.0
Belgium	352.0	363.7	372.2	380.2	+28.2
Bulgaria	68.5	64.7	62.5	58.1	-10.4
Greece	85.4	81.9	81.1	78.8	-6.6
Denmark	128.1	132.2	135.6	138.3	+10.2
Estonia	29.6	29.2	29.6	30.4	+0.8
Ireland	64.3	67.2	71.2	75.8	+11.5
Spain	93.4	91.8	93.6	95.5	+2.1
Italy	200.4	201.8	197.5	196.0	-4.4
Cyprus	86.6	94.2	99.1	103.0	+16.4
Latvia	35.0	30.4	29.2	28.9	-6.1
Lithuania	51.4	44.7	43.0	44.2	-7.2
Luxembourg	190.1	220.3	243.8	257.7	+67.6
Malta	1305.7	1408.4	1630.8	1749.2	+443.5
Netherlands	396.9	389.0	415.3	426.3	+30.1
Germany	229.9	228.8	232.9	233.3	+3.4
Poland	121.9	121.4	121.1	117.2	-4.7
Portugal	114.4	112.8	112.1	112.9	-1.5
Romania	90.2	83.1	80.8	79.9	-10.3
Slovakia	110.8	110.7	111.4	110.8	0.0
Slovenia	101.4	101.7	103.5	104.4	+3.0
Hungary	107.8	105.8	104.8	103.1	-4.7
Finland	15.8	16.2	16.4	16.5	+0.7
France	99.6	122.3	124.3	125.5	+25.9
Croatia	75.8	74.5	71.6	68.2	-7.6
Czech Republic	132.8	133.7	135.6	137.7	+4.9
Sweden	20.6	21.8	23.0	23.4	+2.8
EU-27**	102.3	104.9	105.6	105.9	+3.6

**calculated by the authors based on Eurostat data*

***calculation for the current composition of EU-27 countries (updated composition from 2020)*

The highest population density is in Malta (1749.2 people/km^2), the Netherlands (426.3 people/km^2) and Belgium (380.2 people/km^2), which is significantly higher than the EU average of 105.9 people/km^2. The group of countries with high population density includes Germany (233.3 people/km^2), Luxembourg (257.7 people/km^2), Italy (196.0 people/km^2). These countries retain their leadership in terms of population density for the entire period under study. Instead, the lowest population density in 2023 is shown by Sweden (23.4 people/km2), Estonia (30.4 people/km^2) and Latvia (28.9 people/km^2).

During the period 2011-2023, the population density increased significantly in Malta (+443.5 people), Luxembourg (+67.7 people), the Netherlands (+30.1 people), and Belgium (+28.2 people). At the same time, a decrease in the density indicator was observed in some countries, which is associated with a decrease in the total number of the country's population - Bulgaria (-10.4 people), Romania (-10.3 people), Croatia (-7.6 people), Lithuania (-7.2 people), etc. (Table 2.2).

In general, the population density increased in the EU-27 countries during the period under study. In 2023, it was 105.9 people/km^2, which is 3.6 people more than in 2011.

The analysis of the birth rates in the countries of the European Union in the modern period allows us to state that the tendency to lower birth rates began to be detecting after the crisis of 2008, when 4.68 million people were born in the EU [8]. During the studied period, a decrease in the birth rate in 2022 was reordering in the EU countries, which reached a record low since 1962. During this time, 3.88 million children were born in the region. It should be noted that in 2008 the number of newborns in the European Union was almost 4.7 million, and then it began to steadily decrease. That is, in less than 15 years, the child birth rate in the EU fell by almost 1 million people.

As of 2023, the highest birth rates are observed in Luxembourg, Cyprus, France, Sweden and Ireland (over 10.0‰). Instead, Spain, Italy, Greece and Lithuania show the lowest indicators (up to 8.0‰) (Table 3).

