



World Population Day, 11 July 2019

- World's population growing at a decelerating rate
- Africa's population may approach Asia's by the end of the century
- The two extremes are ageing Europe and young Africa
- Dependency ratios show different turns in trend over time by continent
- Income inequalities on the increase
- Differences in level of fertility decrease
- Rise in life expectancies shows improvement in life prospects
- The European Union's population grows old
- Different trends in demographic events in European countries
- Natural decrease expected in the European Union as a whole

World's population growing at a decelerating rate

11 July was declared World Population Day by the United Nations (UN) in 1989, since the Earth's population had reached 5 billion on that day two years earlier. The aim of the world day is to draw attention to the extent of population growth and the implied problems.

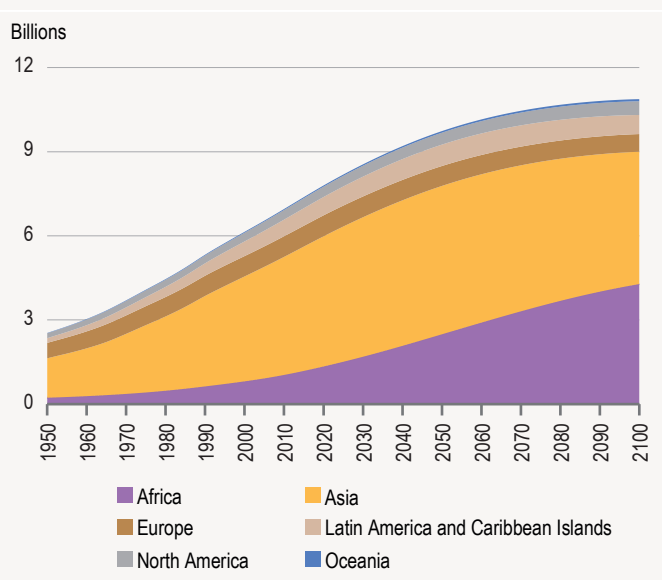
Based on the latest calculations of the UN, our planet's population has since increased by 2.7 billion, and exceeded 7.7 billion on 18 June 2019.¹ 2.5 billion people lived on the Earth back in 1950, however, due to demographic transitions, already more than three times as many nowadays.

The first demographic transition in developed countries took place at the end of the 19th century and at the beginning of the 20th century, and brought about a decrease in mortality and fertility, which had been high until that time. With improving public health conditions, the frequency of deaths started to fall earlier than fertility, therefore, the population number rose at a continuously accelerating pace. The spread of the first demographic transition to developing countries led to an unprecedented, sudden population increase in the world from the middle of the last century. It was followed by the second demographic transition in developed countries from the 1960s–1970s. The fertility rate in these regions did not already reach 2.1 children/woman, the value ensuring the simple reproduction of the population. All this, along with an almost unbroken rise in life expectancy, will result in the Earth's population growing at a decelerating rate in the future.

The rate of increase of the world's population was the highest in the second half of the 1960s and at the beginning of the 1970s, when the population number increased by over 2% a year, lessening from the second half of the 1980s. Today, the Earth's population grows by 1.1% a year. Because of a permanent fall in fertility, a further slowdown is expected: a population increase of around 0.5% is projected for 2050 and of about 0.03% by the end of the century. According to the UN's medium-level projection², presumably 10.9 billion people will live on the Earth in 2100.

Figure 1

Earth's population number by continent



Africa's population may approach Asia's by the end of the century

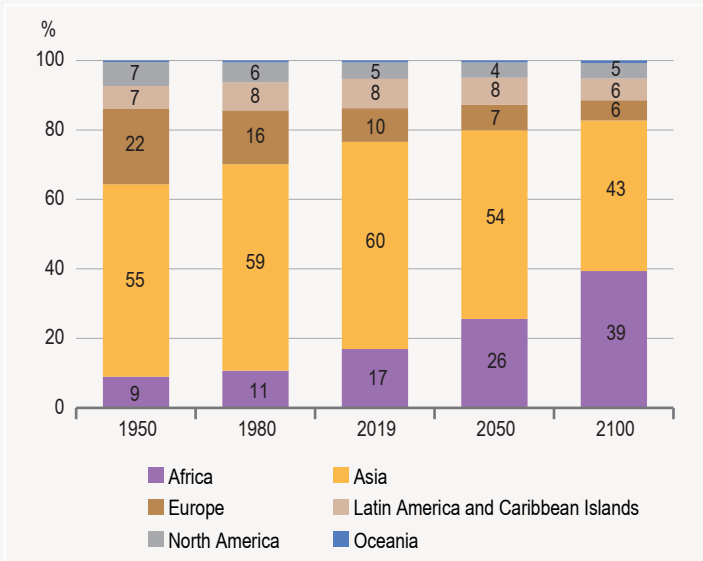
Nowadays, nearly 60% of the world's population, more than 4.6 billion people live in Asia. It is followed in order by Africa (17%, 1.3 billion people), Europe (10%, 747 million people), Latin America and Caribbean Islands (8.0%, 648 million people), North America (5.0%, 366 million people) and at last Oceania, with the smallest population number (0.5%, 42 million people). 19% of the world's population (1.43 billion people) live in China and 18% (1.36 billion people) in India. More people live in each of these two countries than in the three smallest continents altogether.

