Population projections at regional level

Statistics Explained

Data extracted in March 2021

This article describes the results of the latest population projections of regional demographic patterns across 31 countries (the 27 European Union (EU) Member States and the four European Free Trade Association (EFTA) countries). It presents a concise summary of the results at regional NUTS level 3 from the Eurostat Population Projections 2019-based — EUROPO2019.

These regional population projections are based on population and vital events data up to 2018 corresponding to NUTS 2016 classification, which divides the economic territories of the 31 countries in 1216 geographical statistical units at NUTS level 3. Although these projections cover a time horizon that reaches the end of the century, the results presented in this article refer to the year 2050 and to the regional level only.

For a presentation of the EUROPOP2019 data at national level, please refer to the article on " Population projections in the EU ". For the sake of simplicity and unless otherwise specified, "EU+" is the EU-27 plus the four EFTA Member States (Iceland, Liechtenstein, Norway, and Switzerland).

The regional projections should be interpreted as a breakdown of the broader national projections consistent with the overall assumption of partial demographic convergence, rather than as an independent set of projections. In fact, the methodology of the Eurostat population projections is based on the main assumption that socio-economic differences between EU+ countries will fade out in the very long term. Values of major demographic indicators are thus so as to converge across countries in the very long term, but it has not been assumed that full convergence would be achieved, leading to countries equal in their demographic elements. It is rather an assumption of countries moving together and getting – demographically speaking – closer, due to the influence exerted by the (converging) socio-economic drivers.

All the results here presented should be understood as one of the possible outcomes of a hypothetical scenario of partial convergence across regions to the national values, which follow the partial convergence as summarised above. Therefore, each result should be read as preceded by the sentence "*according to a scenario of partial convergence, . . .*"

Projected changes in regional populations

Two-thirds of the regions are projected to have lower populations in 2050 than in 2019

Among the 1216 NUTS level 3 regions for which data are shown in Map 1, 802 are projected to have a lower population in 2050 than in 2019 (as shown by the three shades of blues), while about half that number, 414 regions, are projected to have a higher population (as shown by the three shades of orange).

The regions with the largest population relative decreases are mostly along the eastern EU border, from Finland through the Baltic countries down to Romania and Bulgaria; along the southern continental border, namely

in Greece and southern Italy; and along the south-western continental border, particularly in Portugal and in north-western Spain. The regions with the largest population relative increases are mostly on the north-western part of the European continent, namely in Ireland, Iceland, Sweden and Norway.

Cross-border areas with larger projected population decreases (above 20 %) are noticeable in southern Latvia to northern Lithuania, southern Romania to northern Bulgaria and north-eastern Portugal to north-western Spain.

Within countries, geographic clusters of projected population decline can be seen in Germany (eastern part), Greece (central continental part), Spain (central and north-western part), France (central part), Croatia (eastern part), Italy (southern part and islands), Portugal (eastern part) and Finland (central-eastern part).

In each Member States along the eastern EU border, for at least three-quarters of these regions, the population sizes are projected to decrease by 2050, in most cases by at least 10 %

There is a considerable variation in the projected direction and extent of population change across countries, as shown in Figure 1. In Latvia and Lithuania all the 16 NUTS level 3 regions have a projected population in 2050 smaller than in 2019, most of them by at least 20 %. Bulgaria, Estonia, Romania, Slovenia and Slovakia have only one region with a projected positive population change by 2050. In particular, in Bulgaria and Romania most of the regions are projected to record a population decrease of at least 20 %; in Estonia, the population of all the regions but one are projected to shrink by at least 10 %. The population size in the regions of Slovenia and Slovakia are projected to decrease to a lesser extent, in most of them by less than 10 %. Other countries with a large majority of regions with a projected decrease in population are Croatia, Hungary, Portugal and Finland, each of them having only 2 regions with projected population growth. Czechia, Greece and Poland complement the list of countries where the population is projected to decline in at least three-quarter of their NUTS level 3 regions. All of these countries where in at least 75 % of their NUTS level 3 regions the population sizes are projected to decline by 2050 are located on the eastern side of the EU — except Portugal.

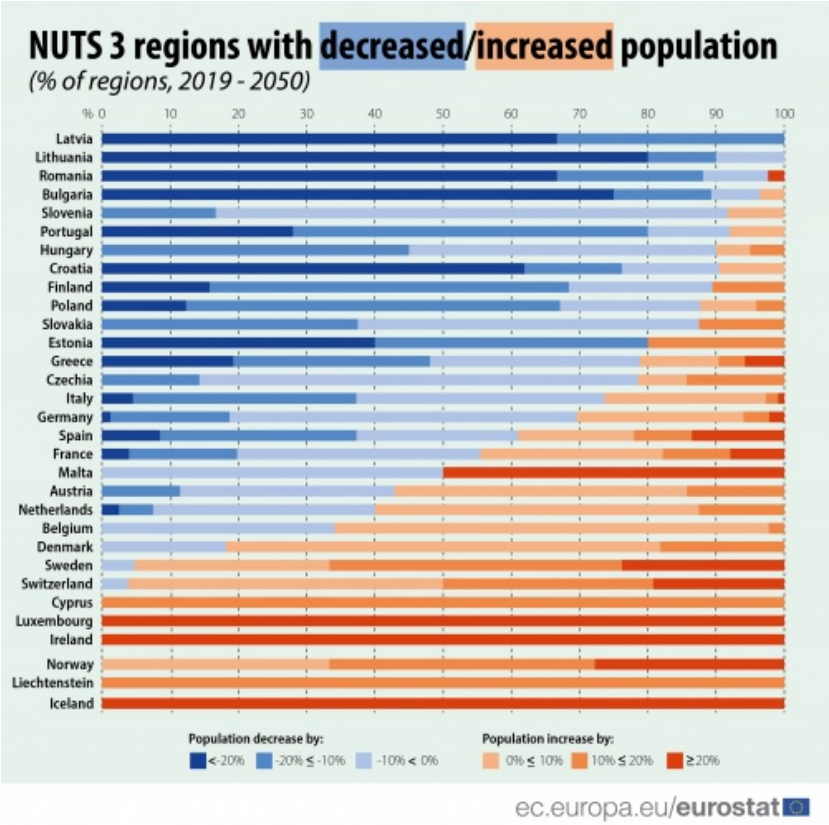

Figure 1: Share of NUTS 3 regions with increased/decreased population, 2019-50 Source: Eurostat, EUROPOP2019, online data code (proj_19rp3)

In 18 out of 28 countries with more than one NUTS 3 region, the population is projected to decrease in the majority of their regions by 2050

There are several other countries, namely those with the largest populations at national level in the EU+, where the number of regions with a projected decrease of the population is larger than those with a projected increase: Germany, Spain, France and Italy. For Belgium, Denmark, Ireland, Austria, Netherlands, Sweden, Iceland, Norway and Switzerland the number of regions with projected population increase by 2050 is larger than the number of regions with population decrease. In particular, in Ireland, Iceland and Norway there are no regions with a projected population decline by 2050; Sweden and Switzerland have only one region with a slightly smaller projected population size; and in Denmark only two out of nine regions have a projected population decrease by 2050, in both cases by less than 10 %.