Table 3

The main demographic coefficients of the EU countries in 2014 and 2023

Country	**Birth rate, ‰**		**Death rate, ‰**		**Natural increase rate, ‰**		**Median age of the population, years**	
	2014	2023	2014	2023	2014	2023	2014	2023
Austria	9.8	9.2	10.6	11.6	-0.8	-2.4	42.9	43.5
Belgium	10.8	9.8	11.3	9.5	-0.5	+0.3	41.3	41.9
Bulgaria	9.2	8.7	17.4	15.7	-8.2	-7.0	43.7	46.8
Greece	8.5	7.3	12.1	12.2	-3.6	-4.9	42.9	46.1
Denmark	10.2	9.9	9.6	9.8	+0.6	+0.1	41.3	42.2
Estonia	10.6	8.7	12.0	11.7	-1.4	-3.0	41.3	42.3
Ireland	13.9	10.8	6.9	6.7	+7.0	+4.1	35.8	39.1
Spain	9.0	6.9	10.6	9.1	-1.6	-2.2	41.8	45.3
Italy	8.0	6.7	12.2	11.2	-4.2	-4.5	44.7	48.4
Cyprus	10.8	11.3	7.6	7.3	+3.2	+4.0	36.8	38.4
Latvia	11.1	8.5	14.6	14.9	-3.5	-6.4	42.4	43.9
Lithuania	10.8	7.9	14.9	12.9	-4.1	-5.0	42.1	44.2
Luxembourg	10.7	10.1	8.1	6.7	+2.6	+3.7	39.2	39.7
Malta	9.7	8.3	9.2	7.4	+0.5	+0.9	40.6	40.1
Netherlands	10.1	9.5	10.3	9.5	-0.2	0.0	42.0	42.5
Germany	9.0	9.6	12.1	12.2	-3.1	-2.6	45.6	45.4
Poland	9.7	8.3	12.6	11.1	-2.9	-2.8	39.2	42.6
Portugal	8.3	8.1	11.9	11.3	-3.6	-3.2	43.1	47.0
Romania	10.2	9.4	15.1	12.7	-4.9	-3.3	40.8	43.6
Slovakia	10.3	9.7	10.9	9.9	-0.6	-0.2	38.6	42.2
Slovenia	10.0	8.4	11.6	10.2	-1.6	-1.8	42.5	44.9
Hungary	9.4	9.3	14.4	13.4	-5.0	-4.1	41.3	44.2
Finland	10.1	8.1	10.1	11.0	0.0	-2.9	42.4	43.5
France	12.0	10.7	10.1	9.3	+1.9	+1.4	40.7	42.4
Croatia	8.9	8.8	13.6	13.3	-4.7	-4.5	42.8	45.4
Czech Republic	10.5	9.6	12.3	10.4	-1.8	-0.8	40.8	43.7
Sweden	11.7	10.0	9.9	10.4	+1.8	-0.4	40.9	40.8
EU-27**	9.7	8.7	11.7	10.8	-2.0	-2.1	42.5	44.5

**calculated by the authors based on Eurostat data*

***calculation for the current composition of EU-27 countries (updated composition from 2020)*

Therefore, in 2022, this indicator fell to 1.46, while in 2021 it was 1.51.

The bleak demographic situation in Europe is exacerbated by the falling birth rate - the average number of children born to a woman. The total fertility rate in the EU in 2022 was 1.46 births per woman, which is significantly lower than the rate of natural reproduction (2.1-2.2 births per woman). The highest total fertility rate was observe in 2008, 2010 and 2017 (1.57), in the interval between them, it fluctuated between 1.51 and 1.57.

The highest number of births per woman in the EU in 2022 was recording in France - 1.79 births per woman. The Czech Republic was in second place (1.74), Romania was third (1.71), and Bulgaria was fourth (1.65). Ireland has significantly reduced its fertility rate compared to previous years - from 1.89 births per woman in 2014 to 1.54 in 2022. The largest decline in the fertility rate occurred in this country from 2021 to 2022.

The lowest fertility rates were observed in Malta (1.08 births per woman), Spain (1.16), Italy (1.24), Poland (1.29), Greece (1.32) and Luxembourg (1.31).

Despite the decrease in the birth rate, the number of newborns from mothers of foreign origin is increasing. The number of children born to mothers from other EU and non-EU countries has been increasing since 2013, when comparable data began to be provide.

The share of children born to mothers of foreign origin varies significantly between EU member states. In 2019, more than 65% of newborns in Luxembourg were born to mothers of foreign origin, while in Cyprus, Austria and Belgium this proportion was around a third. In nine countries, the share of children born to mothers from abroad was less than 10%, with the lowest share (2%) in Bulgaria, Slovakia and Poland.

