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PRESS RELEASE

September 30, 2025
RESIDENT POPULATION PROJECTIONS
2025-2100

DEMOGRAPHIC AGEING IN PORTUGAL CONTINUES TO WORSEN, STABILISATION EXPECTED ONLY AFTER 2060

Between 2024 and 2100, according to the projected *central scenario*:

- Portugal's population will decline, from the current 10.7 million to 8.3 million people.
- The number of young people will decrease from 1.4 to around 1.0 million.
- The number of elderly people will increase from 2.6 to 3.1 million.
- The ageing index in Portugal will increase gradually until 2060, when it will tend to stabilise.
- The working-age population (aged 15 to 64) will decrease from 6.8 to 4.2 million people.
- The old-age dependency ratio (the ratio of persons aged 65 or over to those aged 15 to 64) is expected to rise sharply due to both a shrinking working-age population and a growing elderly population. This ratio is projected to increase from 39 to 73 elderly persons per 100 working-age persons between 2024 and 2100.
- The young-age dependency ratio (the ratio of persons aged 0 to 14 to those aged 15 to 64) is expected to remain relatively stable, increasing slightly from 20 to 23 young people per 100 working-age persons between 2024 and 2100.

The resident population projections, the main results of which are presented in this press release, are based on assumptions regarding future trends in the demographic components: fertility, mortality, and migration. It should be noted that these assumptions were defined based on the information and data sources available at Statistics Portugal (INE) at the time they were established, namely the Annual Immigration Estimates, Annual Emigration Estimates, and the Provisional Resident Population Estimates for 2024.

In formulating the assumptions regarding the future evolution of the components of population change, particularly migration, Statistics Portugal benefited from the contributions of a group of experts, to whom we express our gratitude for their availability and collaboration.

For more detailed information, please refer to both the Technical Note accompanying this press release and the methodological document on the Resident Population Projections.

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Statistics Portugal publishes the results of the most recent Resident Population Projections exercise, broken down by sex and age, for Portugal and the NUTS 2 regions.

The current Resident Population Projections exercise for 2025–2100 follows the cohort-component method and is based on the provisional estimates of the resident population as of 31 December 2024.

Four population projection scenarios were defined: *low scenario*, *central scenario*, *high scenario*, and *no migration scenario*. These scenarios are based on different combinations of alternative assumptions regarding the evolution of demographic components — central, optimistic and pessimistic assumptions for **fertility** and **mortality**; as well as central, optimistic and pessimistic assumptions for **migration**. In addition, a *no-migration* assumption was included to assess the impact of migration on population change.

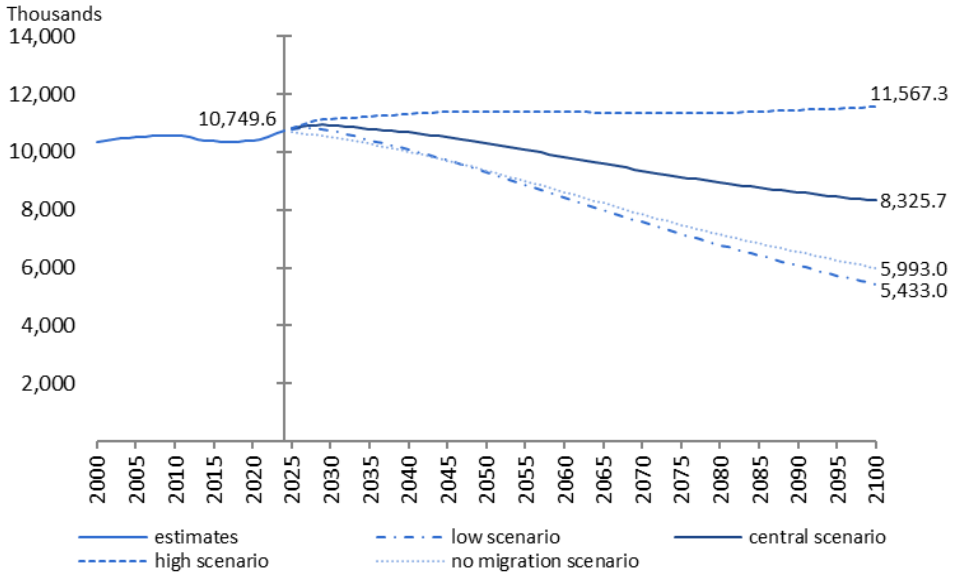
The results obtained should not be interpreted as forecasts, but rather as conditional "**if-then**" scenarios, since they are based on: (i) the size and structure of the population at the starting point (2024), and (ii) different behavioural patterns assumed in each scenario for the fertility, mortality, and migrations components over the projection period.