All capital city regions always have a projected population change that is higher than the national average, either more positive or less negative

The analysis of the variability of projected population change within a country can be narrowed to the capital cities. Between 2019 and 2050, in 22 of the 28 multi-regional countries, the population of the region hosting the capital city is projected to increase. For Höfudborgarsvædi (Iceland), Malta, Dublin (Ireland), Stockholms län (Sweden) and Oslo (Norway) this increased is by more than 25 %. For 12 countries, the capital city region has the highest projected population change between 2019 and 2050 within the regions of the country. This concerns the following countries: Belgium, Estonia, Croatia, Malta, Lithuania, Austria, Portugal, Slovenia, Slovakia, Finland, Sweden and Iceland.

In 2050 almost 90 % of the capital city regions (25) are projected to have a higher population change compared to the national average, with the differences ranging from +23.4 % to -18.9 %. For 10 capital city regions (in Czechia, Germany, Estonia, Croatia, Italy, Finland, Poland, Portugal, Slovenia and Slovakia), the positive projected population change contrasts with the negative national average. Cyprus, Luxembourg and Liechtenstein, which have only one NUTS level 3 region, are all projected to have a higher population in 2050.

Population is projected to increase in almost three out of five urban regions and to decrease

in four out of five rural regions

Another way to analyse the results of these population projections is from the urban-rural perspective , which is applied to NUTS level 3 regions based on specific criteria. In the presentation of the results that follows, it is assumed that the classification of a NUTS 3 region by urban-rural typology does not change over time. Therefore, the projected outcomes should be read as referring to regions classified predominantly urban, intermediate or predominantly rural as of 1 January 2019.

On 1 January 2019, 40.2 % of EU+ population was concentrated in the predominately urban regions (251), 39.2 % was living in the intermediate regions (542) and 20.6 % in the predominately rural regions (463), showing the differences that exist in the territorial distribution of populations across EU+.

Table 1 summarises the number of regions by typology and the magnitude of relative population change between 2019 and 2050 for all 31 countries included in EUROPOP2019 population projections.

In 19 countries, the overall urban population is projected to increase, ranging from +2.3% (Croatia) to +39.0 % (Iceland). A high increase in urban population of more than 20 % is projected in Ireland, Malta, Sweden, Iceland and Norway. For nine countries the increase is projected to be between 10 % and 20 %. Decreased population, ranging from -17.7 % to -1.4 %, is projected in the urban regions of Bulgaria, Greece, Italy, Lithuania, Latvia, Hungary, Poland, Portugal and Romania.

Nearly all EU+ rural regions – 335 out of 423 – are likely to see a decrease in their population by 2050, with more than 25 % in four eastern countries (Lithuania, Latvia, Romania and Bulgaria). Positive population change in the rural regions are projected in western European countries (Ireland, Belgium, Denmark, Sweden, Iceland and Norway) and Switzerland.

Relative population change, by urban-rural typology, between 2019 and 2050
(%)

	Typology			Relative population change between 2019 and 2050 (%)		
Country	URB	INT	RUR	URB	INT	RUR
Belgium	13	19	12	6.6	1.3	1.0
Bulgaria	1	20	7	-1.4	-22.7	-26.8
Czechia	2	8	4	14.3	-8.2	-1.6
Denmark	2	5	4	8.1	5.8	1.2
Germany	95	196	110	2.4	-1.7	-4.9
Estonia	1	1	3	16.7	-41.7	-19.0
Ireland	1	1	6	29.2	30.6	24.5
Greece	8	15	29	-16.7	-4.5	-8.9
Spain	17	32	10	11.9	-5.3	-18.7
France	15	33	53	11.8	5.2	-5.7
Croatia	1	7	13	2.3	-19.4	-23.3
Italy	29	60	21	-3.1	-3.5	-7.5
Cyprus	-	1	-	-	19.4	-
Latvia	1	3	2	-17.7	-29.5	-37.6
Lithuania	1	7	2	-2.7	-30.5	-43.5
Luxembourg	-	1	-	-	25.3	-
Hungary	1	13	6	-1.7	-3.5	-14.1
Malta	2	-	-	35.4	-	-
Netherlands	22	17	1	7.5	-2.2	-6.6
Austria	4	7	24	13.4	5.2	-0.6
Poland	14	27	32	-10.3	-7.4	-13.2
Portugal	3	6	16	-1.6	-10.3	-18.5
Romania	2	12	28	-8.6	-16.7	-25.0
Slovenia	-	3	9	-	3.6	-5.7
Slovakia	1	4	3	17.8	-9.6	-7.6
Finland	1	6	12	13.6	-9.2	-13.9
Sweden	2	14	5	25.1	17.2	10.9
Iceland	1	-	1	39.0	-	33.6
Liechtenstein	1	-	-	13.4	-	-
Norway	2	8	8	28.8	19.5	9.5
Switzerland	8	16	2	19.8	14.5	2.5
Total	**251**	**542**	**423**	**5.2**	**-2.2**	**-9.0**

Note: the abbreviations used for urban-rural typology should be read as follows:
URB - predominantly urban regions
INT - intermediate regions
RUR - predominantly rural regions

Source: Eurostat, EUROPOP2019, online data code (proj_19rdbi3)

Table 1: Relative population change, by urban-rural typology, 2019-50 (%) Source: Eurostat, EUROPOP2019, online data code (proj_19rp3)

Figure 2 shows a similar analysis of the population change by urban-rural typology, between 2019 and 2050. Beside the likely developments presented above, it is interesting to note that for Ireland and Estonia the largest population changes are projected for the intermediate regions (30.6 % and -41.7 % respectively).

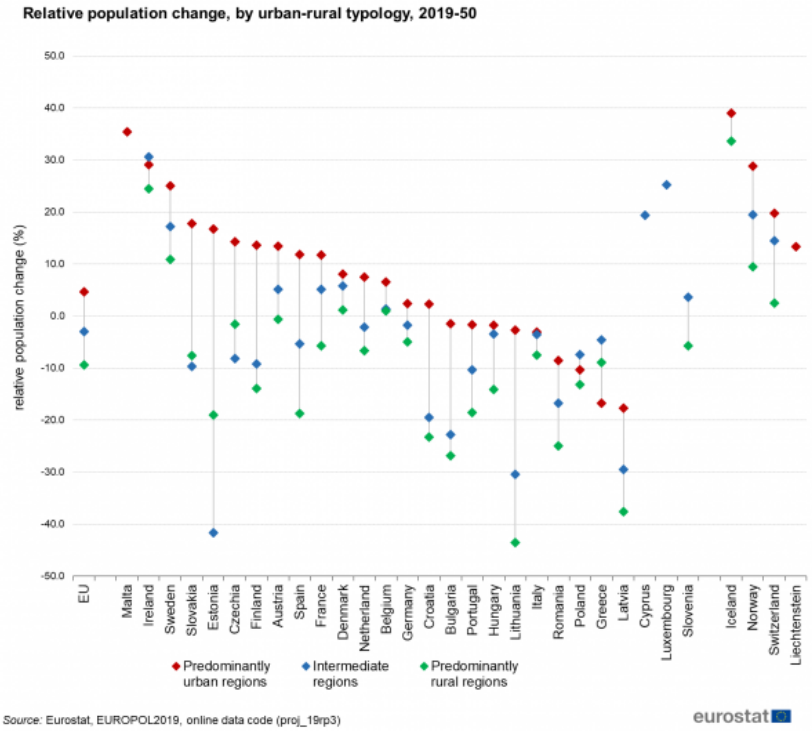

Figure 2: Relative population change, by urban-rural typology, 2019-50 (%) Source: Eurostat, EUROPOP2019, online data code (proj_19rp3)