Table 4

Fertility indicators

Country	2014	2015	2016	2017	2018	2019	2020	2021	2022
Austria	1.46	1.49	1.53	1.52	1.47	1.46	1.44	1.48	1.41
Belgium	1.74	1.70	1.68	1.65	1.62	1.60	1.55	1.60	1.53
Bulgaria	1.53	1.53	1.54	1.56	1.56	1.58	1.56	1.58	1.65
Greece	1.30	1.33	1.38	1.35	1.35	1.34	1.39	1.43	1.32
Denmark	1.69	1.71	1.79	1.75	1.73	1.70	1.68	1.72	1.55
Estonia	1.54	1.58	1.60	1.59	1.67	1.66	1.58	1.61	1.41
Ireland	1.89	1.85	1.81	1.77	1.75	1.71	1.63	1.78	1.54
Spain	1.32	1.33	1.34	1.31	1.26	1.23	1.19	1.19	1.16
Italy	1.38	1.36	1.36	1.34	1.31	1.27	1.24	1.25	1.24
Cyprus	1.31	1.32	1.37	1.32	1.32	1.33	1.36	1.39	1.37
Latvia	1.65	1.70	1.74	1.69	1.60	1.61	1.55	1.57	1.47
Lithuania	1.63	1.70	1.69	1.63	1.63	1.61	1.48	1.36	1.27
Luxembourg	1.50	1.47	1.41	1.39	1.38	1.34	1.36	1.38	1.31
Malta	1.38	1.37	1.37	1.26	1.23	1.14	1.13	1.13	1.08
Netherlands	1.71	1.66	1.66	1.62	1.59	1.57	1.54	1.62	1.49
Germany	1.47	1.50	1.60	1.57	1.57	1.54	1.53	1.58	1.46
Poland	1.32	1.32	1.39	1.48	1.46	1.44	1.39	1.33	1.29
Portugal	1.23	1.31	1.36	1.38	1.42	1.43	1.41	1.35	1.41
Romania	1.56	1.62	1.69	1.78	1.76	1.77	1.80	1.81	1.71
Slovakia	1.37	1.40	1.48	1.52	1.54	1.57	1.59	1.63	1.57
Slovenia	1.58	1.57	1.58	1.62	1.60	1.61	1.59	1.64	1.55
Hungary	1.44	1.45	1.53	1.54	1.55	1.55	1.59	1.61	1.56
Finland	1.71	1.65	1.57	1.49	1.41	1.35	1.37	1.46	1.32
France	2.00	1.96	1.92	1.89	1.87	1.86	1.83	1.84	1.79
Croatia	1.46	1.40	1.42	1.42	1.47	1.47	1.48	1.58	1.53
Czech Republic	1.53	1.57	1.63	1.69	1.71	1.71	1.74	1.83	1.74
Sweden	1.88	1.85	1.85	1.78	1.76	1.71	1.67	1.67	1.53
EU-27**	1.54	1.54	1.57	1.56	1.54	1.53	1.51	1.53	1.46

**calculated by the authors based on Eurostat data*

***calculation for the current composition of EU-27 countries (updated composition from 2020)*

Over the past 15 years, the birth rate in the countries of the European Union has decreased by 17%. In 2021, an "anti-record" number of newborns was recording in Poland - less than 300 thousand, which is the lowest figure since the Second World War.

Demographic problems in the EU are regularly reflect in Eurostat's analytical reports. According to data from this statistical agency, published at the end of 2023, 75.7% of European households have no children. This indicates that depopulation and population decline are almost inevitable in the coming decades. According to Eurostat's cautious forecasts, the population of the European Union will decrease by 6% by 2100.

Mortality in EU countries. The dynamics of mortality rates, as well as its structure, are the subject of scientific research by demographers of various countries, since global mortality statistics have domestic peculiarities. According to WHO experts, non-communicable diseases - heart disease, cancer, diabetes, chronic respiratory diseases, mental health disorders, as well as mortality from injuries and accidents - are the cause of more than 70% of all deaths in the world.

In 2023, the average mortality rate in the EU was recording at the level of 10.8‰ [8]. Compared to 2014, it decreased significantly - by 0.9‰. However, the death rate still exceeds the birth rate, thus a negative natural increase is

forming and the natural reproduction of the population is not ensure in full. According to the indicators of the mortality rate, the countries of the European Union can be divide into three categories: 1) with high indicators of the mortality rate; 2) with low mortality rates; 3) with the mortality rates close to the EU average.

The first group of countries includes Bulgaria, Greece, Latvia, Lithuania, Germany, Romania, Hungary, and Croatia - in each of these countries, the mortality rate was over 12.0‰ in 2023 [8].

The second group of countries with a mortality rate lower than the EU average include sing: Belgium, Denmark, Ireland, Spain, Cyprus, Luxembourg, Malta, the Netherlands, France (mortality rate below 10.0‰).