IN THE *CENTRAL SCENARIO*, THE RESIDENT POPULATION IN PORTUGAL WILL TEND TO DECREASE

According to the results of the *central scenario*, Portugal will lose approximately 2.4 million residents by 2100. In this scenario, the resident population could increase to 10.9 million by 2029, followed by a steady decline until 2100, when it is projected to reach 8.3 million. The population is anticipated to fall below the threshold of 10 million inhabitants in 2057 (9,976,259) and below 9 million in 2079 (8,983,719).

Figure 1

RESIDENT POPULATION, PORTUGAL, 2000-2100 (ESTIMATES AND PROJECTIONS)



In the *low scenario*, population loss will be even more pronounced due to declining fertility rates and continued very low net migration, with the resident population in Portugal projected to reach 5.4 million by 2100.

However, in the *high scenario*, the population could increase, primarily as a result of a stronger recovery in fertility levels combined with higher positive net migration, with the resident population projected to rise to 11.6 million by 2100.

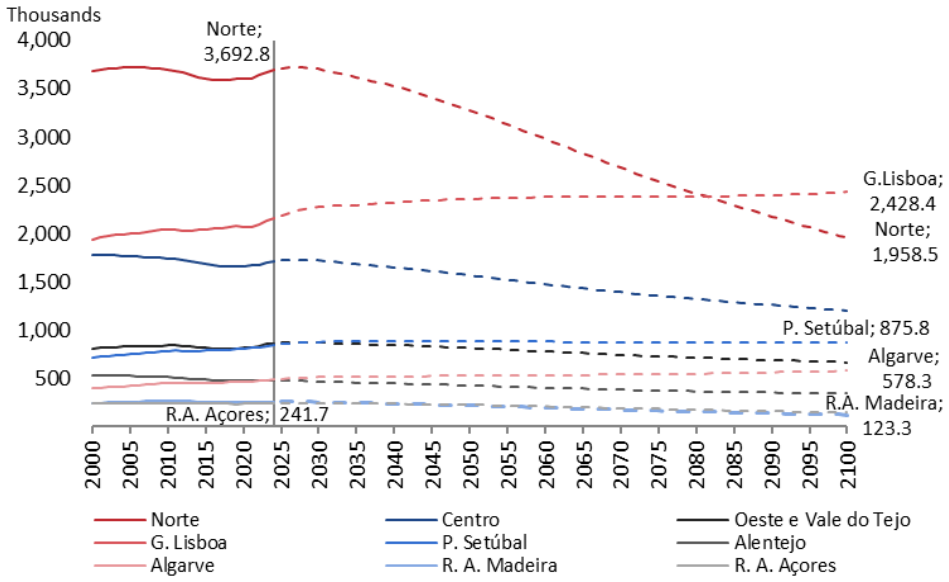
In the no migration scenario—which assumes the unlikely possibility of zero migration flows and adopts fertility and mortality assumptions from the central scenario—the resident population is projected to be around 6.0 million by 2100.

The population decrease between 2024 and 2100 will not be uniform across all NUTS 2 regions in the *central scenario*, with exceptions in Grande Lisboa, the Algarve, and the Península de Setúbal.

As a result, the Norte region would no longer be the region with the largest resident population by the early 2080s, with Grande Lisboa becoming the most populous region.