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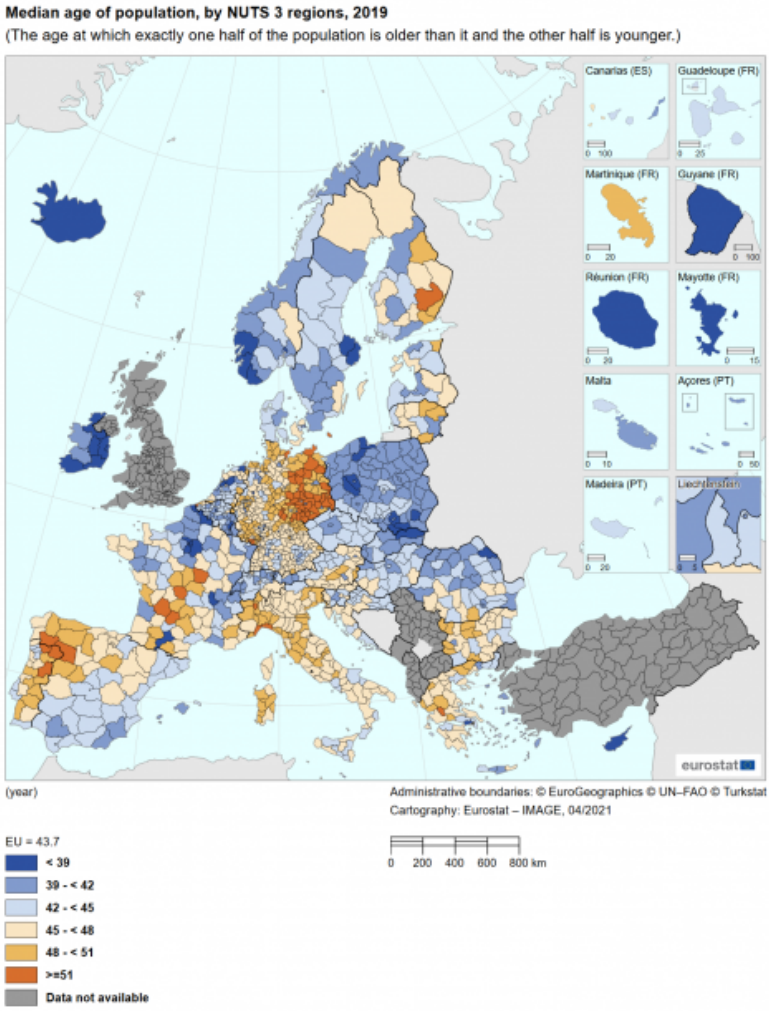
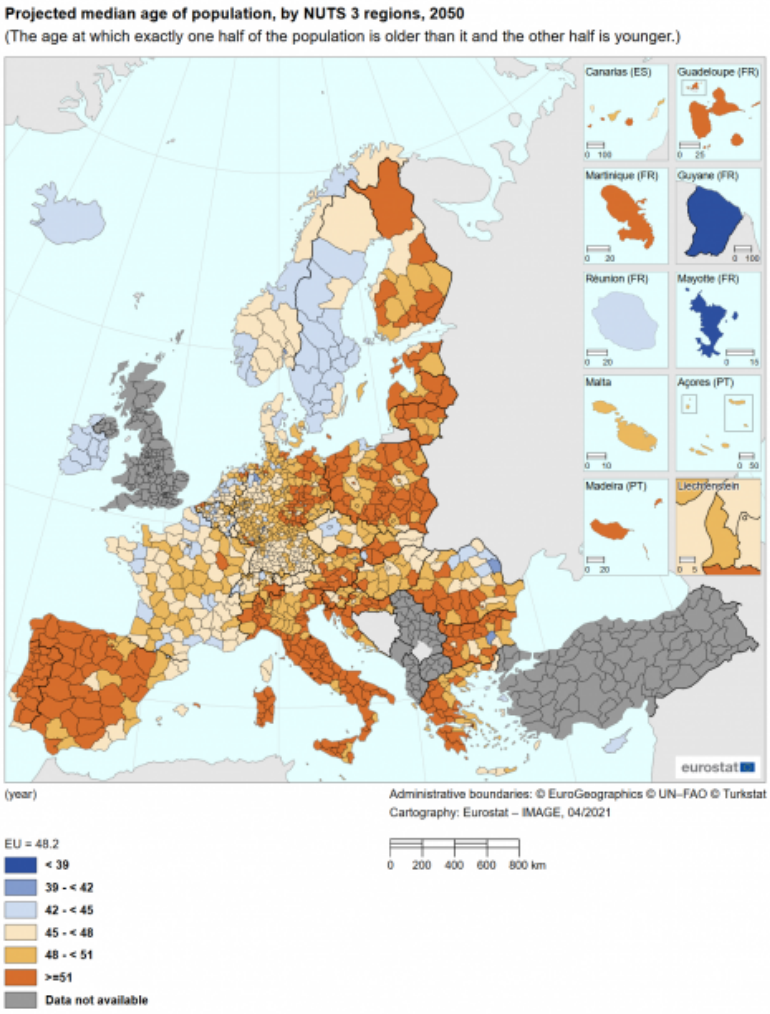
Ageing regional population

Almost 9 regions in 10 are projected to have a higher median age in 2050 than in 2019

Maps 2a and 2b show the median age of the populations in NUTS 3 regions on 1 January 2019 and 2050. The widespread ageing process for that period can be seen from projected increase of the median age by 4 years, from 45.1 years to 49.1 years. Only in 131 of the 1216 regions (11% of the total), is the median age not projected to increase, the majority of them in France and Germany. By 2050, the populations in most of the regions along the eastern and southern EU border are projected to have a median age above or equal to 48.0 years, and in many regions even above or equal to 51.0 years. The ageing process is also visible in north-western Europe, where, the median age is projected to remain below 48.0 years.



Map 2a: Median age of population, by NUTS 3 regions, 2019 (year) Source: Eurostat, EUROPOP2019, online data codes (proj_19rdbi3) and (proj_19ndbi)



Map 2b: Projected median age of population, by NUTS 3 regions, 2050 (year) Source: Eurostat, EUROPOP2019, online data codes (proj_19rdbi3) and (proj_19ndbi)

Older regional populations are projected to age less

The speed of ageing, which is not the same for all regions, is shown in Figure 3. Poland, Spain, the Baltic countries and southern Italy are areas where ageing is projected to be faster, in most regions by at least 8 years by 2050. However, regional populations with a higher median age in 2019 tend to age less quickly, which leads to decreasing differences in median age between regions. Figure 3 displays the regions placed along the horizontal axis from their median age in 2019, and along the vertical axis the change in median age between 2019 and 2050. The pattern of points going from left-top to right-bottom of the plane indicates that regions with higher median age in 2019 have in general a smaller change in the projected median age by 2050.