The third group of countries, which demonstrate average mortality rates for the EU (10.0‰-11.9‰) including Austria, Estonia, Italy, Poland, Portugal, Slovakia, Slovenia, Finland, Czech Republic, Sweden.

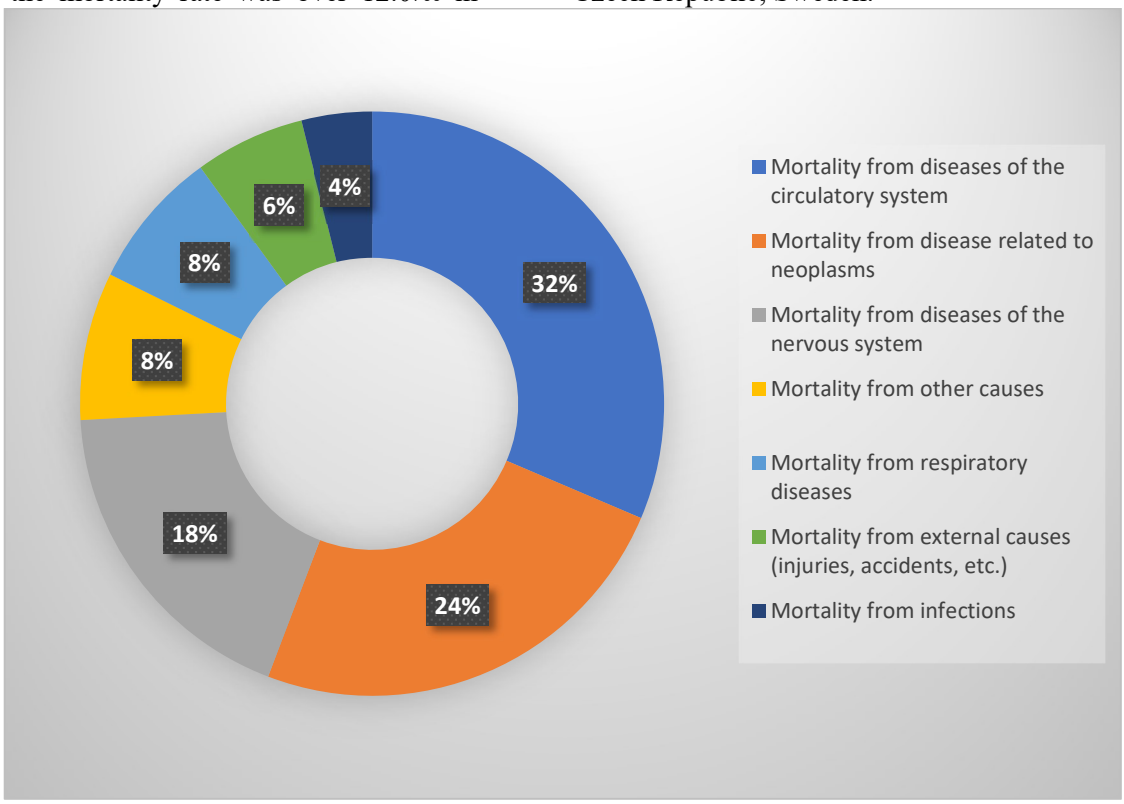

Fig. 1. Mortality of the EU population from various diseases, 2023

The analysis of the structure of mortality showed that in all analyzed countries the first place in terms of number was consistently occupying by diseases of the circulatory system, with the exception of Iceland and Spain, where mortality from neoplasms is in the first place.

In all countries, mortality from neoplasms takes second place, with the exception of Iceland and Spain, where mortality from diseases of the circulatory system is in the second place.

Three groups of causes of death were registering in the third place: mortality from respiratory diseases - in Germany, the Czech Republic, Greece, Romania; diseases of the nervous system - in Spain; external causes of mortality - in Austria.

Not only the values of the coefficients for the causes of death, but also the size and dynamics of the share of the causes of death in the structure of mortality are of great importance for the assessment of population mortality.

In the studied countries, there is a decrease in the standardized mortality rate from diseases of the circulatory system; the rate of loss varies from 25.0 to 63.7%, on average - 54.7%. The rate of decline in the countries of the European Union in general is 57.8%.

Against the background of the general tendency to decrease the standardized mortality rate from diseases of the circulatory system in groups of countries, the mortality rate and the rate of decline have their own characteristics.