Figure 2

RESIDENT POPULATION, NUTS 2, 2000-2100 (ESTIMATES AND PROJECTIONS – *CENTRAL SCENARIO*)



IN THE *CENTRAL SCENARIO*, THE YOUNG POPULATION WILL DECREASE TO FEWER THAN ONE MILLION BY 2100

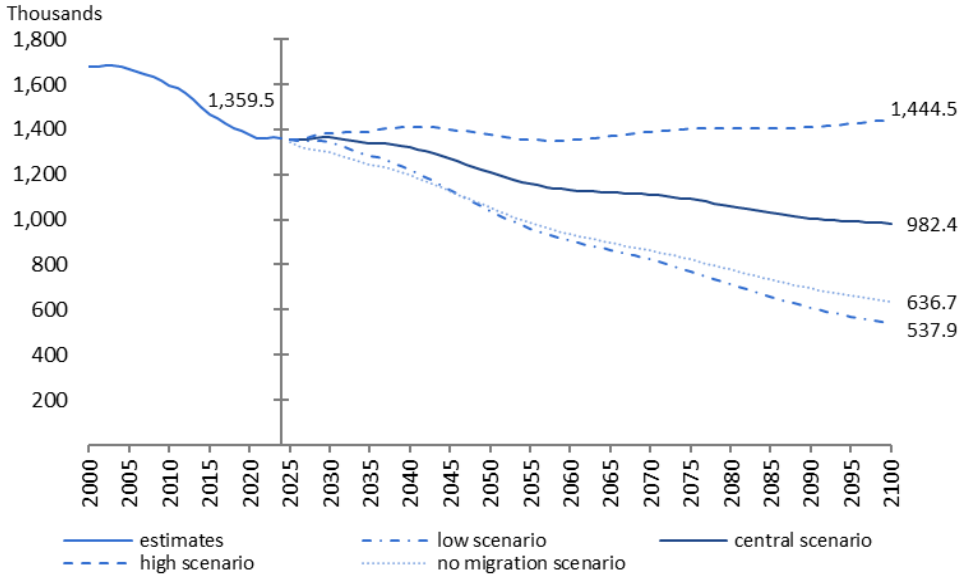
The population under 15 years of age residing in Portugal is projected to decline from the current 1.4 million to fewer than one million (982,399) by 2100 in the *central scenario*. In this scenario, the young population is expected to fall below the threshold of 1.3 million in 2043, 1.2 million in 2051, and 1.1 million in 2073.

By 2100, the young population could range from 1.4 million in the *high scenario* to just over 0.5 million in the *low scenario*.

The differences in the projected evolution of this age group are mainly attributable to the effects of net migration, fertility rates, and their combination across the various scenarios.

Figure 3

RESIDENT POPULATION, 0-14 YEARS AGE GROUP, PORTUGAL, 2000-2100 (ESTIMATES AND PROJECTIONS)



THE WORKING-AGE POPULATION WILL DECREASE BY ABOUT 2.6 MILLION BY 2100

The working-age population (aged 15 to 64) residing in Portugal will decline from 6.8 million in 2024 to 4.2 million by 2100 in the *central scenario*. In this scenario, the working-age population is expected to fall below the threshold of 6.0 million (5,949,726) in 2041 and below 5.0 million (4,987,255) in 2065.

By 2100, the working-age population could range from approximately 6.0 million (5,971,663) in the *high scenario* to around 2.6 million (2,637,347) in the *low scenario*.

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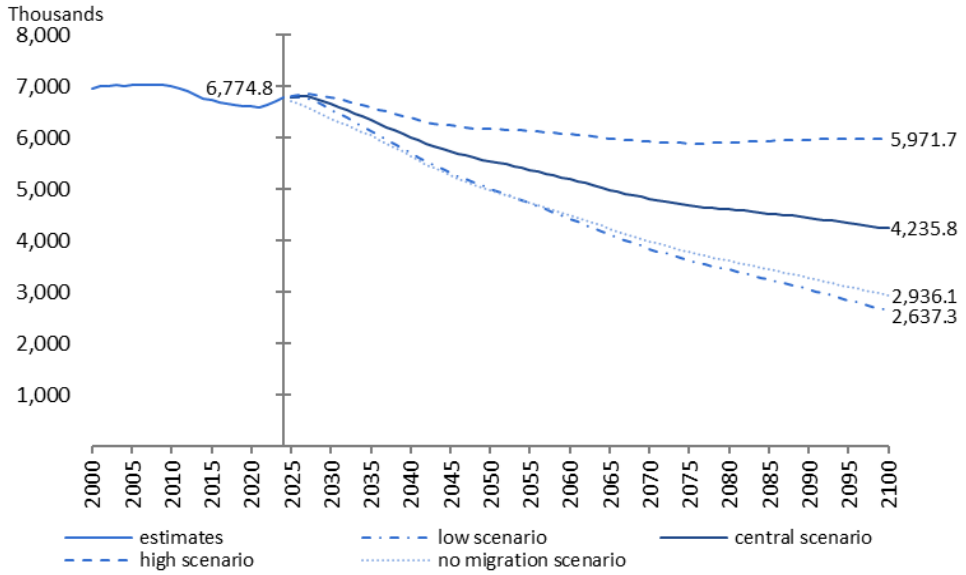
Figure 4