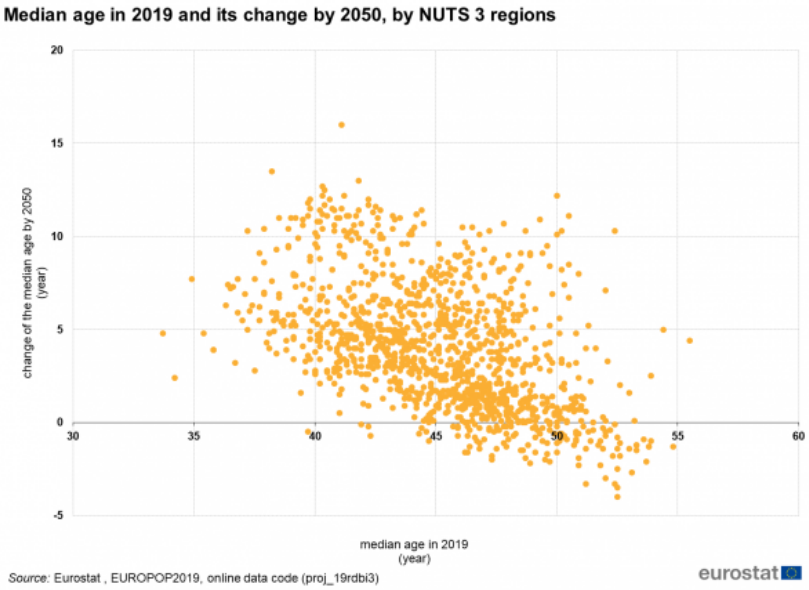
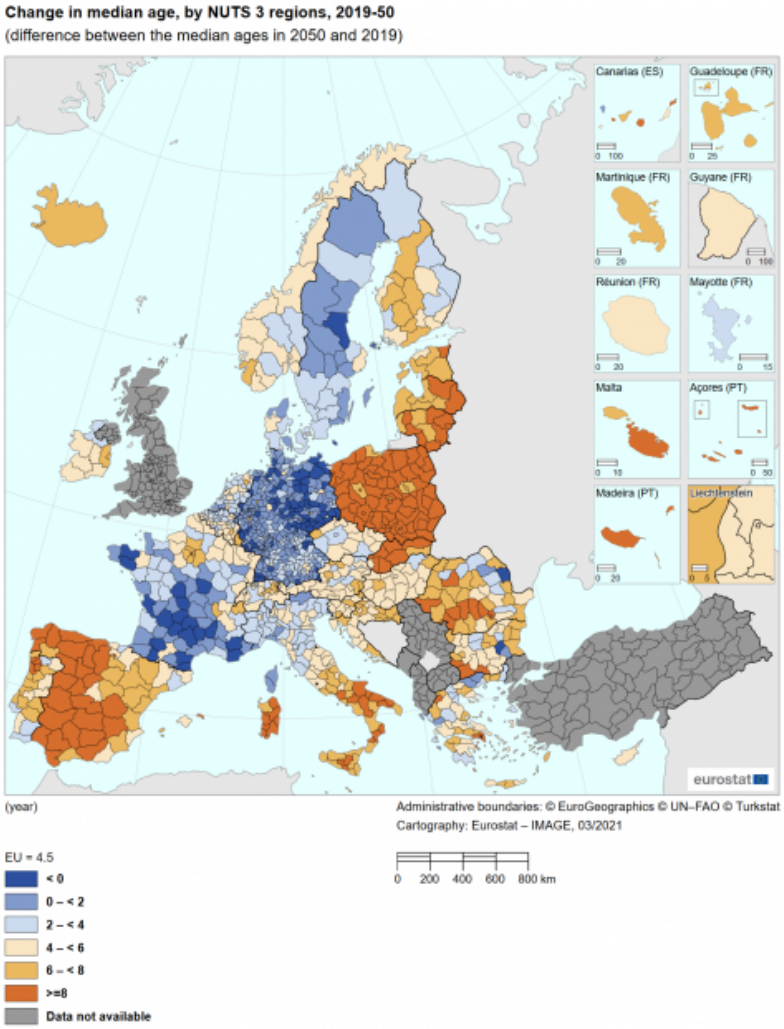


Figure 3: Median age in 2019 and its change by 2050, by NUTS 3 regions (year) Source: Eurostat, EUROPOP2019, online data code (proj_19rdbi3) Note: some regions are not displayed because they are out of the selected frame

Map 3 presents the magnitude of changes in the median age of the populations between 2019 and 2050. The fastest ageing populations are projected to be in the regions located mainly in eastern Europe (Baltic countries, Poland, Slovakia, Romania and Bulgaria) and southern Europe (Italy, Spain and Portugal) and few of them in central Europe (France) (all shown in dark orange); for these 160 (13 %) fast-ageing regions an increase in the median age by at least 8 years between 2019 and 2050 is projected. Younger populations are projected for almost 10 % of regions (119), 8 in 10 regions being in Germany, for which the median age would decrease by 4 years at most. Almost half the regions (592) are projected to have an increase in the median age less or equal to 4.5 years corresponding to EU level.



Map 3: Change in median age, by NUTS 3 regions, 2019-50 (year) Source: Eurostat, EUROPOP2019, online data codes (proj_19rdbi3) and (proj_19ndbi)

More than 9 regions in 10 are projected to have at least a quarter of their population 65 years old and over by 2050

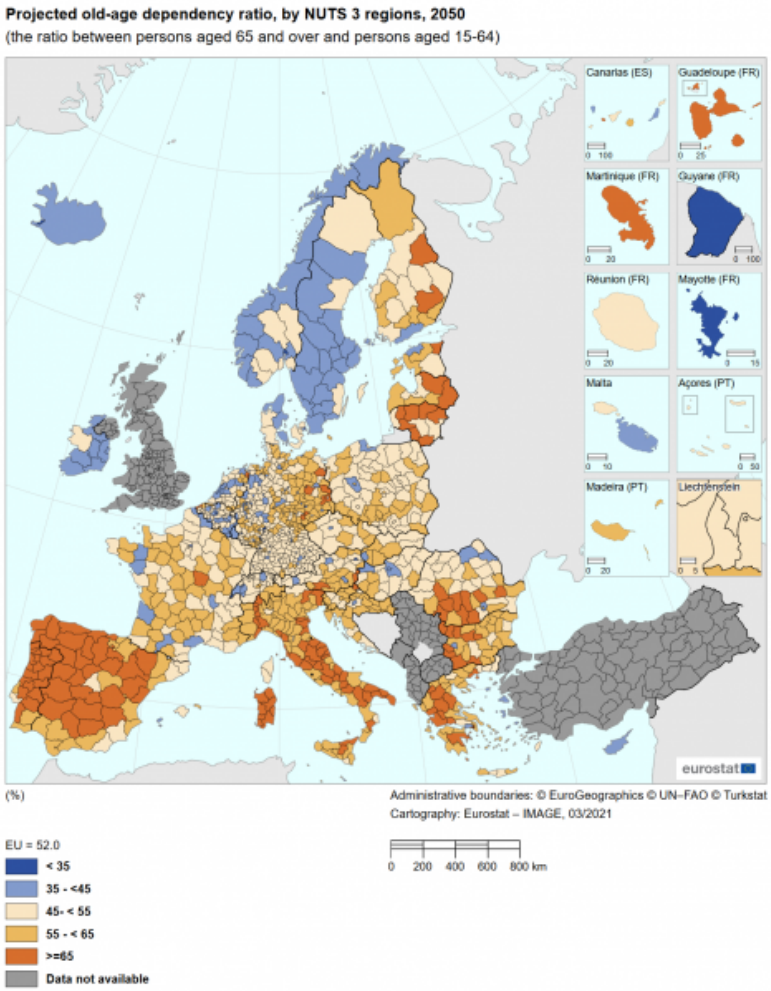
An alternative way to measure population ageing is by the share of selected age groups in the total population, or by age dependency ratios, i.e. ratios of the size of two selected population age groups. The proportion of old people (65 years and over) in the total population is projected to increase on average from 21.4 % to 30.6 %, from 2019 by 2050, thus by 9.2 percentage points (pp). In 2019, almost 16 % of the EU+ regions (190) had at least one quarter of their population aged 65 or more, most of them located in eastern parts of Germany and Finland, southern France, central and northern parts of Italy, and across the country for Bulgaria and Greece; by 2050, this is projected to be the case in 92 % of the regions (1121).