In countries with a very high HDI, mortality rates are consistently low and do not exceed the average indicators of the European Union countries. However, the rates of losses are higher than average and amount to 58.6%. In countries with a high and medium HDI level, the coefficients are higher than the average indicators of the European Union, with the exception of Greece, but the rate of decline is lower and amounts to 51.9%.

The maximum mortality rate from diseases of the circulatory system was registering in Bulgaria (518.9), the minimum - in Spain (106.3 per 100,000 population). The mortality rate in the countries of the European Union is 167.2 per 100,000 population.

In 2023, compared to 1990, there was a pronounced tendency to decrease the share of cardiovascular diseases in the mortality structure of all EU countries, on average, from 52.4 to 38%.

One of the most important indicators in demography is the infant mortality rate, which takes into account the mortality of infants under the age of one. We analyzed child mortality rates in EU countries for the period 2013-2023, calculated child mortality rates in the EU countries in general and in each of them in particular (Table 5).

Table 5

Infant mortality rate, ‰

Country	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Austria	3.1	3.0	3.1	3.1	2.9	2.7	2.9	3.1	2.7	2.4	2.4
Belgium	3.5	3.4	3.3	3.2	3.6	3.8	3.7	3.3	2.9	2.9	2.9
Bulgaria	7.3	7.6	6.6	6.5	6.4	5.8	5.6	5.1	5.6	4.8	4.9
Greece	3.7	3.7	4.0	4.2	3.5	3.5	3.7	3.2	3.5	3.0	3.1
Denmark	3.5	4.0	3.7	3.1	3.8	3.7	3.0	3.2	3.1	3.3	3.1
Estonia	2.1	2.7	2.5	2.3	2.3	1.6	1.6	1.4	2.2	2.2	2.1
Ireland	3.6	3.3	3.4	3.0	3.0	2.9	2.8	3.0	3.2	3.2	3.2
Spain	2.7	2.8	2.7	2.7	2.7	2.7	2.6	2.6	2.5	2.6	2.5
Italy	2.9	2.8	2.9	2.8	2.7	2.8	2.4	2.4	2.3	2.3	2.3
Cyprus	1.6	2.1	2.7	2.6	1.3	2.4	2.6	2.1	2.7	3.1	3.1
Latvia	4.4	3.8	4.1	3.7	4.1	3.2	3.4	3.5	2.7	2.4	2.5
Lithuania	3.7	3.9	4.2	4.5	3.0	3.4	3.3	2.8	3.1	3.0	3.1
Luxembourg	3.9	2.8	2.8	3.8	3.2	4.3	4.7	4.5	3.1	3.5	3.4
Malta	6.7	5.0	5.8	7.4	6.7	5.6	6.7	3.9	3.9	5.3	4.7
Netherlands	3.8	3.6	3.3	3.5	3.6	3.5	3.6	3.8	3.3	3.2	3.1
Germany	3.3	3.2	3.3	3.4	3.3	3.2	3.2	3.1	3.0	3.2	3.1
Poland	4.6	4.2	4.0	4.0	4.0	3.8	3.8	3.6	3.9	3.8	3.7
Portugal	2.9	2.9	2.9	3.2	2.7	3.3	2.8	2.4	2.4	2.6	2.5
Romania	8.9	8.2	7.5	6.8	6.5	6.0	5.8	5.6	5.2	5.7	5.6
Slovakia	5.5	5.8	5.1	5.4	4.5	5.0	5.1	5.1	4.9	5.4	5.4
Slovenia	2.9	1.8	1.6	2.0	2.1	1.7	2.1	2.2	1.8	2.5	2.2
Hungary	5.0	4.5	4.2	3.9	3.5	3.3	3.6	3.4	3.3	3.6	3.2
Finland	1.8	2.2	1.7	1.9	2.0	2.1	2.1	1.8	1.8	2.0	1.9
France	3.6	3.5	3.7	3.7	3.9	3.8	3.8	3.6	3.7	4.0	4.1
Croatia	4.1	5.0	4.1	4.3	4.0	4.2	4.0	4.0	3.8	4.1	4.0
Czech Republic	2.5	2.4	2.5	2.8	2.7	2.6	2.6	2.3	2.2	2.3	2.1
Sweden	2.7	2.2	2.5	2.5	2.4	2.0	2.1	2.4	1.8	2.2	2.0
EU-27**	3.7	3.6	3.6	3.6	3.5	3.4	3.4	3.3	3.2	3.3	3.2

**calculated by the authors based on Eurostat data*

***calculation for the current composition of EU-27 countries (updated composition from 2020)*

The analysis of Table 5 and Fig. 6 makes it possible to state that the average indicator of the child mortality rate has decreased from 3.7‰ in 2013 to 3.2‰ in 2023.

