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STATISTICS PORTUGAL

Portugal resident population estimates
2018

The resident population decline in 2018 was lower than in 2017

The resident population in Portugal on the 31st December 2018 was estimated at 10,276,617 persons, a decrease of 14,410 since 2017. This resulted in a negative crude rate of increase of 0.14%. The trend of population decline remained, although it has been attenuated in the last two years.

The deceleration of the population decrease in 2018 occurred from the improvement in the net migration (from 4,886 persons in 2017 to 11,570 persons in 2018), since the negative natural increase deteriorated (from -23,432 in 2017 to -25,980 in 2018).

Demographic ageing in Portugal continues to rise: when compared to 2017, the population under the age of 15 has dropped to 1,407,566 (16,330 fewer people) and the population aged 65 and over has increased to 2,244,225 (30,951 more people), representing, respectively, 13.7% and 21.8% of the total population. The oldest population (aged 85 and over) increased to 310,274 (12,736 more people).

In 2018 one in two people residing in Portugal was over 45.2 years, which represents an increase of 4.4 years in relation to 2008.

In the future, the trends of population decline and demographic ageing continues. Portugal may lose population until 2080, from the current 10.3 million to 7.9 million residents, falling below the threshold of 10 million by 2033. The younger population could be below the threshold of 1.4 million already in 2019 (1,393,513) and below the threshold of 1 million by 2074 (995,647). The number of older people will increase from 2.2 in 2018 to 2.8 million in 2080.

Reduction of the resident population by 14.4 thousand people

In 2018, the resident population in Portugal was estimated at 10,276,617 persons, composed by 4,852,366 men and 5,424,251 women, corresponding to less 14,410 inhabitants than in 2017. The crude rate of increase thus remained negative (-0.14%), maintaining the downward trend verified since 2010, despite the population decline having attenuated in the last two years.

**Figure 1: Resident population by sex,
Portugal, 2008-2018**
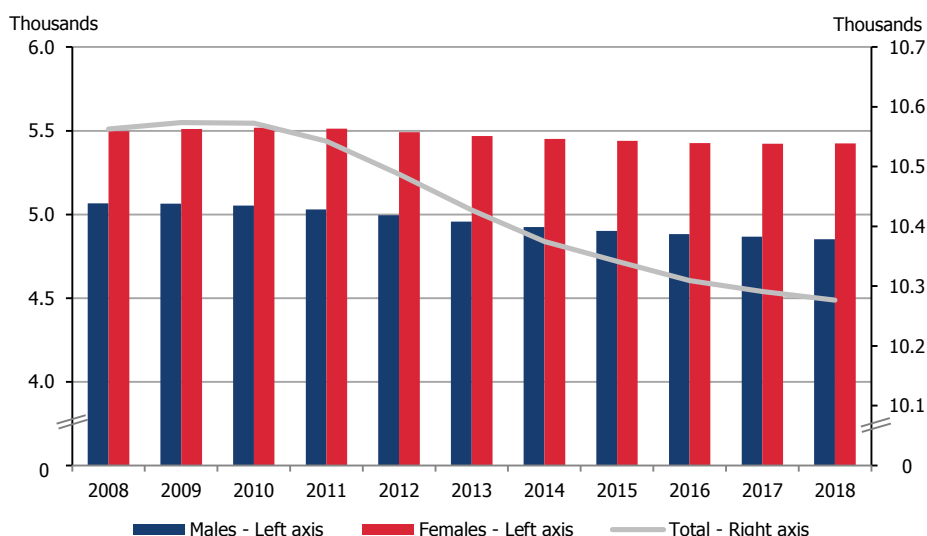
Thousands   Thousands

■ Males - Left axis   ■ Females - Left axis   — Total - Right axis

The deceleration of the population decrease in 2018 occurred from the improvement in the net migration (from 4,886 persons in 2017 to 11,570 in 2018), since the negative natural increase deteriorated (from -23,432 in 2017 to -25,980 in 2018). Thus, in 2018, the crude rate of net migration registered a positive figure of 0.11% and the crude rate of natural increase a negative of 0.25%.

Figure 2: Population change and its components, Portugal, 2008-2018

Thousands

■ Natural increase   ■ Net migration   — Population change
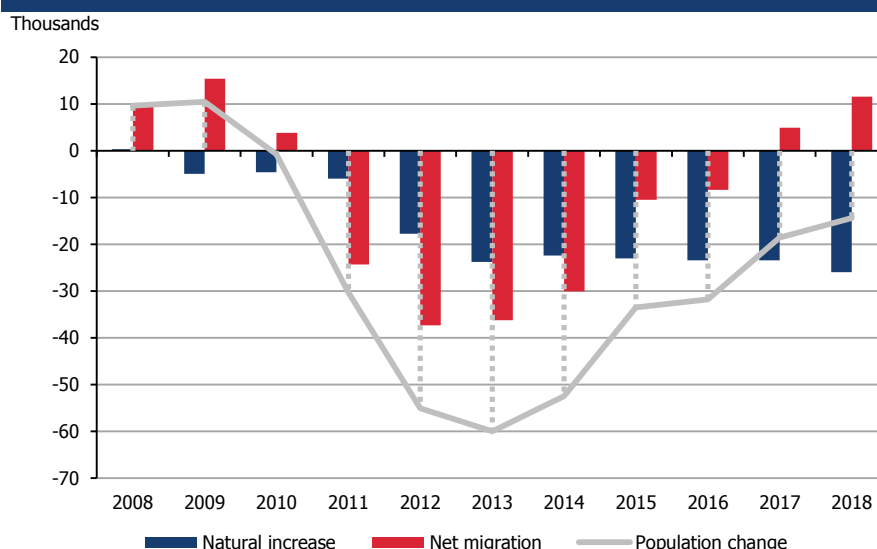
The net migration registered again a positive value in 2018, due to an increase of the permanent immigration (from 36,639 in 2017 to 43,170 in 2018), as the permanent emigration slightly decreased (31,753 in 2017 to 31,600 in 2018).