A similar pattern of development is projected for the oldest-old population (aged 80 and over) as a share in the total population. For all 1216 NUTS level 3 regions, the proportion of oldest-old population stood, on average, at 6.2 % in 2019 and is projected to almost double reaching 12.1 % by 2050 (up by +5.9 pp). By 2050 it is projected that in 51 regions the share of the oldest-old in the total population will be at least equal to the highest share in 2019 (16.1 % in Evrytania, Greece), most of them in Germany, Spain and Italy. By 2050, 8 out 10 regions are projected to have 10.0 % or more of persons aged 80 and over.

The old-age dependency ratio is used as an indicator of the extent to which the older population (65 years and over) must be supported by the population of working age (conventionally 15-64 years old). By 2050, the combination of the increased proportion of the projected population aged 65 and over and the decrease in the working age population for the vast majority of the regions is projected to the increase the old age-dependency

ratio, on average, from 33.6 % in 2019 to 54.6 % in 2050, thus an increase of 21.0 pp.

Map 4 shows the projected old-age dependency ratio in 2050 for all 1216 NUTS level 3 regions among which, for two-thirds (812), the dependency ratio is projected to be higher than 0.5, meaning at least one elderly person for each two persons of working age.



Map 4: Projected old-age dependency ratio 2050, by NUTS 3 regions, 2050 (%) Source: Eurostat, EUROPOP2019, online data codes (proj_19rdbi3) and (proj_19ndbi)

On average, one in three persons living in rural areas are likely to be aged 65 and over by 2050

The ageing process can also be examined in relation to the typology of the regions. Here two perspectives can be taken. The first is to look at the distribution of elderly persons across typology of regions; the second is to look at the share of the elderly within each typology of region.

Looking at how the total number of elderly persons is distributed across regions; at the beginning of 2019, there were 93.0 million old people living in EU+. Of these, 40.0 % were living in intermediate regions and 38.2 % in predominantly urban regions, leaving 21.8 % in predominantly rural regions. By 2050, the number of persons aged 65 year and over is projected to increase by 41.4 million, reaching 134.5 million, with 41.0 % living in predominantly urban regions and 39.3% in intermediate regions and the remaining 19.7 % in the predominant rural regions. According to these projections, the share of elderly persons in the EU+ total population aged 65 years and over will increase only in the predominantly urban regions (by 2.8 pp) and decrease in the other two (by -0.7pp in the intermediate regions, and by -2.1pp in the predominantly rural regions).

Proportion of population aged 65 years and over, by urban-rural typology, 2019 and 2050
(%)

	Typology			Proportion of population aged 65 years and over, by region typology, 2019 (%)			Proportion of population aged 65 years and over, by region typology, 2050 (%)			Change in proportion of population aged 65 years and over, by region typology, between 2019 and 2050 (pp)		
Country	URB	INT	RUR	URB	INT	RUR	URB	INT	RUR	URB	INT	RUR
Belgium	13	19	12	18.0	20.3	18.2	24.6	28.7	26.9	6.6	8.4	8.7
Bulgaria	1	20	7	17.5	22.1	23.1	26.1	31.7	34.2	8.6	9.6	11.1
Czechia	2	8	4	18.5	19.9	20.0	25.1	29.6	29.2	6.6	9.7	9.2
Denmark	2	5	4	14.6	20.4	22.2	21.4	26.2	28.1	6.8	5.8	5.9
Germany	95	196	110	20.3	22.3	22.8	26.6	28.9	30.0	6.3	6.6	7.2
Estonia	1	1	3	17.5	24.3	21.0	25.0	40.8	30.9	7.5	16.5	9.9
Ireland	1	1	6	12.7	12.2	15.3	23.4	25.1	25.2	10.7	12.9	9.9
Greece	8	15	29	20.6	21.5	24.5	35.7	31.4	33.1	15.0	10.0	8.6
Spain	17	32	10	18.4	20.5	27.1	31.1	35.4	40.8	12.7	14.9	13.6
France	15	33	53	16.9	19.9	24.4	26.1	27.3	30.8	9.2	7.4	6.4
Croatia	1	7	13	19.2	20.9	20.9	26.6	31.0	31.6	7.4	10.0	10.7
Italy	29	60	21	22.1	23.3	24.0	33.1	34.2	34.5	11.0	10.8	10.5
Cyprus	-	1	-	-	16.1	-	-	22.3	-	-	6.2	-
Latvia	1	3	2	20.4	20.1	20.4	29.0	32.2	33.2	8.6	12.1	12.9
Lithuania	1	7	2	16.9	21.0	20.6	27.2	33.6	37.7	10.3	12.6	17.1
Luxembourg	-	1	-	-	14.4	-	-	25.5	-	-	11.1	-
Hungary	1	13	6	20.5	18.9	19.6	26.4	27.6	29.6	5.9	8.7	10.0
Malta	2	-	-	18.6	-	-	25.4	-	-	6.8	-	-
Netherlands	22	17	1	18.5	20.9	25.6	25.6	28.9	30.7	7.1	7.9	5.1
Austria	4	7	24	17.1	19.4	19.9	23.8	28.2	31.0	6.7	8.8	11.1
Poland	14	27	32	19.7	17.0	16.9	30.4	29.8	30.2	10.7	12.8	13.3
Portugal	3	6	16	21.0	18.6	25.4	31.9	34.4	36.3	10.9	15.8	10.9
Romania	2	12	28	16.1	18.0	19.4	31.4	29.7	31.0	15.2	11.7	11.6
Slovenia	-	3	9	-	19.1	20.4	-	28.9	32.1	-	9.8	11.7
Slovakia	1	4	3	16.8	16.2	15.6	25.7	30.4	29.5	8.9	14.2	13.9
Finland	1	6	12	17.4	23.7	23.8	24.3	30.6	30.3	6.9	6.9	6.5
Sweden	2	14	5	17.4	21.2	23.6	22.4	24.0	25.3	5.1	2.8	1.7
Iceland	1	-	1	13.8	-	14.9	21.4	-	22.8	7.6	-	7.9
Liechtenstein	1	-	-	17.9	-	-	29.6	-	-	11.7	-	-
Norway	2	8	8	14.1	17.4	19.9	21.7	24.9	26.4	7.6	7.5	6.5
Switzerland	8	16	2	18.2	18.5	21.2	25.7	27.0	31.3	7.5	8.5	10.1
Total	**251**	**542**	**423**	**19.2**	**20.6**	**21.4**	**28.3**	**29.9**	**30.8**	**9.1**	**9.3**	**9.3**