The maximum infant mortality rates in 2023 were reordering in Romania (5.6‰) and Slovakia (5.4‰). Bulgaria, Malta, France and Croatia were also note for their high rates, where the infant mortality rate was over 4.0‰.

Finland (1.9‰), Sweden (2.0‰) and Croatia (2.1‰) demonstrate the minimum values of the child mortality rate today.

In the period from 2013 to 2023, the infant mortality rate decreased in all EU countries, with the exception of Cyprus and France, where these rates, on the contrary, increased.

The greatest rate of decrease in the infant mortality rate during the studied period is observe in Romania, Bulgaria and Hungary (by approximately 2‰ in each country).

It is interesting to compare the indicators of child mortality in modern EU countries with the corresponding data for 1965. According to Eurostat, the infant mortality rate in the EU countries decreased from 28.6 cases per 1,000 newborns in 1965 to 4.7 cases in 2006.

The most noticeable decline in the infant mortality rate from 1965 to 2023 was note in Portugal (from 64.9 cases per 1000 newborns to 2.5), Poland (from 41.6 cases to 6), Hungary

(from 38.8 cases to 3.2) and Romania (from 44.1 cases to 5.6).

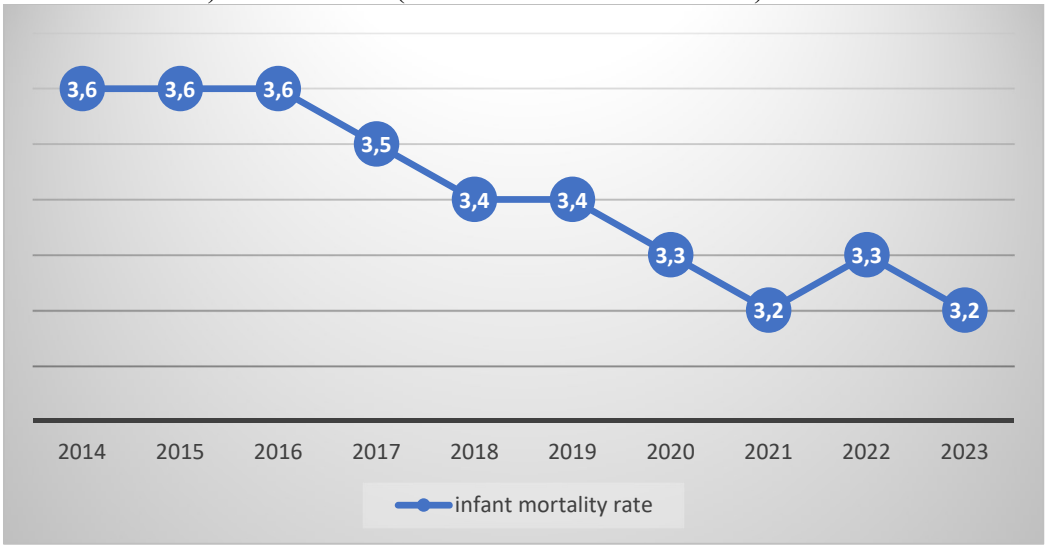

Fig 2. Changes in the infant mortality rate in the EU-27 countries in the period from 2013 to 2023 (built by the authors based on indicators [8])

A significant decrease in the child mortality rate - several times in the period from the middle of the 20th century to now - indicates an increase in the level and quality of the population living in the EU countries, a good level of medical care and the active spread of a healthy lifestyle.

Average life expectancy. An analysis of life expectancy indicators for the period 2014-2023 shows an increase for the EU-27 from 80.7 years in 2014 to 81.5 years in 2023. A significant increase in life expectancy in the study region has occurred since the 1960s. During this time, life expectancy increased by an average of two years per decade, but in 2020, this figure fell in 22 of the 27 countries. The biggest drops were in Spain (-1.6 years), Bulgaria (-1.5 years), Lithuania, Poland, and Romania (-1.4 years each).

It also turned out that life expectancy decreased among the male population. In Bulgaria, the figure decreased by 1.7 years, in Latvia and Poland by a year and a half, and in Spain and Romania by 1.4 years.

However, data for 2023 indicate a resumption of the upward trend in life expectancy in all EU-27 countries, except Cyprus, which showed a 0.7-year decline in life expectancy. Compared to 2020, all countries in this group experienced an increase in life expectancy among both men and women.