¹ Source: The 2019 Revision of World Population Prospects, <https://population.un.org/wpp/Download/Standard/Population/>.

² Population projection is the forecast of the number and composition of the population for future dates, which is generally made in more than one variant, based on assuming different future development (high, medium or low) of basic demographic events (fertility, mortality, migration). Detailed world population developments mentioned in the present publication were prepared on the basis of the UN's medium-level model.

Figure 2

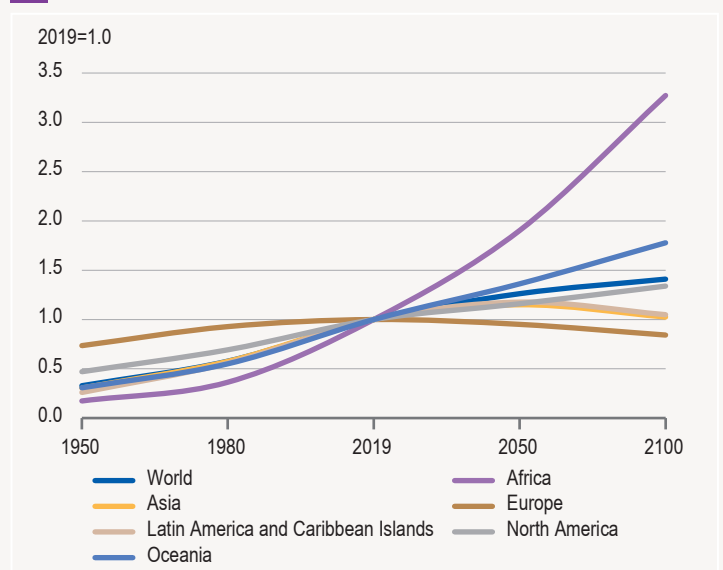
Earth's population distribution by continent



According to the UN's projection, Asia will remain the most populous continent, but its weight is expected to decline in the future, while the proportion of Africa will increase significantly. The growth has already been the highest in the latter continent: the number of its inhabitants has risen 5.7-fold since 1950, its present population number will double by 2053 and will approximate 4.3 billion by the end of the century. The projected 39% share of Africa in the world's population will be hardly below Asia's (43%) by 2100. Europe's weight will permanently decrease: its share of 22% in 1950 to 10% by 2019 and by a further 4 percentage points to 6% until 2100. Not only will the share of the 'old' continent in the world's population lessen but also its population number: by 37 million until 2050 and by a further 80 million in the subsequent fifty years. A decline is expected, too, in the population number of Asia and Latin America and Caribbean Islands in the last fifty years of the century, but Europe is the only continent for which a lower figure is projected than the current value already by 2050.

Figure 3

Earth's population increase by continent



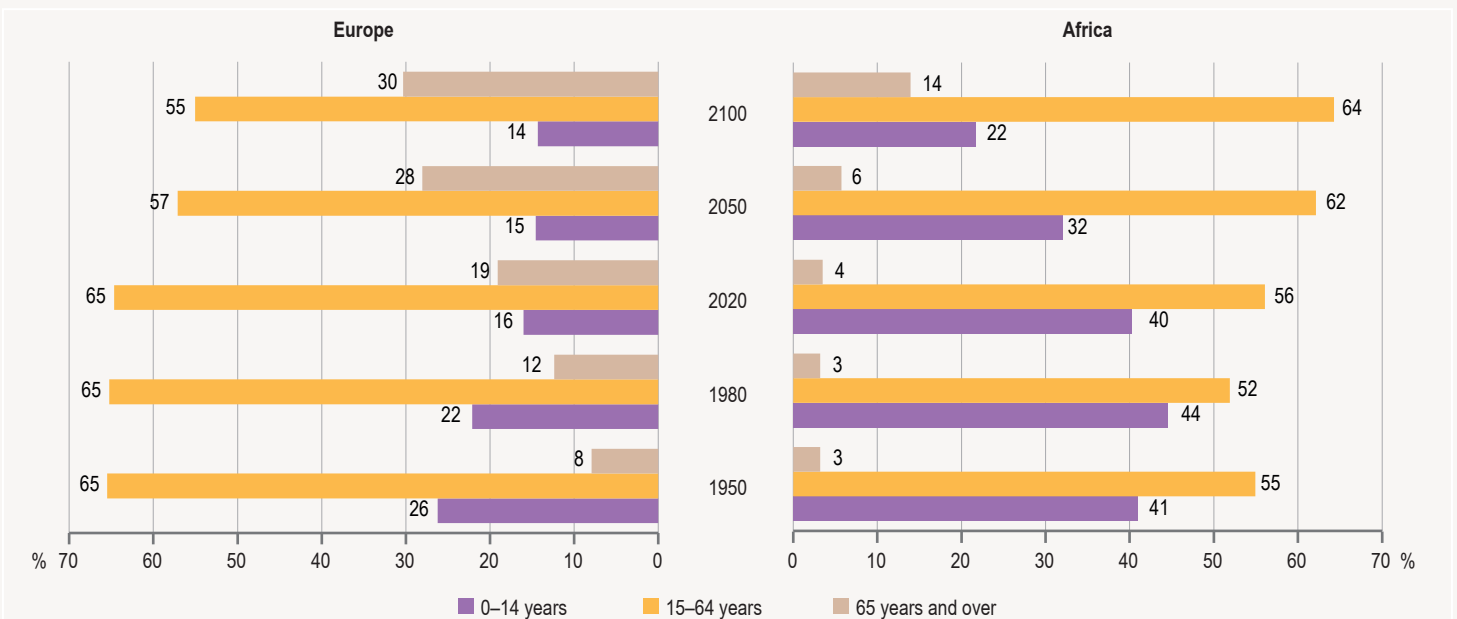
The two extremes are ageing Europe and young Africa