RESIDENT POPULATION, 15-64 YEARS AGE GROUP, PORTUGAL, 2000-2100 (ESTIMATES AND PROJECTIONS)



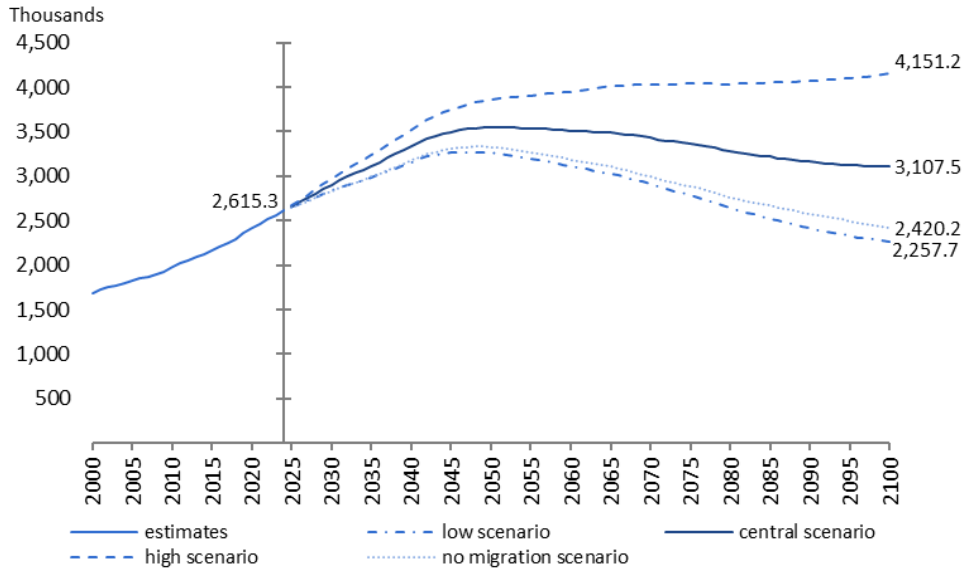
THE ELDERLY POPULATION IS GROWING

In the *central scenario*, the population aged 65 or over residing in Portugal is projected to increase from 2.6 million in 2024 to 3.1 million by 2100. The elderly population is expected to peak in the early 2050s, after which it will begin to decline. This situation is due to smaller generations—born during a period of fertility rates below the replacement level—entering this age group.

By 2100, the elderly population could range from 2.3 million in the *low scenario* to 4.2 million in the *high scenario*. The more pronounced increase in the *high scenario* is primarily due to a greater rise in life expectancy assumed in that scenario.

Figure 5

RESIDENT POPULATION, 65 AND OVER AGE GROUP, PORTUGAL, 2000-2100 (ESTIMATES AND PROJECTIONS)