The figure of temporary emigrants (50,154) remained higher than that of permanent emigrants (31,600), which corresponds to an increase of 1.7% when compared to 2017 (when it was 49,298).

Portugal resident population estimates - 2018

Figure 3: Net migration and its components, Portugal, 2008-2018
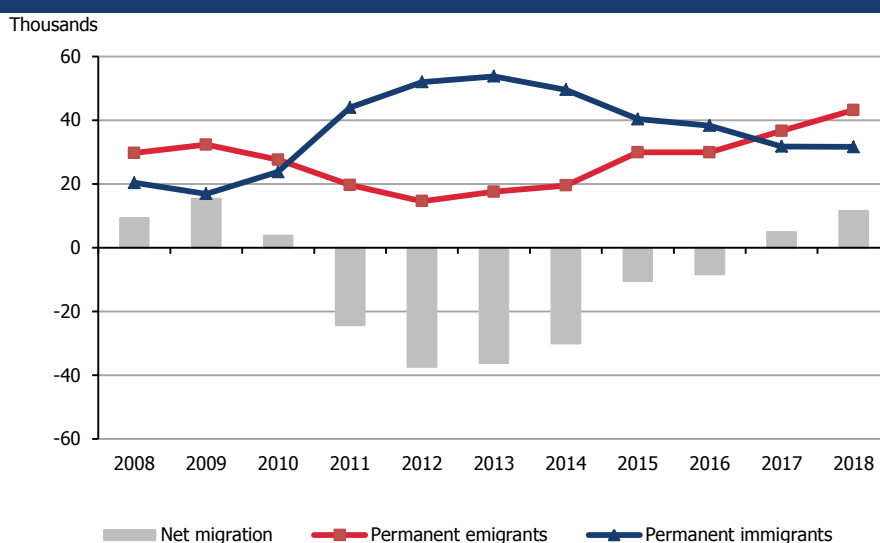
Live births of mothers residing in Portugal increased by 1.0% (from 86,154 in 2017 to 87,020 in 2018). However, the increase in deaths of persons residing in Portugal was higher, reaching 3.0% (from 109,758 in 2017 to 113,000 in 2018), which caused the aggravation of the negative value of the natural increase in 2018.

Figure 4: Natural increase and its components, Portugal, 2008-2018
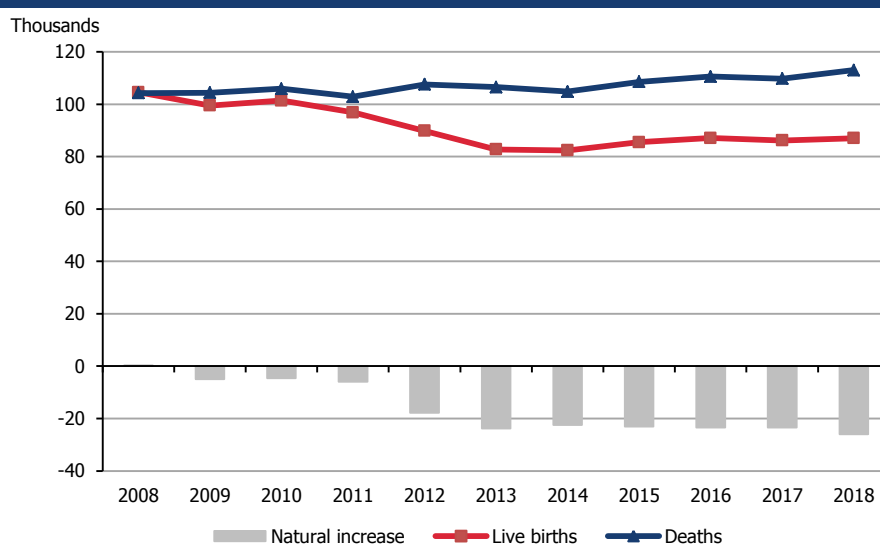
## The average number of children has reached 1.41

From 2008 to 2011, the total fertility rate (TFR) varied between 1.35 and 1.40, dropping down to 1.21 children per woman at childbearing years in 2013. From 2014 onwards, there were slightly annual increments, reaching an average of 1.41 children per woman at childbearing years in 2018.

Figure 5: Total Fertility Rate (TFR), Portugal, 2008-2018

No.of children
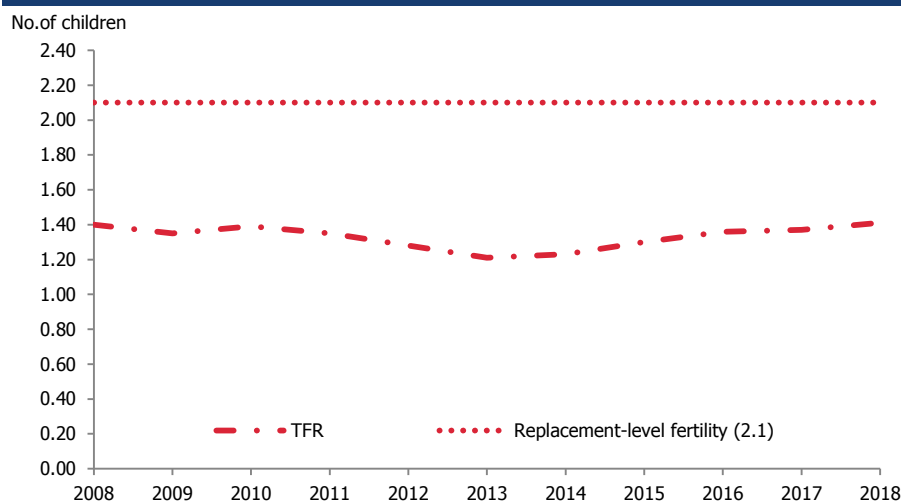
In 2018, the mean age of women at childbirth was 31.4 years, an increase of 1.8 years regarding 2008. The mean age of women at birth of first child was 29.8 years, an increase of 2.1 years from 2008.