In terms of population development, a substantially growing population number is observed for Africa, while a stagnating and falling one for Europe in the examined period. This is the reason for examining the population of the two continents in detail, by age group.

The proportion of the child-aged (0–14-year-old) population decreased continuously and significantly in Europe from 1950 to date, from 26% to 16%. According to the projections the decline will turn into stagnation until 2100, and the share of the youngest age group in Europe will stabilise around 14%. Roughly 2 in 3 people in Europe belonged to the age group of 15–64-year-olds, i.e. of people of working age, in the period between 1950 and 2020. Following this, the share of this group in the total population is expected to go down to 55% until the end of the century. According to the UN's population projection, the sharp rise in the proportion of the old-aged (65-year-old and older) population will continue in Europe, the some 8% in 1950 is expected to grow more than three-fold, to 30% by 2100.

Distribution of population in Europe and Africa by main age group

Figure 4



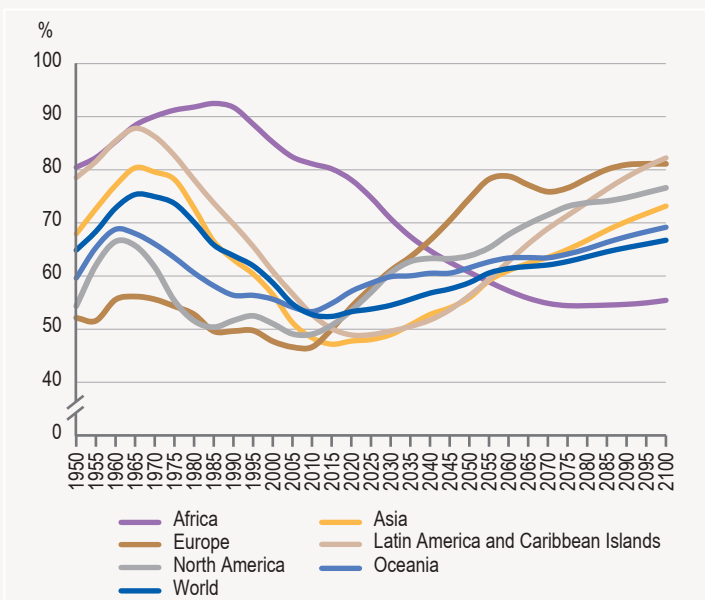
Africa will follow a different path of population development. The rise in the proportion of the age group of 0–14-year-olds there between 1950 and 1980 (from 41% to 44%) stopped, and this proportion will fall to 40% until 2020. According to the projections, the considerable decrease in the share of the child-aged population will go on after this, too, and this share is expected to be around 22% by the end of the century. In parallel, the proportion of people of working age and of those aged 65 years and over will grow evenly until 2100, from the initial 55% to 64% in the case of the former and from 3% to 14% for the latter. All this shows that governments of developed countries have to face low fertility, a decline in the share of the active population of working age, accelerating ageing of the population and problems of sustainability of the different services, while shortage of food, poverty, low level of education, teenage pregnancy, unemployment and the provision of basic health and social services are serious challenges in underdeveloped regions of the world.

Dependency ratios show different turns in trend over time by continent

The total dependency ratio (TDR) expresses the number of inactive people per hundred people of working age, which shows dependency burdens and obligations of the society as a whole in a particular population. The indicator expresses the dependent young (0–14-year-old) and the dependent old-aged (65-year-old and older) population as a percentage of the (15–64-year-old) population of working age. The dependency ratio follows a trend, as determined by demographic transition, in which, as an effect of a decline in child-bearing, the value of the indicator first decreases from the high initial level, then it rises due to longer life expectancy. This latter trend develops especially markedly in developed countries today and poses extremely serious long-term challenges to societies.