In general, the leaders in life expectancy among the countries of the European Union today remaining Spain (84.0 years), Italy (83.8 years), Malta (83.6 years), Luxembourg (83.4 years), Sweden (83.4 years) and France (83.1 years). It should be note that these countries have maintained their leading positions in terms of life expectancy for the last ten years [8].

Among the countries with the lowest life expectancy, it is worth mentioning: Bulgaria (75.8 years) and Latvia (75.9 years). Compared to 2014, life expectancy in both of these countries increased slightly (by approximately 1.4 years), but they remain outsiders in the group of countries under study.

A separate group consists of countries in which life expectancy has practically not changed over the last decade. Among them: Austria, Greece, the Netherlands, Germany and France. In these countries, the increase in the duration of the population was insignificant - up to 0.3 years during the studied period.

The greatest increase in the average life expectancy is note in Lithuania (by 2.6 years). In the vast majority of countries, the increase in average life expectancy over the last ten years was from 1.0 to 1.4 years. However, along with this, a group of countries stands out, where the growth of this indicator was from 0.1 to 0.9 years. Among them: Estonia, Ireland, Spain, Italy, the Netherlands, Poland, Portugal, Slovenia, Hungary, Finland, France and Croatia.

The analysis of demographic indicators provides grounds for distinguishing four groups of countries in the EU structure, which are clearly distinguishing by life expectancy parameters:

1) Countries with the lowest life expectancy - Bulgaria, Latvia, Lithuania, Romania, Hungary;

2) Countries with low life expectancy indicators, which, however, have a growing tendency - Slovakia, Croatia, the Czech Republic, Poland;

3) Countries with high life expectancy rates - Austria, Belgium, Finland, Portugal, Germany, the Netherlands, Cyprus, Ireland, Denmark, Greece;

4) Countries with the highest life expectan-

cy rates - Sweden, France, Malta, Luxembourg, Italy, Spain.

The fourth group includes countries in which life expectancy has traditionally remained the highest over the past two decades.

Differences in the life expectancy of men and women are observe in all EU countries. On average, women in the studied countries live 5.3 years longer than men do. Together with the general indicator of average life expectancy, its value for the male and female population of the EU-27 increased. Thus, the average life expectancy of men increased from 77.9 years in 2014 to 78.9 in 2023, i.e. by 1 year. While the average life expectancy of women increased by 0.5 years.

The biggest difference between the life expectancy of men and women today is observed in Latvia (9.9 years), Lithuania (9.2 years), Estonia (9.0 years), Bulgaria (7.6 years), Poland (7.6 years), Romania (7.6 years), Hungary (6.5 years), which is significantly higher than the EU-27 average (5.3 years).

The smallest difference between the average life expectancy of men and women is observe in Cyprus (women live on average 0.4 years longer). In Denmark, the Netherlands, Germany, France, women live on average 3-3.5 years longer than men do. In all other EU countries, the disparity in the life expectancy of representatives of both sexes approaches the average indicator in the EU-27.

Conclusions. Having analyzed the situation in all 27 EU countries, we can draw certain conclusions about the demographic development of Europe: the EU is experiencing a serious demographic crisis of population aging. General trends indicate an increase in the share of the older population, while the category of children is not growing. In addition, this indicates an increase in the population dependency ratio in the future. In addition, the birth rate is very close to or below the death rate.

If we consider the shape of the sex-age pyramids of the population of the EU countries, then their shape will have a narrowed shape, which indicates a narrowed type of population reproduction.

The general pyramid for the EU as a whole has the shape of a tapered pyramid, which is characteristic of highly developed countries with high levels of education, easy access to birth control and adequate health care.

All EU countries can be divide into four groups, depending on the demographic situation:

1) The first group consists of countries with the least favorable demographic structure. Negative demographic trends here have been going on for several decades. The demographic situation can be calleting critical. This includes Bulgaria and Germany.

2) The second group of countries has the same negative trends, but not as serious. The negative demographic trends here, which are in the first group, are characterize by a long duration. This group includes most EU countries: Austria, Croatia, Czech Republic, Estonia, Greece, Hungary, Italy, Latvia, Lithuania, Poland, Portugal, Romania, Slovakia, Slovenia and Spain.

3) The third group consists of countries with a relatively good demographic situation, or countries that are just beginning to suffer from negative demographic trends with the potential to take measures to correct the situation. This group includes seven countries: Belgium, Denmark, Finland, France, Malta, the Netherlands and Sweden.