Figure 6: Mean age of women at childbirth and at birth of first child, Portugal, 2008-2018

Years
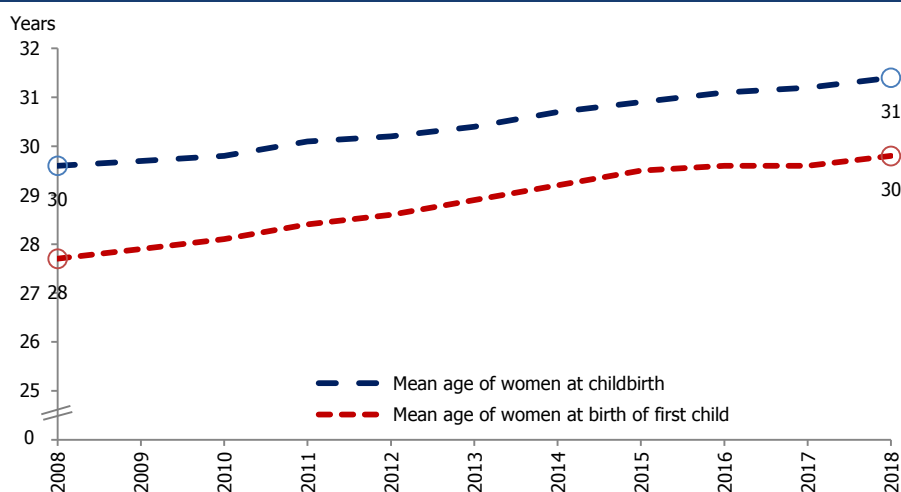
Number of women higher than that of men

In 2018, the residing male population was estimated at 4,852,366 and the female population at 5,424,251. The sex ratio was of 89.5 men per 100 women, which illustrates a bigger imbalance in the population sizes of both sexes, when compared to 2008, when this ratio was 92.2 men per 100 women.

The number of men was higher than that of women in younger ages (from 0 to 14 years), due mainly to a favourable men sex ratio at birth. In the group of population aged 65 and over, the number of men is significantly lower than that of women, due to male over-mortality: in 2018, in the age group from 65 to 79, there were 79.3 men per 100 women and, in the group of persons aged 80 and over, this number was 55.8. However, in the groups of population above 65 years, the difference between sexes is decreasing: in the last ten years, per 100 women aged from 65 to 79 there were 77.3 men and per 100 women aged 80 and over there were 54.1 men.