Figure 5

Total dependency ratio by continent



Different degrees of disparities from the global trend can be seen for the different continents. In Figure 5, one can follow up the impact of the baby boom following World War II all over the world. The large number of children born in this period entered from dependent status to working age in the 1960s, so the dependency ratio rose until that time, and subsequently

showed a sharply decreasing trend in almost all continents. At the time of the turn in the trend, hundred people of working age had to provide for the most people, nearly 90 in Latin America, 80 in Asia, between 65 and 70 in Oceania and North America and the least, 55 in Europe. Africa was an exception, where these demographic trends emerged with a serious time lag of about three decades, the value of the indicator was the highest there (92%). The declining trend lasted until 2010–2020, when all over the world, except for Africa, hundred people of working age had to provide for the least, roughly about 50 dependents. Depending on the level of development, the increase of the total dependency ratio started first in Europe, North America and Oceania, then in Asia and Latin America, and it will occur the latest in Africa. The reason behind was all over the world a substantial fall in fertility from the 1970s and life expectancies becoming longer to an extent never experienced until then, i.e. ageing societies. These demographic impacts will last affect Africa, where the value of the indicator will start to rise only in the 2070s. By the end of the century, the dependency ratio is expected to be the highest, above 80 in Latin America and Europe, followed – not lagging much behind – by North America and Asia, with values exceeding 70. At last, the number of dependents per hundred people of working age will be the lowest in Oceania and Africa, totalling 69 and 55, respectively.

Income inequalities on the increase

Figure 6 shows which four – high-, upper-middle-, lower-middle- or low- – income categories the World Bank classified countries on the Earth into in 2018.³ The grouping is based on gross national income (GNI) per capita, as calculated by the World Bank.⁴ It is important to note that high-income countries are over-represented in Europe, while low-income ones in Africa, furthermore, that China belongs to the upper-middle- and India to the lower-middle-income category. When examining the population development of countries classified into different income categories, the question arises whether the population of the Earth will have to face increasing inequalities or income convergence in the future. The problem of the estimation is that, on the one hand, it does not take into consideration income inequalities within countries, on the other hand, it considers the classification of countries by income as unchanged in the long term.

In respect of income conditions in the world⁵, 27 in a hundred people lived in high-, 68 in middle- and 5 in low-income countries in 1950. This proportion has changed significantly by now, 16 in a hundred people live in high-, 74 in middle- and 10 in low-income countries according to estimates. The UN’s projection forecasts a growing inequality for the population of the Earth, probably no more than 12 in a hundred people will live in high-, 65 in middle- and much more than earlier on, 23 in low-income countries in 2100.

Table 1

Earth’s population by category of income

| | (millions) | | | | |
|-------------------------------|------------|-------|-------|-------|--------|
| Area | 1950 | 1980 | 2019 | 2050 | 2100 |
| World | 2,536 | 4,458 | 7,713 | 9,735 | 10,875 |
| High-income countries | 695 | 963 | 1,258 | 1,324 | 1,300 |
| Upper-middle-income countries | 939 | 1,731 | 2,639 | 2,800 | 2,381 |
| Lower-middle-income countries | 765 | 1,491 | 3,058 | 4,133 | 4,705 |
| Low-income countries | 137 | 271 | 756 | 1,474 | 2,485 |

³ <https://blogs.worldbank.org/opendata/new-country-classifications-income-level-2018-2019>

⁴ <https://datahelpdesk.worldbank.org/knowledgebase/articles/378832-the-world-bank-atlas-method-detailed-methodology>

⁵ The classification by national income level is based on the World Bank’s GNI per capita in 2018.