Note: the abbreviations used for urban-rural typology should be read as follows:
URB - predominantly urban regions
INT - intermediate regions
RUR - predominantly rural regions

eurostat

Source: Eurostat, EUROPOP2019, online data code (proj_19rdbi3)

Table 2: Proportion of population aged 65 years and over, by urban-rural typology, 2019 and 2050 (%) Source: Eurostat, EUROPOP2019, online data code (proj_19rp3)

Turning now to the analysis of the shares of elderly in the regional populations, Table 2 shows in detail the share of persons aged 65 years and over in the total population by urban-rural typology, for the years 2019 and 2050. On 1 January 2019, the share of old people was highest in the predominantly rural regions for 19 out of the 27 countries that have more than one territorial type including rural (thus Cyprus, Luxembourg, Malta and Liechtenstein excluded). These shares ranged from 14.9 % (Iceland) to 27.1 % (Spain). In the remaining eight countries, the highest shares were seen in the intermediate type regions (Estonia, Lithuania, Croatia and Belgium) and in the predominantly urban regions (Latvia, Poland, Slovakia and Hungary). In 18 countries, at least one in 5 persons aged 65 and over were living in predominantly rural regions: Bulgaria, Czechia, Denmark, Germany, Spain, Estonia, Greece, France, Croatia, Italy, Latvia, Lithuania, the Netherlands, Portugal, Slovenia, Finland, Sweden and Switzerland,

By 2050, the population projections show that the share of elderly population will increase in each region type, for all countries. Predominantly rural regions are likely continue to have the highest shares in 19 countries (representing 300 out of 423 rural regions), with the highest share in Spain (40.8 %). Estonia, Finland, Slovakia, Czechia and Belgium are the five countries for which the highest shares are projected to be in the intermediate regions, whereas for Greece, Poland and Romania the highest shares are projected in the urban regions.

Figure 4 shows the changes in the proportions of the elderly population (aged 65 years and over) in the total population of each urban-rural typology, for all EU+ countries, between 2019 and 2050, expressed in percentage points (pp) for:

- rural regions – the changes are highest for 12 countries (220 out of 423 rural regions) ranging from +7.2 % (Germany) to +17.1 % (Lithuania);
- intermediate regions – the changes are highest for eight countries (77 out of 542 intermediate regions), ranging from +6.2 % (Cyprus) to +16.9 % (Estonia);
- urban regions – the changes are highest for seven countries (63 out of 251 urban regions) ranging from +5.1 % (Sweden) to +15.2 % (Romania).

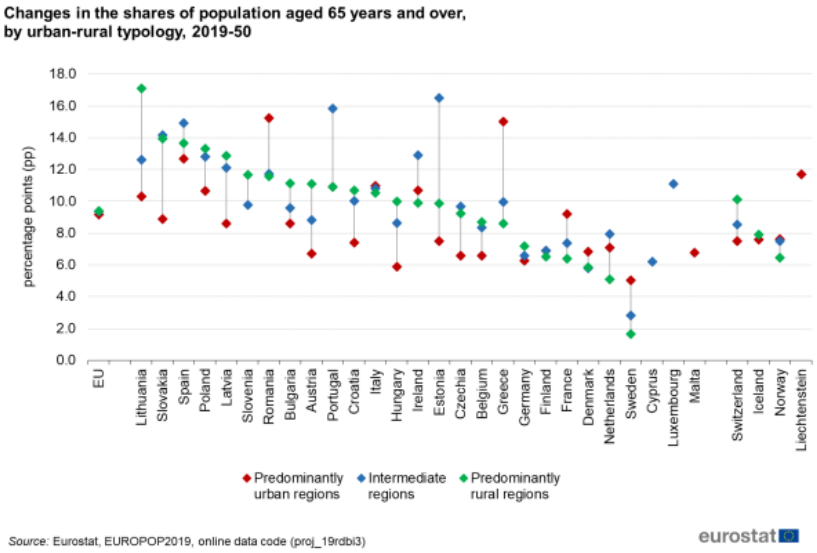


Figure 4: Changes in the shares of population aged 65 years and over, by urban-rural typology, 2019-50 (%) Source: Eurostat, EUROPOP2019, online data code (proj_19rdbi3)

Demographic factors for projected changes in regional populations

Population change is defined as the difference in the size of a population between the beginning and the end of a given time period, here a single calendar year. Population change has two components:

- (N) natural population change (the number of live births minus the number of deaths), i.e. the population change due to vital events; and
- (M) net migration (the number of the immigrants minus the number of emigrants).

The direction of the population change (positive or negative) is the outcome of the developments for each component, therefore all the 1216 NUTS level 3 regions can be divided into four main groups according to the results of combining natural change and net migration.

1. Positive natural change (N+) and positive net migration (M+)
2. Negative natural change (N-) and positive net migration (M+)
3. Negative natural change (N-) and negative net migration (M-)
4. Positive natural change (N+) and negative net migration (M-)

Figure 5 shows the regions on the plane defined by the crude rates of net migration (horizontal axis) and natural change (vertical axes), where the crude rates are computed as the ratio of the sum of events (either migrations or vital events) in the period 2019-2049 on the average of the population at the extremes of the same period, multiplied by 1000. The regions classified in the group 1 above are those in the top-right sector; those of the group 2 are in the bottom-right sector; and so forth, clockwise. It can there be noticed that the majority of the regions has positive net migration and negative natural change.

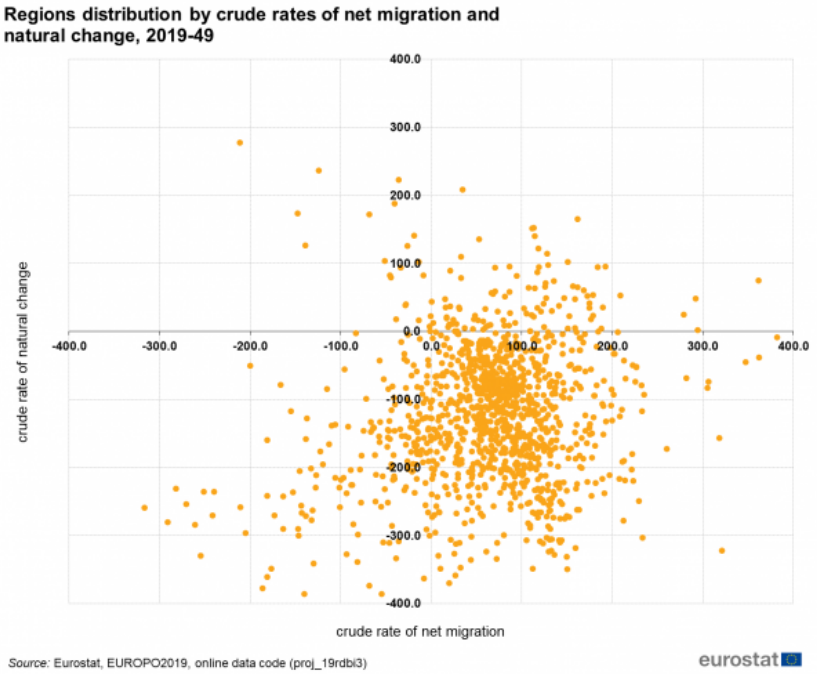


Figure 5: Regions distribution by crude rates of net migration and natural change, 2019-49 Source: Eurostat, EUROPOP2019, online data code (proj_19rp3) Note: some regions not are displayed because the are out of the selected frame

Table 3 reports the number of regions by country and typology of population change, according to the classification reported in the methodological note below. This latter typology identifies four categories of population change: categories A and B indicate population growth, mainly due to natural change and migration respectively; categories C and D indicate population decline, mainly caused by natural change and migration respectively.