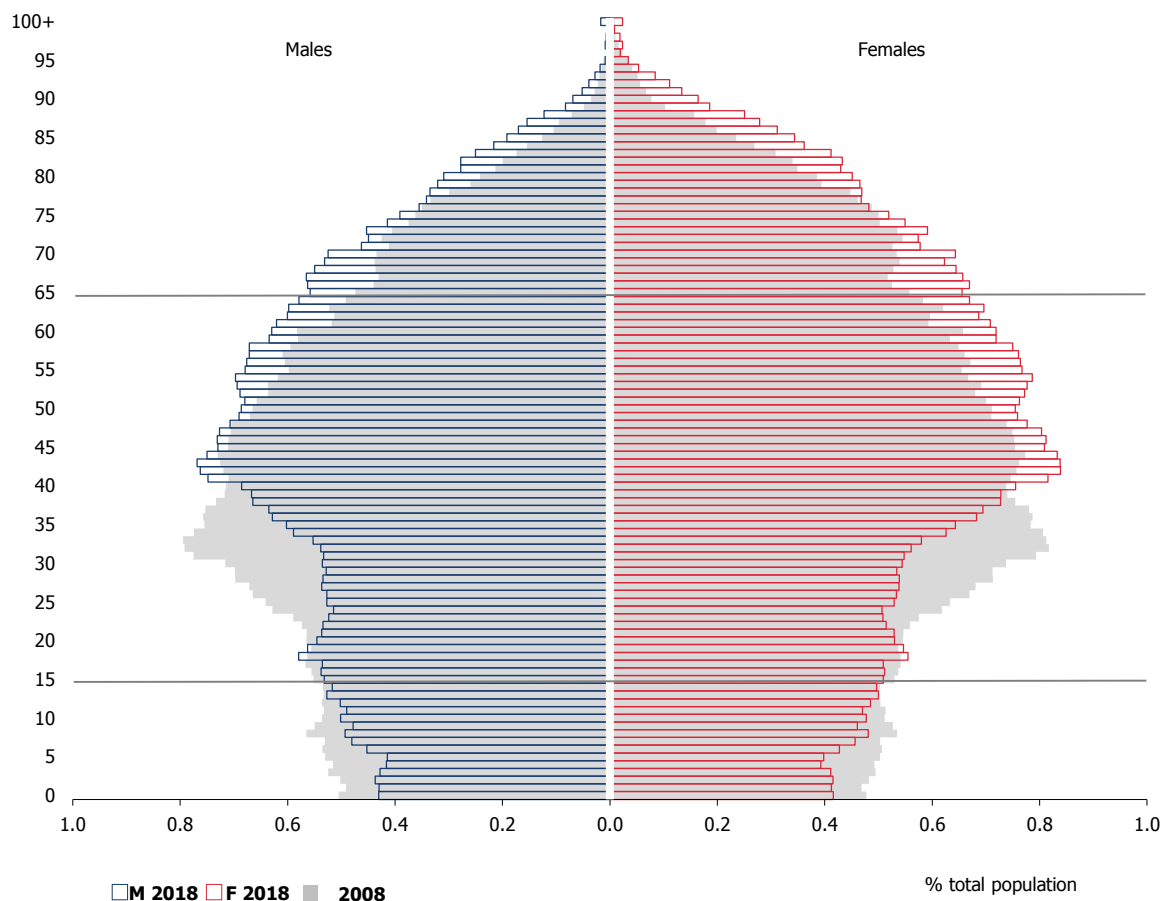Figure 7: Sex ratio by age group, Portugal, 2008 and 2018
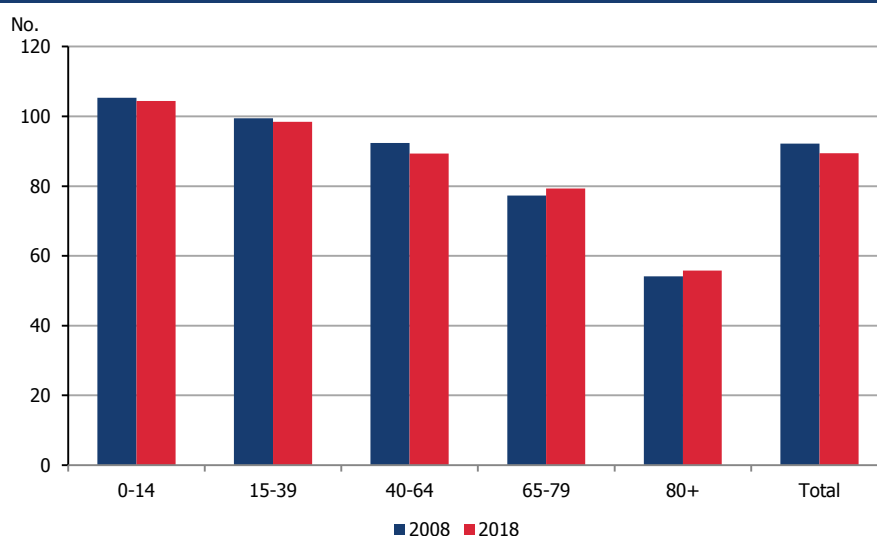
Demographic ageing continued to increase

The changes on the size and age-sex structure of the population residing in Portugal, in particular due to low birth rate and increased longevity in the last decades, suggests, aside from the population decrease in the last years, the continuation of the demographic ageing.

In 2018, when compared with 2017, the younger population (under 15 years) diminished to 1,407,566 persons (16,330 fewer people) and the population aged 65 and over increased to 2,244,225 persons (30,951 more people), representing, respectively, 13.7% and 21.8% of the total estimated population.

The oldest population (aged 85 and over) increased to 310,274 persons (12,736 more people), corresponding to 13.8% of the population aged 65 and over.

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Figure 8: Age pyramids, Portugal, 2008 and 2018

Males   Females

☐ M 2018   ☐ F 2018   ■ 2008   % total population

Over the last ten years, a double demographic ageing becomes evident, as shown by the overlapping of the age pyramids: the base of the pyramid is narrowed, while its top is widened. In this period, the number of elderly people (aged 65 and over) increased by 345,922 and the younger population decreased by 223,419.

The number of working age population (those aged from 15 to 64) also decreased, by 408,900.

In last ten years, the median age increased by 4.4 years

In 2018, the median age of the residing population was 45.2 years. The median age corresponds to the age which divides the population into two numerically equivalent groups. That is to say that, in 2018, half of the residing population was over 45.2 years, while the other half was younger than that age. Between 2008 and 2018, the median age rose by 4.4 years (were 40.8 in 2008).

In 2017, the most recent data made available by Eurostat, Portugal had the 3rd higher median age of the European Union (EU 28), reaching 44.8 years, only below Italy (46.3) and Germany (46.0). Portugal was also the country, together with Spain, were the median age increased the most in the last decade (4.4 years).

In 2017, the median age of the population residing in EU 28 was 43.1 years. Among the Member States, the median age varied between 37.3 years in Ireland and 46.3 years in Italy.