4) The fourth group is small and includes EU countries that demonstrate positive demographic trends - a higher percentage of the young population and a high birth rate. These are Cyprus, Ireland and Luxembourg.

Further studies of the demographic situation in the EU countries should be amending at a detailed forecast of the demographic situation in the coming years and at an analysis of the effectiveness of the demographic policy of the countries of the region.

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Анотація:

Леся ЗАСТАВЕЦЬКА, Тарас ЗАСТАВЕЦЬКИЙ, Ярослав МАРИНЯК, Надія СТЕЦЬКО, Богдан СЛОБОДЕНЮК. АНАЛІЗ ДЕМОГРАФІЧНОЇ СИТУАЦІЇ В КРАЇНАХ ЄВРОСОЮЗУ

У статті проаналізовано сучасну демографічну ситуацію в країнах ЄС. Автори звертають особливу увагу на зміни в чисельності населення за період 2011-2023 рр., аналізують показники народжуваності, смертності та середньої очікуваної тривалості життя в ЄС загалом та в окремих його країнах зокрема.

Докладне дослідження демографічної ситуації в регіоні дозволило авторам здійснити групування країн ЄС за подібністю демографічних показників та їх тенденціями в сучасний період. Першу групу складають країни з найменш сприятливою демографічною структурою. Негативні демографічні тенденції тут тривають кілька десятиліть. Демографічну ситуацію можна назвати критичною. Сюди належать Болгарія та Німеччина. Друга група країн має ті ж негативні тенденції, але не настільки серйозні. Негативні демографічні тенденції тут також, які в першій групі, характеризуються довгою тривалістю. До цієї групи входить більшість країн ЄС: Австрія, Хорватія, Чехія, Естонія, Греція, Угорщина, Італія, Латвія, Литва, Польща, Португалія, Румунія, Словаччина, Словенія та Іспанія. Третю групу складають країни з відносно хорошою демографічною ситуацією, або країни, які тільки починають страждати від негативних демографічних тенденцій з потенціалом щодо вжиття заходів для виправлення ситуації. В цю групу входять 7 країн: Бельгія, Данія, Фінляндія, Франція, Мальта, Нідерланди, Швеція. Четверта група невелика і охоплює країни ЄС, які демонструють позитивні демографічні тенденції – вищий відсоток молодого населення та високий рівень народжуваності. Це Кіпр, Ірландія та Люксембург.

Аналіз показників народжуваності в країнах Європейського Союзу в сучасний період дозволяє стверджувати про тенденцію до зниження народжуваності стала виявлятися після кризи 2008 року, коли в ЄС народилося 4,68 млн. осіб. До числа країн, у яких відбулося значне збільшення населення належать також Австрія, Бельгія, Данія, Естонія, Нідерланди, Німеччина, Словенія, Франція, Фінляндія. До групи країн, де простежуються незначні зміни в чисельності населення, які не впливають на загальну демографічну ситуацію, належать Румунія та Словаччина. Демографічні проблеми в ЄС регулярно відображаються в аналітичних звітах Eurostat. Згідно з даними цього статистичного агентства, опублікованими наприкінці 2023 року, 75.7% європейських домогосподарств не мають дітей. Це свідчить про те, що депопуляція та зменшення населення в найближчі десятиліття практично неминучі. За обережними прогнозами Eurostat, до 2100 року населення Євросоюзу зменшиться на 6%.

Показники смертності в країнах все ще перевищують показники народжуваності, таким чином формується від'ємний природний приріст та не забезпечується природне відтворення населення у повній мірі. За показниками коефіцієнта смертності країни Європейського Союзу можна поділити на три категорії: 1) з високими показниками коефіцієнта смертності; 2) з низькими показниками коефіцієнта смертності; 3) з коефіцієнтами смертності, близькими до середньостатистичних у ЄС.

У всіх країнах ЄС спостерігаються відмінності в тривалості життя чоловіків та жінок. У середньому жінки в досліджуваних країнах живуть на 5.3 роки більше, ніж чоловіки. Разом із загальним показником середньої тривалості життя, збільшились його значення для чоловічого і жіночого населення ЄС-27.

Подальші дослідження демографічної ситуації в країнах ЄС повинні бути спрямовані на докладне прогнозування демографічної ситуації в наступні роки та на аналіз дієвості демографічної політики країн регіону.

Ключові слова: демографія, населення, ЄС, народжуваність, смертність, фертильність.

Надійшла 23.10.2024 р.