DEMOGRAPHIC AGEING IS ACCELERATING

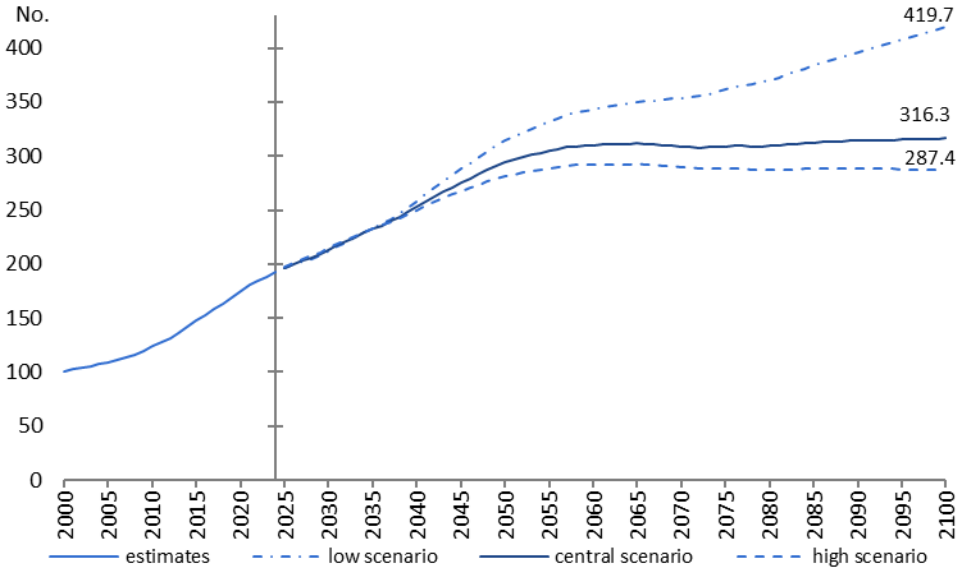
In the *central scenario*, the ageing ratio — which compares the population aged 65 or over (elderly population) with the population aged 0 to 14 (younger population) — is projected to increase significantly between 2024 and 2100, rising from 192 to 316 elderly persons for every 100 young persons.

In 2100, the ageing ratio could reach 287 elderly persons per 100 young persons in the *high scenario* or rise to 420 elderly persons per 100 young persons in the *low scenario*.

While the combination of more positive net migration and higher fertility rates—along with increased life expectancy as predicted in the *high scenario*—is not sufficient to halt the pace of demographic ageing, it does contribute to mitigating its impact.

Figure 6

AGEING RATIO, PORTUGAL, 2000-2100 (ESTIMATES AND PROJECTIONS)



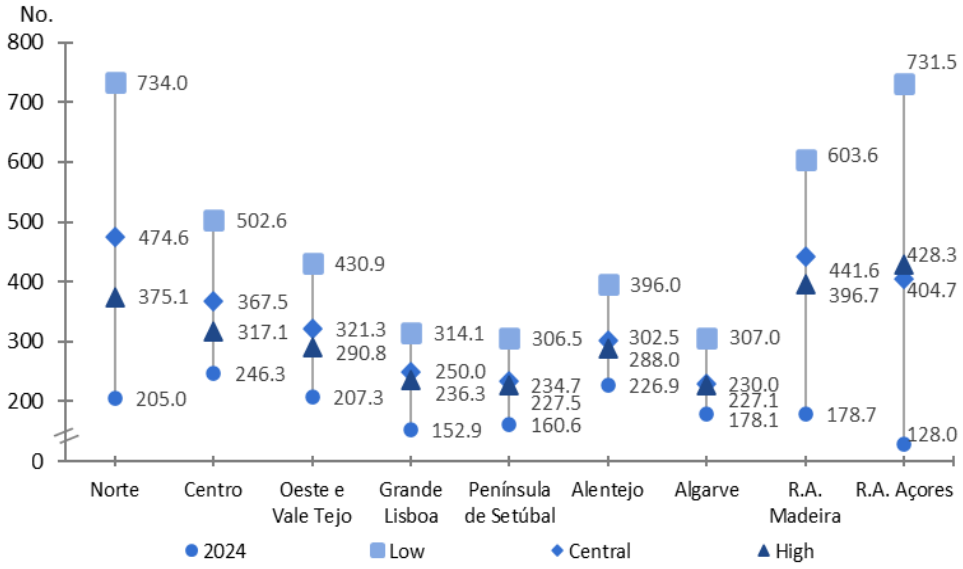
Although demographic ageing will occur in all regions under every scenario, it is expected to be more pronounced in the Região Autónoma dos Açores, the Norte region, and the Região Autónoma da Madeira.