Figure 9: Median age of resident population, EU 28, 2017

Source:
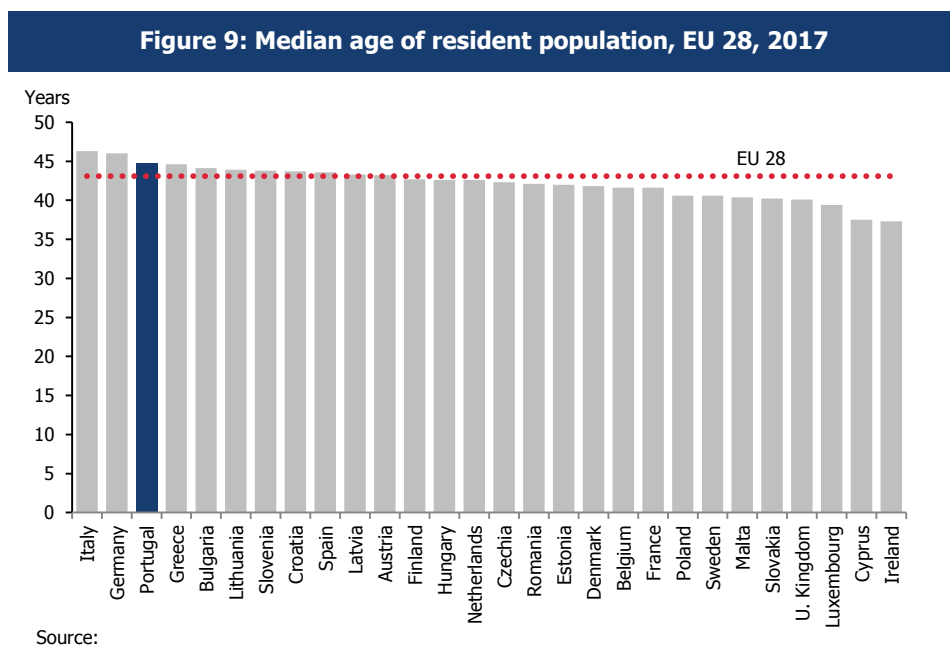
Total dependency ratio continued to rise, accentuating the demographic pressure on the working age population

The evolution of summary measures concerning the resident population's age structure provides also indicates the demographic ageing in Portugal.

The ageing ratio, which compares the population aged 65 and over (elderly population) with the population from 0 to 14 years (younger population) continued to rise. Since 2000, the number of older people has been higher than that of young people. In 2008, per 100 youngest residing in Portugal there were 116.4 elderly, a figure that rose to 159.4 in 2018.

Similarly, the total dependency ratio, which corresponds to the number of young and elderly people per 100 persons aged from 15 to 64 years, continued to rose, accentuating the demographic pressure on the working age population. In 2008, for every 100 persons at working age residing in Portugal there were 50.2 young and elderly people, a figure that rose to 55.1 in 2018.

The ageing of the working age population is also in evidence, as shown by the decline in the renewal index of the population in active age, corresponding to the number of people aged between 20 and 29 per 100 people aged

Portugal resident population estimates - 2018

between 55 and 64. In 2008, per 100 people aged from 55 to 64 years, there were 105.1 persons aged between 20 and 29 years, figure that reduced to 77.7 in 2018. Since 2010, the number of people potentially leaving the labour market is not compensated by the number of people potentially entering the labour market, with the index systematically assuming values below 100.

Resident population summary measures, Portugal, 2008-2018		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total dependency ratio	(No.)	50.2	50.5	51.0	51.4	51.9	52.5	53.0	53.4	54.1	54.7	55.1
Young-age dependency ratio	(No.)	23.2	23.0	22.8	22.6	22.5	22.3	22.0	21.7	21.6	21.4	21.2
Old-age dependency ratio	(No.)	27.0	27.5	28.2	28.8	29.4	30.3	31.1	31.8	32.5	33.3	33.9
Ageing ratio	(No.)	116.4	119.3	123.9	127.6	131.1	136.0	141.3	146.5	150.9	155.4	159.4
Renewal index of the population in active age	(No.)	105.1	100.6	96.2	93.0	88.8	86.2	83.5	81.3	79.7	78.7	77.7

Portugal resident population estimates - 2018

2019 UPDATE OF THE 2015-2080 RESIDENT POPULATION PROJECTIONS' CENTRAL SCENARIO FOR PORTUGAL - CONTEXT

In March 2017, Statistics Portugal released the Resident Population Projections 2015-2080 exercise, based on a set of four scenarios, resulting from the combination of demographic assumptions about the future evolution of fertility, mortality and migration components.

In 2018, after three years over the base population reference period of the Population Projections 2015-2080 (31st December 2015), Statistics Portugal updated the central scenario of this exercise for Portugal. Keeping the methodological procedures and the assumptions on future evolution of the fertility, mortality and migrations components considered in this scenario, this update used population estimates for 2017 as the base population (as of 31st December 2017) and included recent demographic information available.

Similarly to the previous year, Statistics Portugal discloses in this press release a new update (2019 update) of the central scenario of the Resident Population Projections exercise 2015-2080, considering the resident population estimates at 31st December 2018 as the base population and integrating observed values of live births, deaths and estimated migration values for the period 2016-2018.

Thus, in the process of updating the 2019 central scenario of population projections 2015-2080 for Portugal:

- The base population was updated for the resident population at 31st December 2018;
- The starting values for fertility, mortality and net migration are those observed in 2018, that is:
  . A total fertility rate of 1.41 (1.30 in 2015);
  . A life expectancy of 77.78 years for men and 83.43 years for women (77.36 for men and 83.23 for women in 2013-2015);
  . A positive net migration of 11,570 (-10,481 in 2015).
- The assumptions on future evolution of the fertility, mortality and migrations components were kept unchanged:
  . A progressive increase of the total fertility rate, reaching 1.55 children per woman in 2080;
  . The life expectancy growth rate remains unchanged, reaching in 2080 87.38 years for men and 92.10 years for women;
  . Positive net migrations throughout the whole period, reaching 12,442 in 2080.

The main results obtained in 2019 compared to the central scenario of the Resident Population Projections 2015-2080 exercise can be summarized as follows:

- The population will continue to decrease, although to a lesser extent, reaching 415,368 more persons in 2080 than in the 2015-2080 exercise;
- The trend towards demographic ageing remains, although slightly less pronounced: in 2080 the ageing ratio that was 317.4 in the 2015-2080 exercise changed to 291.0.