Figure 6

World map by category of income of countries, 2018

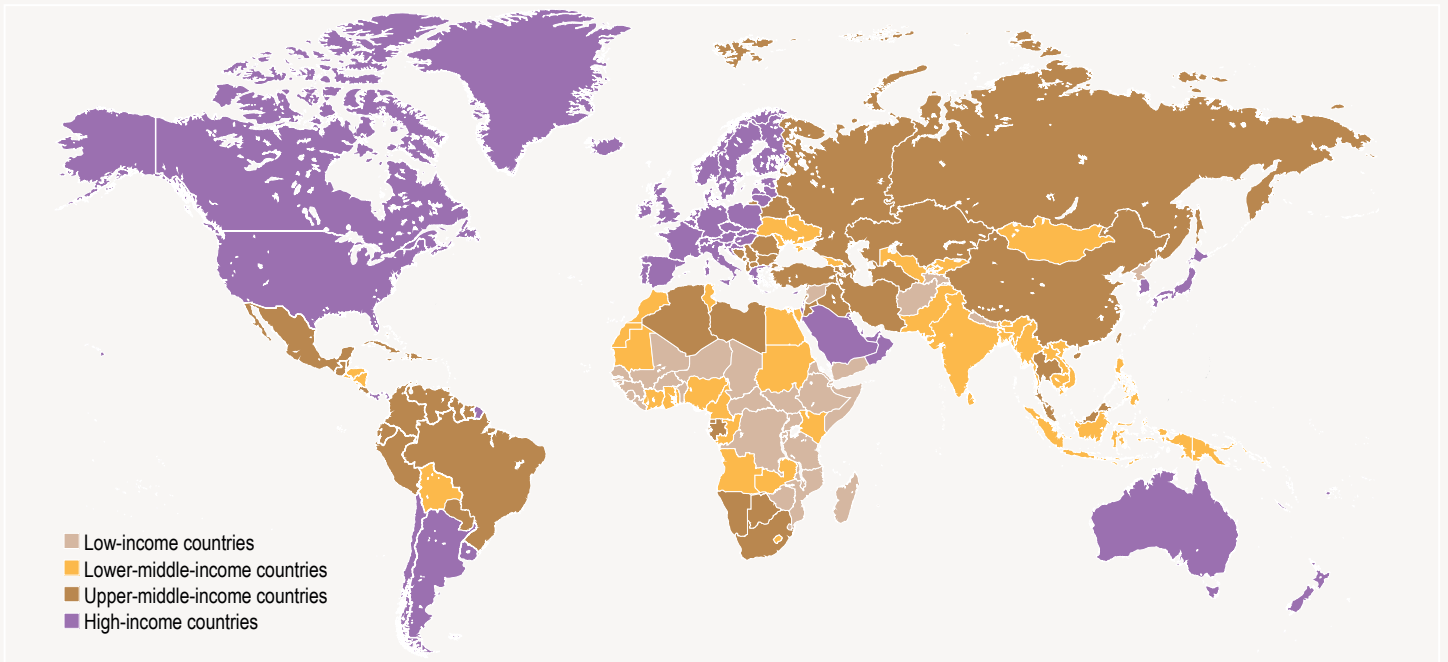
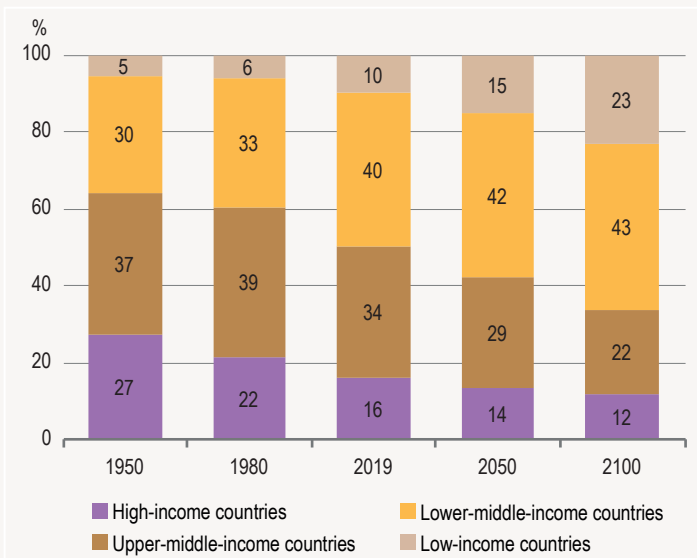


Figure 7

Earth's population distribution by category of income of countries

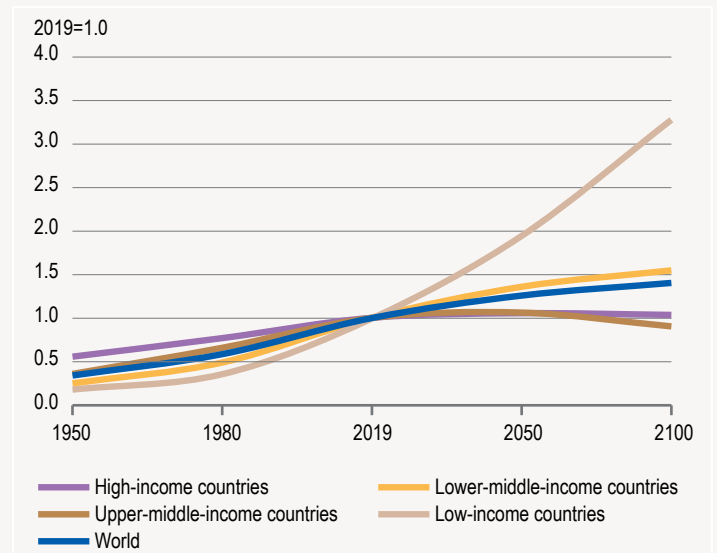


The population of low-income countries will rise more than three-fold, from the current 756 million to nearly 2.5 billion until the end of the 21st century, and their share within the world's total population from 10% to 23%. The number of people living in high-income countries will remain practically unchanged, around 1.2 billion–1.3 billion. At the same time, their share will lessen from 16% to 12%, since other groups of income will include a permanently increasing number of people. The proportion of people belonging to the upper-middle stratum will also decrease during this time, from 34% to 22%. This will be approximately 250 million fewer people and will come to 2.4 billion by the end of the century. Lower-middle-income countries are expected to increase their population over one-and-a-half-fold between 2019 and 2100, from 3 billion to 4.7 billion, in proportional terms from 40% to 43%. In case the income position of countries with more rapidly growing population does not change, mankind will have to face increasing social inequalities

and income differentiation. Today, about the half of the planet's population belongs to the two upper and the other half to the two lower categories. This ratio will change to one-third to two-thirds by the end of the century according to the UN's population projection.