In the *central scenario*, the ageing ratio in the Região Autónoma dos Açores, which was 128 elderly persons per 100 younger persons in 2024, is projected to increase to 405 by 2100. In the Norte region, the ageing ratio is expected to rise from 205 in 2024 to 475 in 2100. In the Região Autónoma da Madeira, the ageing ratio is projected to increase from 179 in 2024 to 442 in 2100.

The Norte region is projected to be the most aged region in 2100 (compared to the Centro region in 2024), while the Algarve is expected to be the least aged region in 2100 (compared to the Região Autónoma dos Açores in 2024).

Figure 7

AGEING RATIO, NUTS 2, 2024 (ESTIMATES) E 2100 (PROJECTIONS, BY SCENARIO)



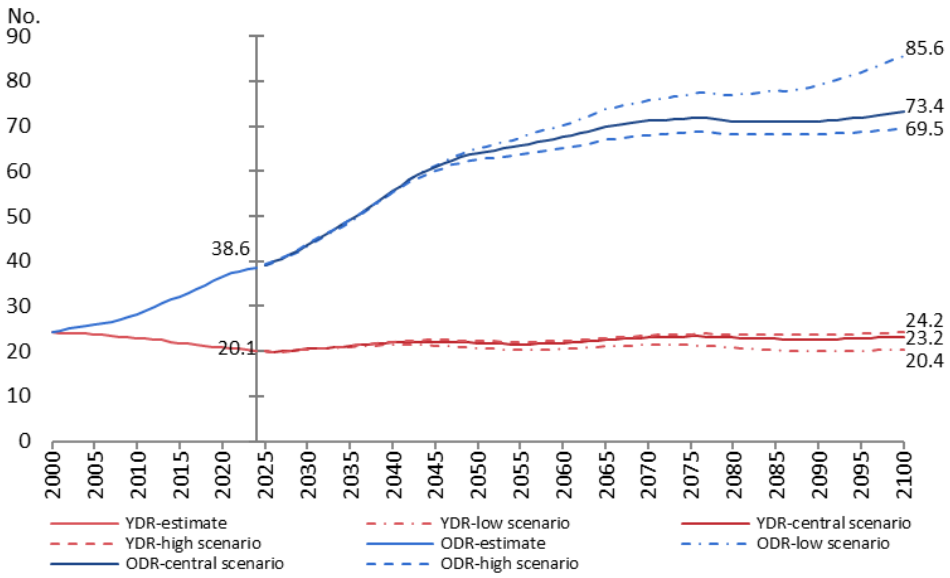
THE YOUNG-AGE DEPENDENCY RATIO WILL TEND TO REMAIN STABLE, WHILE THE OLD-AGE DEPENDENCY RATIO WILL TEND TO INCREASE.

The young-age dependency ratio tends to remain relatively stable over time. In the *central scenario*, it could increase from the current 20 to 23 young persons per 100 working-age persons by 2100. This ratio could range between 20 and 24 young persons per 100 working-age persons in the low and *high scenarios*, respectively.

The old-age dependency ratio, which corresponds to the number of elderly persons per 100 persons aged 15 to 64, tends to increase. In the *central scenario*, it could rise from 39 in 2024 to 73 elderly persons per 100 working-age persons by 2100. In the *low scenario*, the number could more than double compared to 2024, reaching 86 by 2100. In the *high scenario*, it is projected to be 70.

Figure 8

YOUNG-AGE DEPENDENCY RATIO (YDR) AND OLD-AGE DEPENDENCY RATIO (ODR), PORTUGAL, 2024-2100 (ESTIMATES AND PROJECTIONS)



The Península de Setúbal, Grande Lisboa, and Algarve regions, which had the highest young-age dependency ratios in 2024, are also projected to have the highest number of young persons per 100 working-age persons in 2100.

The Região Autónoma dos Açores and Região Autónoma da Madeira, which had the lowest elderly persons per 100 working-age persons in 2024 (26 and 32, respectively), may reach ratios of 84 and 87, respectively, in 2100 under the *central scenario*—surpassed only by the Norte region (with 97 elderly persons per 100 persons aged 15 to 64).