It should be noted that projections illustrate potential trajectories of population change, as the results are conditioned by the size and structure of the base population and by the different assumptions on the behaviour of fertility, mortality and net migration over the projection period.

From 2018 to 2080, Portugal may lose 2.4 million inhabitants

Taking as reference the 2018 population estimates, Portugal may lose population until 2080, from the current 10.3 million to 7.9 million residents. The Portuguese population could be below the threshold of 10 million by 2033 (9,994,491).

**Resident population, Portugal, 1991-2018 (estimates)
and 2019-2080 (projections)**
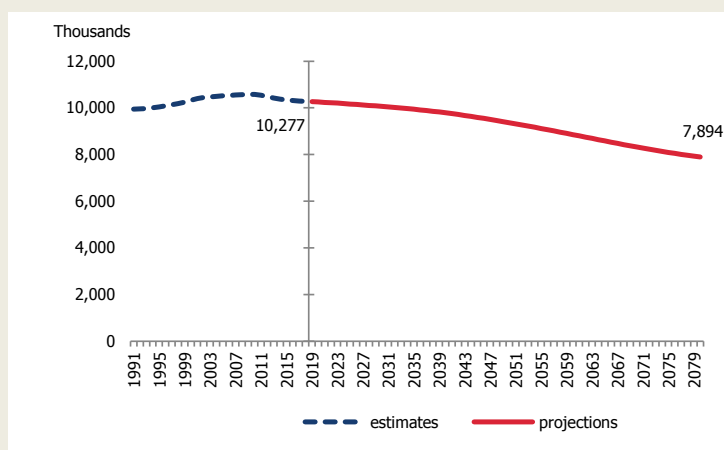
Over the projection period, the process of demographic ageing will become more marked, both by a reduction in the proportion of young people in the total population and an increase in the proportion of the population aged 65 and over.

The ageing ratio can almost duplicate between 2018 and 2080, from 159.4 to 291.0 elderly people per 100 young people.
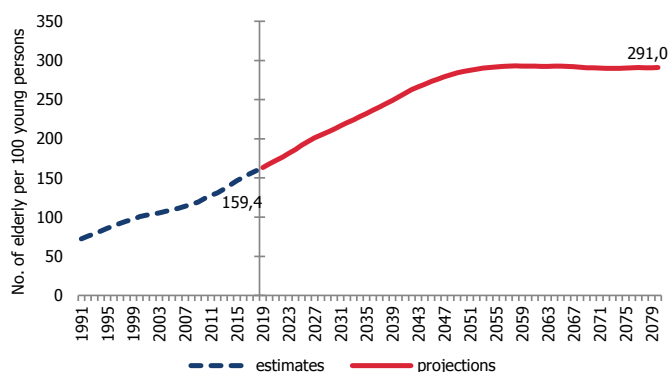
The older population (aged 65 and over), is projected to increase from the current 2.2 million to 2.8 million persons, between 2018 and 2080. The number of elderly might reach the highest level by 2048, at which point it will begin to decrease. This situation results from the fact that enters in this age group generations already born in a context of low fertility levels, below the replacement-level fertility.

The population under 15 years may drop, between 2018 and 2080, from the current 1.4 million to less than 1 million (962,657 persons) in 2080. The younger population could be below the threshold of 1.4 million already in 2019 (1,393,513 persons) and the threshold of 1 million by 2074 (995,647 persons).
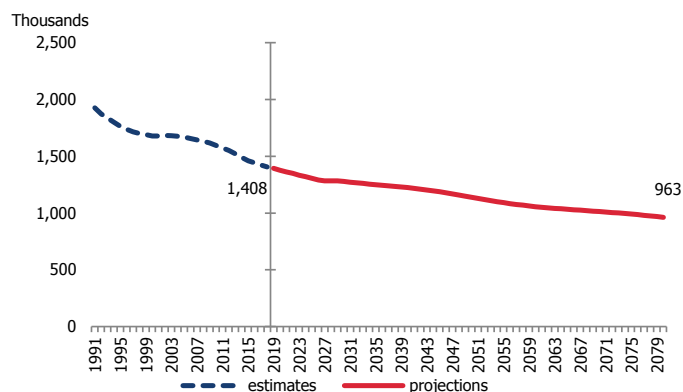
The working age population (aged from 15 to 64) may diminish from 6.6 million in 2018 to 4.1 million by 2080. By 2032, it could be below the threshold of 6 million (5,959,957 persons) and below 5 million by 2049 (4,999,413 persons).

Ageing ratio and resident population, Portugal, 1991-2018 (estimates) and 2019-2080 (projections)