Figure 8

Earth's population increase by category of income of countries



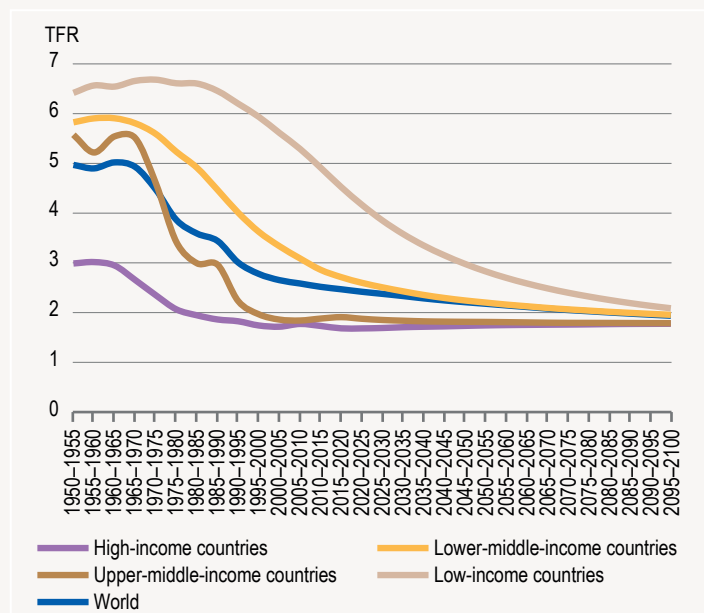
Differences in level of fertility decrease

The higher category of income a country belongs to, the fewer children the women living there give birth to and the sooner the demographic transition takes place. Fertility is measured with total fertility rate (TFR), which is the number of children a woman would give birth to during her lifetime if the willingness to have children in a particular year steadily persisted. Fertility first fell in high-income countries, in the 1960s. They were followed by upper-middle-income countries, where a spectacular decline in child-bearing started in the 1970s. A decrease in fertility started at the same time in the case of lower-middle-category states, but the value of reproduction was higher there all the while than in countries belonging to the group with

one level higher income. The demographic transition began in the poorest states the latest, where a decrease in the very high fertility level of around 6.5 was observed only from the 1980s. Countries belonging to the upper-middle category have caught up with the richest ones by now, their fertility has stabilised below 2.1, the level of reproduction. The value of the indicator of lower-middle-income and the poorest countries is still considerably higher (2.5 and 4.5, respectively) than this, despite a decline being recorded in these two groups, too. The fertility rate will approximate 2 in all categories of income of countries by the end of the century according to the UN's projection.

Figure 9

Total fertility rate by category of income of countries, per woman



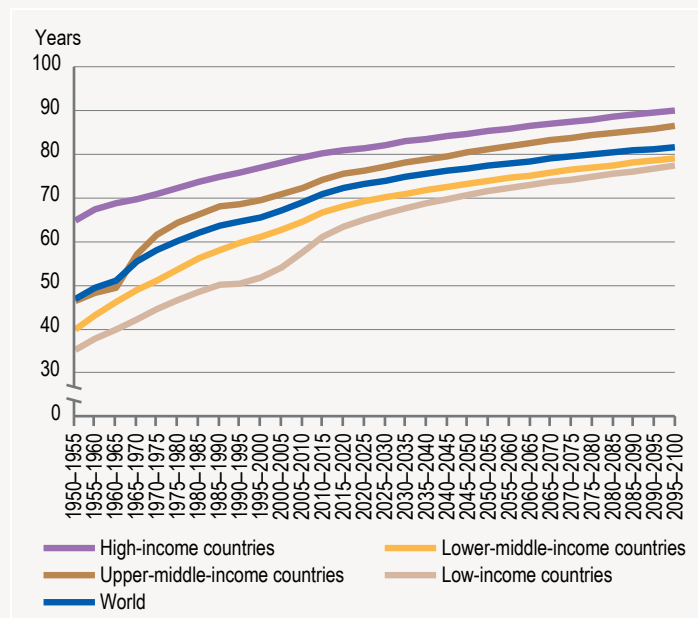
Rise in life expectancies shows improvement in life prospects

The income position of a country is consistent with the length of life of the people living there, a rise in the value of GNI has a positive effect on average life expectancy. Average life expectancy at birth expresses the number of years of lifetime a new-born baby can expect at the mortality rate in a particular year. With the development of medical sciences and with a significant improvement in public health conditions all over the world, life expectancies in the history of mankind have never become longer yet to an extent that was seen between 1950 and 2020, and a further rise can be projected until the end of the century. Life expectancy at birth was up by nearly 16 years in the past nearly 70 years in the countries considered to be the richest, it exceeds 80 years by now, so people can hope for the longest life in these states. They are followed in order by upper-middle-, lower-middle- and low-income countries, with 5, 13 and 17 years shorter life expectancy, respectively, compared to the richest countries. In spite of substantial differences in length of life, less wealthy countries tried to catch up with life expectancy in the richest countries between 1950 and 2020. The difference between the poorest and the richest groups of countries was 30 years of life in 1950, which has been down to 17 years by now. Life prospects of the population will improve in all categories of income of countries in the future according to the forecasts. The life expectancy of the population may exceed 90 years by the end of the century in high-income countries, 86 years in

countries belonging to the upper-middle category, 79 years in case of the lower-middle category and 77 years in countries with the lowest income. All this will take place along with a decrease in differences between life expectancies, though its rate will be much lower than was between 1950 and 2020.