Net migration is the main contributor for population growth in 2050 for three out of ten regions

Just over one-third of the regions (414 of a total of 1216 NUTS level 3 regions) is projected to have a higher population in the year 2050 compared with 2019, mainly due to overall positive natural change (group A) or positive net migration (group B).

The population of a small number of regions (42 representing 3.4% of the total) is projected to increase by 2050 due to dominance of the positive natural change (group A). These few regions are geographically spread in nine countries (Iceland, Norway, Denmark, Ireland, Belgium, the Netherlands, Germany, France and Spain). Ireland is the only country for which more than half of its regions (5 out of 8) the population is projected to increase mainly due to natural increase.

Net migration, the other component of population change, is the main contributor for population growth by 2050 for the 372 regions (30.6 % of the total) included in group B. These regions belong to 26 multi-regional countries, with nine of them comprising at least 50 % of their regions: three in the northern part of Europe (Sweden, Denmark and Norway), two in the western part (Belgium and the Netherlands) and two in central Europe (Austria and Switzerland). Net migration is the main contributor to the population growth by 2050 for all regions but one for Sweden, Norway and Switzerland.

Negative natural change is the main cause for the projected population decrease by 2050 for almost two-thirds of the regions

Compared with 2019, for 781 regions, representing almost two-thirds from the total of 1216 NUTS level 3 regions, the population is projected to be smaller in the year 2050 due to the natural decrease (group C); in other words, the net migration, even if positive, would not compensate the excess of deaths over live births. By 2050, ten EU Member States – Baltic countries, eastern and central Europe (Poland, Hungary, Romania, Bulgaria and Slovenia), Finland and Portugal – are likely to have at least 80% of their regions with the population lower due to the negative natural change.

For a small number of regions, 21, spread over eight countries (Lithuania, Romania, Bulgaria, Slovakia, Germany, France, Croatia and Spain), the projected decreased population by 2050 is the result of higher negative net migration, which exceeds the natural change (group D).

Population change by group of demographic balance components, 2019-49

	Group of demographic balance components				Total regions (NUTS 2016)
Country	A	B	C	D	
Belgium	3	26	15	-	44
Bulgaria	-	1	26	1	28
Czechia	-	3	11	-	14
Denmark	1	8	2	-	11
Germany	11	111	277	2	401
Estonia	-	1	4	-	5
Ireland	5	3	-	-	8
Greece	-	11	41	-	52
Spain	1	22	35	1	59
France	16	29	51	5	101
Croatia	-	2	15	4	21
Italy	-	29	81	-	110
Cyprus	-	1	-	-	1
Latvia	-	-	6	-	6
Lithuania	-	-	8	2	10
Luxembourg	-	1	-	-	1
Hungary	-	2	18	-	20
Malta	-	1	1	-	2
Netherlands	3	21	16	-	40
Austria	-	20	15	-	35
Poland	-	9	64	-	73
Portugal	-	2	23	-	25
Romania	-	1	36	5	42
Slovenia	-	1	11	-	12
Slovakia	-	1	6	1	8
Finland	-	2	17	-	19
Sweden	-	20	1	-	21
Iceland	1	1	-	-	2
Liechtenstein	-	1	-	-	1
Norway	1	17	-	-	18
Switzerland	-	25	1	-	26
Total	**42**	**372**	**781**	**21**	**1216**

Note: the groups of demographic balance component should be read as follows:
A - Regions with population growth mainly due to positive natural change
B - Regions with population growth mainly due to positive net migration
C - Regions with population decline mainly due to negative natural change
D - Regions with population decline mainly due to negati

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Source: Eurostat, EUROPOP2019, online data code (proj_

Table 3: Population change by group of demographic balance components, 2019-49 (%) Source: Eurostat, EUROPOP2019, online data code: (proj_19rdbi3)

Population in rural regions is projected to decline in 20 countries

Table 4 shows the demographic balances between 2019 and 2050 and the cumulative developments of the demographic balance components (natural change (N) and net migration (M)) for all 31 countries by urban-rural typology. It can be seen that:

- urban regions – positive population change is projected in 19 countries, with positive cumulative net migration (M+) as the main contributor to the population growth by 2050; most of these countries are located in northern Europe (Denmark, Finland, Sweden, Estonia, Iceland and Norway), the central part (Germany, Austria, Czechia, Slovakia and Switzerland) and western Europe (Ireland, Belgium, Netherlands, Spain and France);

- intermediate regions – by 2050 the population is projected to grow only in 11 countries, although positive cumulative net migration is projected in 22 countries (Cyprus and Luxembourg included);

- rural regions – over the next three decades, negative cumulative natural change is projected for 25 countries; by 2050 the population is projected to decline in 20 countries, while a population increase is projected in seven countries located mainly in north and western Europe: Belgium, Denmark, Ireland, Sweden, Iceland, Norway and Switzerland.

Population change by demograhic balance components, urban-regional typology, 2019-50
(thousand)

	Population 1 January 2019			Natural change (2019-49)			Net migration (2019-49)			Population 1 January 2050		
Country	URB	INT	RUR	URB	INT	RUR	URB	INT	RUR	URB	INT	RUR
Belgium	6 112	4 370	974	135	-300	-51	268	358	61	6 515	4 428	984
Bulgaria	1 328	4 767	905	-114	-1 030	-239	95	-53	-4	1 309	3 684	662
Czechia	2 678	5 715	2 256	-5	-537	-180	389	69	144	3 062	5 248	2 221
Denmark	1 332	2 827	1 647	197	-92	-158	-89	255	178	1 440	2 991	1 667
Germany	36 157	33 871	12 991	-2 212	-3 922	-1 950	3 085	3 336	1 314	37 031	33 285	12 354
Estonia	599	136	589	-6	-42	-86	107	-15	-26	700	79	477
Ireland	1 388	720	2 796	223	127	327	182	94	357	1 792	940	3 481
Greece	4 847	2 523	3 355	-723	-319	-616	-86	205	318	4 038	2 409	3 056
Spain	29 722	15 635	1 580	-1 588	-1 982	-384	5 125	1 152	88	33 259	14 805	1 285
France	23 687	24 545	18 781	2 408	397	-2 004	386	876	935	26 480	25 819	17 712
Croatia	806	1 533	1 737	-63	-273	-324	82	-25	-80	825	1 235	1 333
Italy	28 507	25 890	5 963	-3 731	-4 063	-1 044	2 858	3 147	599	27 634	24 973	5 518
Cyprus	-	876	-	-	61	-	-	110	-	-	1 046	-
Latvia	633	871	416	-96	-164	-86	-16	-93	-70	521	614	260
Lithuania	811	1 751	232	-75	-351	-51	53	-183	-50	789	1 218	131
Luxembourg	-	614	-	-	24	-	-	131	-	-	769	-
Hungary	1 752	6 196	1 824	-169	-779	-302	138	564	45	1 722	5 981	1 567
Malta	494	-	-	-24	-	-	199	-	-	668	-	-
Netherlands	12 826	4 351	105	-6	-332	-17	966	238	10	13 787	4 257	98
Austria	2 842	2 451	3 566	44	-146	-339	338	274	317	3 224	2 578	3 544
Poland	9 623	14 763	13 586	-1 322	-1 794	-1 694	329	706	-96	8 630	13 675	11 796
Portugal	4 823	2 278	3 176	-399	-245	-671	320	11	83	4 743	2 044	2 588
Romania	2 315	6 771	10 329	-301	-965	-1 587	103	-168	-993	2 117	5 637	7 749
Slovenia	-	869	1 212	-	-42	-166	-	73	97	-	900	1 144
Slovakia	660	2 754	2 036	3	-287	-166	114	22	11	777	2 489	1 882
Finland	1 671	1 668	2 179	-2	-267	-333	230	114	31	1 899	1 515	1 877
Sweden	4 054	5 255	921	397	85	-29	620	822	129	5 071	6 161	1 022
Iceland	228	-	129	45	-	14	44	-	29	317	-	172
Liechtenstein	38	-	-	-1	-	-	6	-	-	44	-	-
Norway	1 305	2 655	1 368	199	63	-61	177	454	190	1 681	3 172	1 498
Switzerland	3 935	4 338	272	83	-7	-26	695	638	33	4 712	4 968	279
Total	**185 172**	**180 992**	**94 929**	**-7 104**	**-17 182**	**-12 223**	**16 718**	**13 113**	**3 651**	**194 786**	**176 922**	**86 357**