Ageing ratio

Resident population aged 0 to 14

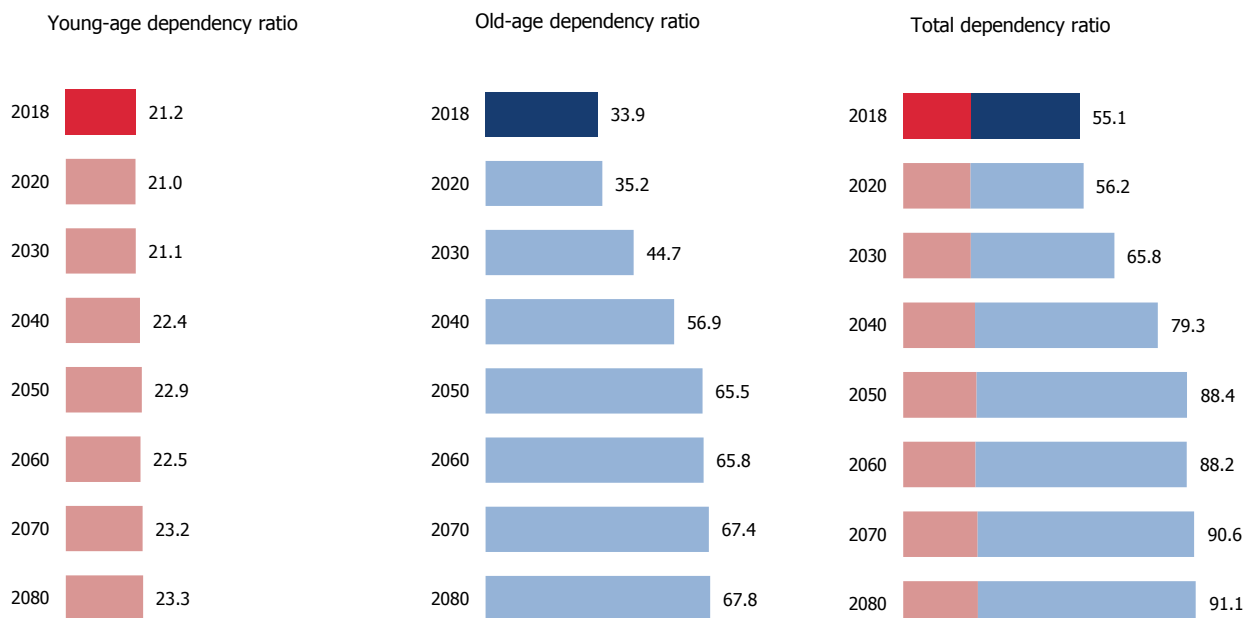### Residente population aged 15 to 64
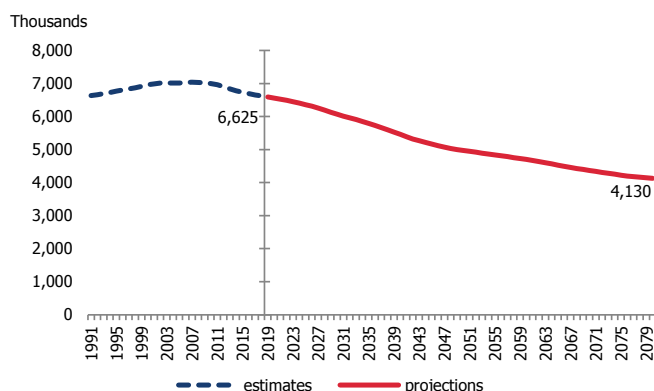
Resident population aged 65 and over
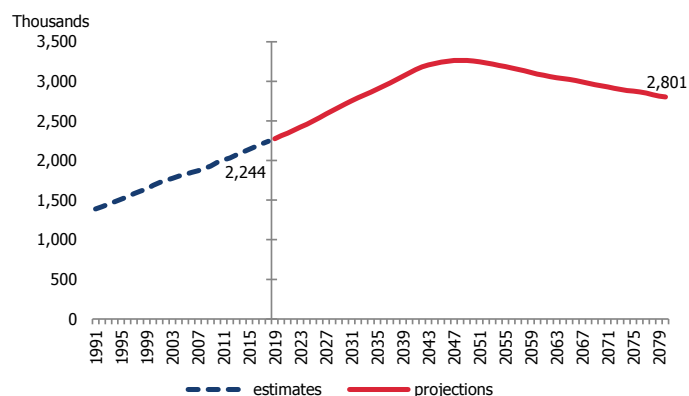
The old-age dependency ratio is projected to duplicate between 2018 and 2080, from 33.9 to 67.8 elderly people per 100 potentially active people. The young-age dependency ratio may increase from 21.2 in 2018 to 23.3 in 2080. So, the total dependency ratio is projected to increase from 55.1 to 91.1, between 2018 and 2080.

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Dependency ratios, Portugal, 2018 (estimates) and 2020-2080 (projections)

Young-age dependency ratio	Old-age dependency ratio	Total dependency ratio

Young-age dependency ratio

2018	21.2
2020	21.0
2030	21.1
2040	22.4
2050	22.9
2060	22.5
2070	23.2
2080	23.3

Old-age dependency ratio

2018	33.9
2020	35.2
2030	44.7
2040	56.9
2050	65.5
2060	65.8
2070	67.4
2080	67.8

Total dependency ratio

2018	55.1
2020	56.2
2030	65.8
2040	79.3
2050	88.4
2060	88.2
2070	90.6
2080	91.1

Portugal resident population estimates - 2018

Technical note:

Resident population estimates 2018

On this date, Statistics Portugal releases on its website, at www.ine.pt, the 2018 resident population estimates as well as other demographic indicators, according to the administrative division in force since 31st December 2018 and the NUTS 2013 version.

Resident population estimates adopt the cohort component method, rely on the census concept of resident population, and are calculated by sex and age, up to the geographic breakdown level of municipality. Their calculation is based on the natural and migration demographic components and relies on information from other statistical operations of Statistics Portugal: live births, deaths, and emigration and immigration estimates.

With regard to live births and deaths, the information relies on the so-called vital statistics, using, for statistical purposes, facts that are subject to compulsory civil registration – live births and deaths. Hence, the natural balance was obtained from data on the number of live births and deaths, occurred in 2018 and obtained from information registered in civil registries up to March 2019 (not incorporating possible revisions that may occur within the process of codification of causes of death in the death registers for 2018 and previous years).

Given that migration flows in Portugal are not subject to direct registration, the results of the latest general population censuses and information stemming from other statistical operations of Statistics Portugal – the outbound migration survey and the labour force survey – play a particularly important role in the estimation of migration flows, as well as in the analysis of information produced by the Portuguese Immigration and Borders Service.