Figure 10

Average life expectancy at birth by category of income of countries



The European Union's population⁶ grows old

According to Eurostat's data⁷, the population of the 28 member countries of the European Union⁸ was 512.4 million on 1 January 2018. The population of EU member states increased by 106 million or 26% in the last nearly six decades. Life expectancy during this time rose in Western Europe, while ex-socialist countries were hit by an epidemiological crisis, and only the social impacts of the regime change in 1990 allowed life prospects to continue to become considerably longer there. A new-born baby could expect 80.9 years in the European Union in 2017, 3.2 years more than in 2002. Nevertheless, the fertility trend in Europe was basically declining between 1960 and the turn of the millennium, and stabilised below the reproduction level of 2.1, between 1.5 and 1.6. All this reveals the challenges the continent will have to face due to ageing populations, which challenges could not be offset by the continuously rising positive net migration either.

Different trends in demographic events in European countries

Population increased in 19 of the 28 member states of the EU in 2017. The population growth was mainly due to immigration surplus in the majority of the countries, natural increase had a considerably smaller part. The largest migration surpluses relative to the population number were registered in Malta (31 per mille), Luxembourg (16 per mille) and Sweden (10 per mille). For France migration loss was observed, which was more than compensated by the positive balance of births and deaths. The highest natural increases occurred in Ireland (6.6 per mille), Cyprus (3.8 per mille), Luxembourg (3.2 per mille) and France (2.4 per mille). The population decline owing to natural decrease was offset by migration surplus in Germany, Estonia, Spain, Finland and Slovenia.

⁶ The composition of the EU by member state is treated as unchanged in the calculations.

⁷ The source of the data on EU-28 countries is the database of Eurostat: <http://ec.europa.eu/eurostat/data/database>.

⁸ Including yet the United Kingdom.

Figure 11

Factors of population change in EU member states with actual population increase, 2017

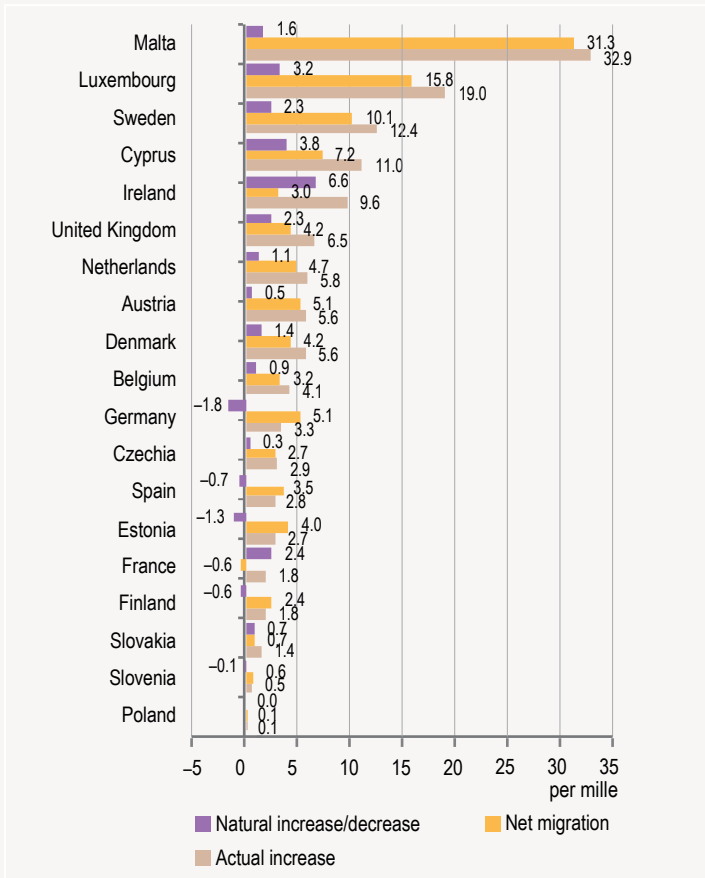
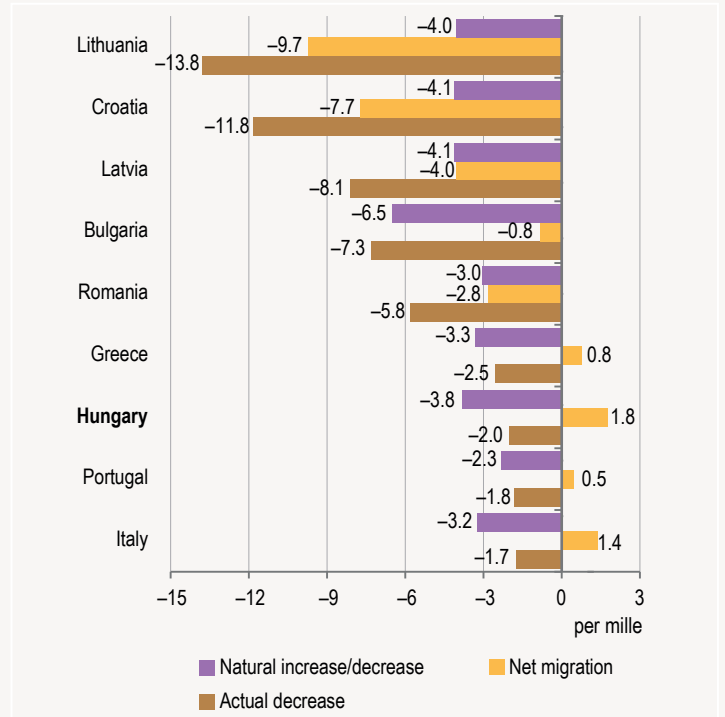