Note: the abbreviations used for urban-rural typology should be read as follows:
URB - predominantly urban regions
INT - intermediate regions
RUR - predominantly rural regions

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Source: Eurostat, EUROPOP2019, online data code (proj_19rdbi3)

Table 4: Population change by demographic balance components, urban-rural typology, 2019-50 (thousand) Source: Eurostat, EUROPOP2019, online data code: (proj_19rdbi3)

In 8 out of 10 rural regions and in two-third of the intermediate regions, the population is projected to decline

Table 5 below shows the association at NUTS 3 regional level between the degree of urbanization and the typology of population change between 2019 and 2050. Over half (55 %) of the 1216 regions are intermediate or predominantly rural regions that are projected to have a population decline mainly due to negative natural change, i.e. where the deaths are not compensated by the joint effect of births and net migration.

However, almost a quarter of the cases (24%) are intermediate or predominantly urban regions and are projected to have a population growth mainly due to migration, i.e. where migration either compensates a negative natural change or increases a positive one.

The large majority of regions with projected population growth (categories A and B in the table) are either predominantly urban or intermediate. Likewise, the large majority of regions with projected population decline (categories C and D) are either predominantly rural or intermediate. In 8 out of 10 rural regions and in two-third of the intermediate regions, the population is projected to decline; however, in the majority (57 %) of urban regions a population growth is projected.

/ec/prod/app/webroot/home/statistics_explained/images/thu

Table 5: EU+ population change by group of demographic balance components, urban-rural typology, 2019-49 (thousand) Source: Eurostat, EUROPOP2019, online data code: (proj_19rdbi3)

Methodological note

Whether the combined effect of net migration and natural change results in population growth or decline depends upon the relative size of the former components. Each of the four sectors identified above in the Figure 5 can be further split into two equal areas by drawing the diagonals. By doing so, there are eight groups, described moving clockwise from the top right sector in the plot of Figure 5:

1. Positive natural change (N+) and positive net migration (M+):
   a. M+ < N+ : population growth, with positive natural change stronger than positive net migration
   b. M+ > N+ : population growth, with positive net migration stronger than positive natural change
2. Negative natural change (N-) and positive net migration (M+)
   a. M+ > N-: population growth due to positive net migration compensating negative natural change
   b. M+ < N-: population decline due to negative natural change stronger than positive net migration
3. Negative natural change (N-) and negative net migration (M-):
   a. M- < N-: population decline, with negative natural change stronger than negative net migration
   b. M- > N-: population decline, with negative net migration stronger than negative natural change
4. Positive natural change (N+) and negative net migration (M-):
   a. M- > N+: population decline due to negative net migration stronger than positive natural change
   b. M- < N+: population growth due to positive natural change compensating negative net migration

From the perspective of population growth or decline, the regions can then be grouped as follow:

A. Regions with population growth mainly due to positive natural change: former groups 1a and 4b (respectively N+ > M- and N+ > M+)

B. Regions with population growth mainly due to positive net migration: former groups 1b and 2a (respectively N+ < M+ and N- < M+)

C. Regions with population decline mainly due to negative natural change: former groups 2b and 3a (respectively N- > M+ and N- > M-)

D. Regions with population decline mainly due to negative net migration: former groups 3b and 4a (respectively N- < M- and N+ < M-)

Source data for tables and graphs

- EUROPOP2019 population projections regions NUTS 3 level: tables and figures

Data sources

EUROPOP2019 projections at subnational level were produced for regions NUTS level 3, for all EU and EFTA countries, and are consistent with the population projections at national level, using population data on 1 January 2019 as starting point. They are the result from the application of a set of assumptions on future developments for fertility, mortality and migration. The projections should not be considered as forecasts, as they show what would happen to the population structure if the set of assumptions are held constant over the entire time horizon under consideration; in other words, the projections are 'what-if' scenarios that track population developments under a set of assumptions. As these population projections are made over a relatively long time horizon, statements about the likely future developments for the EU and EFTA population should be taken with caution, and interpreted as only one of a range of possible demographic developments.

The EUROPOP2019 population projections at regional level where produced for regions NUTS 3 level using the NUTS 2016 classification.

NUTS

The data presented in this article are based exclusively on the 2016 version of NUTS (the Nomenclature of Territorial Units for Statistics). It covers all 1169 regions classified as NUTS level 3 and the 47 Statistical Regions (SR) agreed between the European Commission and EFTA countries. Statistical regions are defined according to principles similar to those used in the establishment of the NUTS classification.

See also

- Population projections in the EU
- Population statistics at regional level
- Population and population change statistics
- Population structure and ageing

Database

- Population projections (proj) , see:

EUROPOP2019 - Population projections at regional level (2019-2100) (proj_19r)

Population on 1st January by age, sex, type of projection and NUTS 3 region (proj_19rp3)

Assumptions for fertility rates by age, type of projection and NUTS 3 region (proj_19raasfr3)

Assumptions for probability of dying by age, sex, type of projection and NUTS 3 region (proj_19raasmr3)

Assumptions for net migration by age, sex, type of projection and NUTS 3 region (proj_19ranmig3)

Projected life expectancy by age (reached during the year), sex, type of projection and NUTS 3 region (proj_19ralexp3)

Demographic balances and indicators by type of projection and NUTS 3 region (proj_19rdbi3)

Dedicated section

- Population projections
- Population and Demography overview
- Regions

Publications

- Eurostat regional yearbook — 2020 edition

Methodology

- Population projections (ESMS metadata file — proj_esms)

Visualisations

- Eurostat Statistical Atlas
- Regional Statistics Illustrated

External links

- European Commission — The 2021 ageing report
- Report from the European Commission on the impact of demographic change - 2020
- The impact of demographic change in Europe
- Demographic change in the EU - fact sheets
- European Commission - Seventh Report on Economic, Social and Territorial Cohesion

View this article online at ***http://ec.europa.eu/eurostat/statistics-explained/index.php/Statistics_on_regional_population_projections***