In the calculation of resident population estimates, which is based on the concept of habitual residence, the values used for migration flows stem from annual estimates of permanent emigrants and annual estimates of permanent immigrants.

For more details on the Resident Population Estimates methodology, see the methodological document available at http://smi.ine.pt/DocumentacaoMetodologica/Detalhes/1074.

Resident population projections 2015-2080 for Portugal

Population projections show how the size and structure of a population would hypothetically evolve in the future, usually in a long run horizon. Their main goal is to help understand population dynamics and contribute to debates on possible societal changes.

Population projections are typically made according to various scenarios entailing future change. Their calculations are based on assumptions about developments in fertility, mortality and migration. Starting from different scenarios and assumptions, projections show the population changing in different and often diverging ways. As such, population projections are a type of 'what-if' analysis: they show how population changes if particular assumptions within a broader scenario remained true over the projection period.

Population projections are not forecasts: a population forecast shows what producers identify as the most probable development of a future population, while 'what-if' population projections are calculated based on assumptions, and possibly their variants, about future change. Moreover, projections can include seemingly realistic and plausible, but also implausible (like "No migration") "what-if" developments.

Projections may differ not only in the selection of scenarios and assumptions, but also regarding the methods applied and consequently they may have different outcomes.

It should be emphasized that the longer the projection period, the greater the degree of inherent uncertainty of future demographic changes, and therefore the reading of results should be done with caution, taking into account the uncertainty associated with the results.

For more details on the Resident population projections 2015-2080 for Portugal methodology, see the methodological document available at http://smi.ine.pt/DocumentacaoMetodologica/Detalhes/1463.

Concepts:

- **Permanent emigrant** - A person (national or foreign) who, in the reference period, and after having remained in the country continuously for at least one year, left it with the intention of residing in another country for a continuous period of one year or more.
- **Temporary emigrant** - A person (national or foreign) who, in the reference period, and after having remained in the country continuously for at least one year, left it with the intention of residing in another country for a period of less than one year.
- **Life expectancy at birth** - The mean number of years that a new-born child can expect to live if subjected throughout his life to the current mortality conditions (age specific probabilities of dying).
- **Life expectancy at 65 years** - The mean number of years still to be lived by a person who have reached 65 years, if subjected throughout the rest of his life to the current age specific probabilities of dying.
- **Median age** - The age which divides a population into two numerically equivalent groups.

Portugal resident population estimates - 2018

- **Permanent immigrant** - A person (national or foreign) who, in a certain period of reference, entered the country with the intention of remaining here for one year or more, having previously resided abroad continuously for one year or more.
- **Old-age dependency ratio** - The ratio of the number of elderly persons of an age when they are generally economically inactive (aged 65 and over) to the number of persons of working age (from 15 to 64).
- **Age dependency ratio of the young (young-age dependency ratio)** - The ratio of the number of young persons of an age when they are generally economically inactive (either under 15 or under 20 depending on the context) to the number of persons of working age (from 15 to 64 or from 20 to 59 depending on the context).
- **Total dependency rate** - The ratio of the elderly (ages 65 and older) plus the young (under age 15) to the population in the working ages (ages 15-64), (usually expressed as 100 (102) people aged 15-64 years).
- **Ageing index** - The ratio of the number of elderly persons of an age when they are generally economically inactive (aged 65 and over) to the number of young persons (from 0 to 14).
- **Working age population renewal ratio** - The ratio between the population that is potentially entering and that which is leaving the labour market, normally defined as the quotient between the number of people aged between 20 and 29 years and the number of people aged between 55 and 64.
- **Total fertility rate (TFR)** - The mean number of children that would be born alive to a woman during her lifetime if she were to pass through her childbearing years conforming to the fertility rates by age of a given year. It is therefore the completed fertility of a hypothetical generation, computed by adding the fertility rates by age for women in a given year (the number of women at each age is assumed to be the same). The total fertility rate is also used to indicate the replacement level fertility; in more developed countries, a rate of 2.1 is considered to be replacement level.
- **Live births** - Births of children that showed any sign of life. It is the number of births excluding stillbirths (total births include live births and stillbirths).
- **Live birth** - This is the complete expulsion or extraction from the mother's body, irrespective of the duration of the pregnancy, of a product of fertilisation that, after separation, breathes or shows any other signs of life, such as a beating of the heart or umbilical cord or actual contraction of any muscle subject to voluntary movement, whether or not the umbilical cord has been severed and whether or not the placenta is retained.
- **Death** - The permanent disappearance of vital functions.
- **Resident population** - Set of persons who, regardless of being present or absent in a given housing unit at the moment of observation, have lived in the place of their usual residence for a continuous period of 12 months prior to the moment of observation, or have arrived to the place of their usual residence during the period of 12 months prior to the moment of observation, with the purpose of living there for a year, at least.
- **Sex ratio** - The ratio of males to females in a population usually expressed per 100 (10^2) women).
- **Net migration** - The difference between immigration into and emigration from the country or region during a given period, usually a calendar year.
- **Natural increase** - The difference between the number of live births and the number of deaths during a given period, usually a calendar year.
- **Crude rate of increase** - The ratio of the total population change during the year to the average population of the area in question in that year. The value is expressed per 1,000 inhabitants.
- **Crude rate of net migration** - The ratio of the net migration during the year to the average population in that year. The value is expressed per 1,000 inhabitants.
- **Crude rate of natural increase** - The difference between the number of live births and the number of deaths occurring during a given period, usually a calendar year divided by the mid-year population of that period (usually expressed per 100 (10^2) or 1,000 (10^3) inhabitants).