Figure 12

Factors of population change in EU member states with actual population decrease, 2017



Natural decrease expected in the European Union as a whole⁹

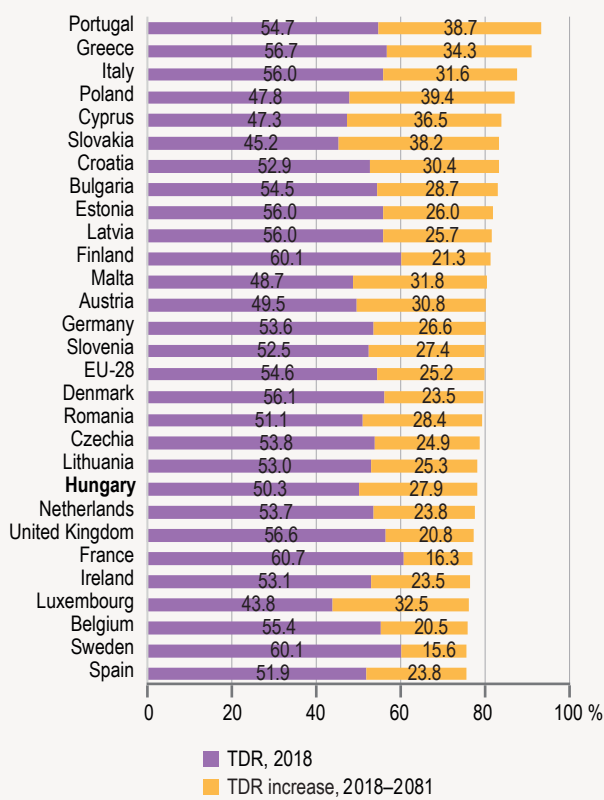
According to the baseline variant of the population projection prepared by Eurostat – as opposed to the UN’s population estimation –, the population of the EU will permanently grow until the middle of the century, reaching its maximum of 529.1 million in 2045, which will be a rise of 2.9% compared to 2019. Following this, the trend will turn into a slow decrease, the population number will lessen to 518.8 million until 2081. The population number estimated for the end of the period will be only 4.3 million or 0.8% higher than the current number of people living in EU-28 member countries. As a long-term consequence of fertility stagnating below the reproduction level and life prospects improving continuously, natural decrease is projected for the EU as a whole. Eurostat estimates Hungary’s population at 8.7 million by the end of the period, with which Hungary, based on its population number, will keep its 13th position in the ranking, while its proportion of the EU’s population will be down from 1.9% to 1.7%.

Actual population decrease was recorded in the smaller part of EU-28 member states, 9 countries in 2017. Both natural vital events and international net migration reduced the population in five of the countries with a declining population number. The highest rates of population decrease were measured for Lithuania (14 per mille), Croatia (12 per mille) and Latvia (8 per mille). The population of Bulgaria was hit by less significant emigration as well as the highest natural decrease (6.5 per mille) in the European Union. The decrease in population number was lowered by positive net migration in Hungary, Italy, Greece and Portugal in the group of countries with declining population.

⁹ The projection for EU-28 countries is the baseline variant of EUROPOP2015, prepared by Eurostat. Source: <http://ec.europa.eu/eurostat/data/database>.

Change in total dependency ratio in EU countries

Figure 13



Source: <http://ec.europa.eu/eurostat/data/database>.

According to the population projection, in 2081 the most dependents per hundred people of working age are expected in Portugal (93), Greece (91), Italy (88) and Poland (87) and the least in Spain, Sweden, Belgium and Luxembourg, with values of around 76. High emigration and fertility stabilising at a low level has been observed for the former, and considerable immigration and relatively high reproduction for the latter member countries. The unbroken rise in life expectancy will significantly increase the proportion of old people in both groups of countries between 2018 and 2081. Sweden and France are in a special situation, the number of dependents there per hundred people of working age is among the highest ones today, however, the dependency ratio in these countries is projected to be among the lowest ones in the EU by 2081. An opposite change is expected in Slovakia, Cyprus and Poland, which belong to the countries with the lowest dependency ratios nowadays, however, they will be among the countries with the highest values by the end of the examined period. A substantial shift is expected in Hungary's population as well: the number of children and old people there per hundred population of working age is 50 today, while this value may rise more than one-and-a-half-fold, to 78 by 2081.

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