Figure 9

YOUNG-AGE DEPENDENCY RATIO, NUTS 2, 2024 (ESTIMATES) AND 2100 (PROJECTIONS, BY SCENARIO)

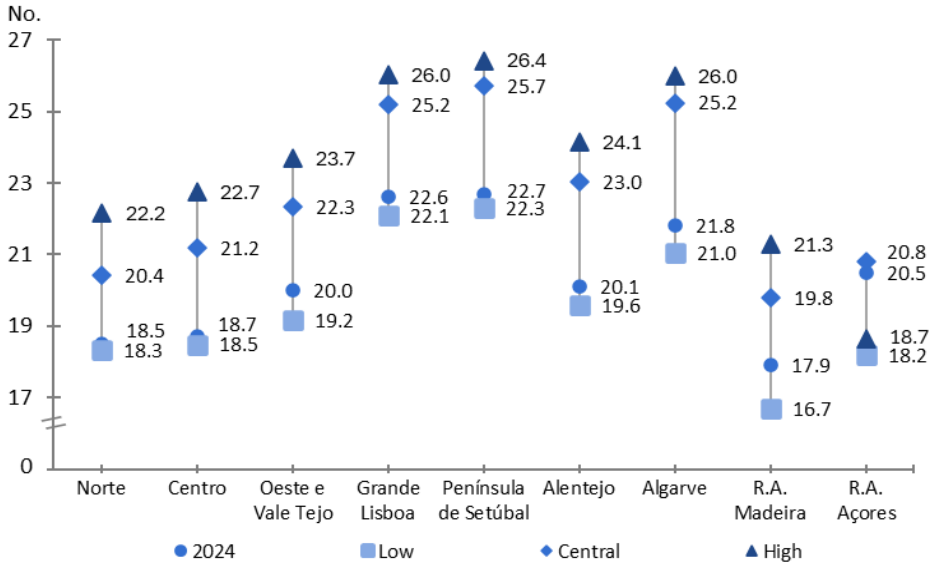
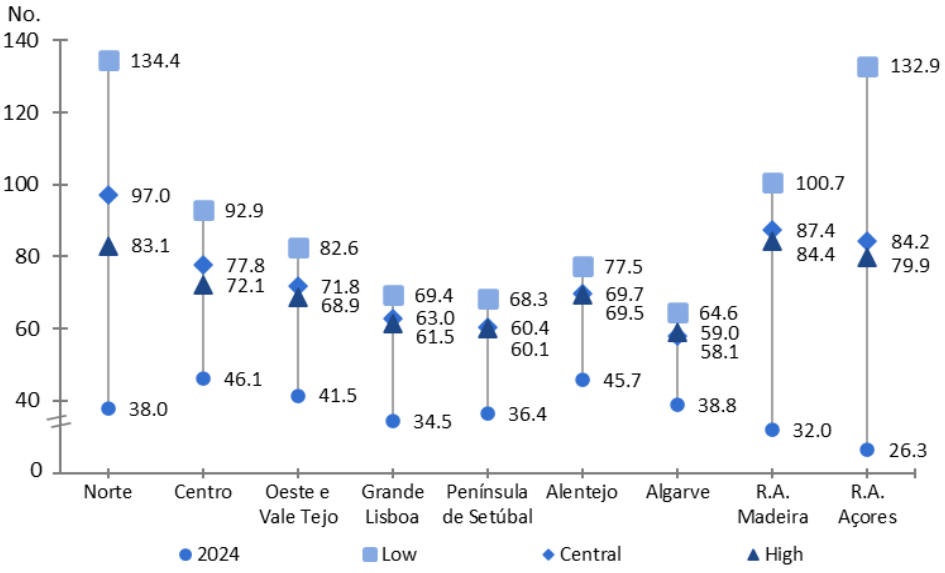


Figure 10

OLD-AGE DEPENDENCY RATIO, NUTS 2, 2024 (ESTIMATES) AND 2100 (PROJECTIONS, BY SCENARIO)



The combined effects of declining demographic trend and population ageing are clearly reflected in the evolution of Portugal's age pyramids over the projection period.

IN 2050, IN THE *CENTRAL SCENARIO*, THE RESIDENT POPULATION IN PORTUGAL WILL BE 10.3 MILLION.

In 2050, the resident population in Portugal could range from 9.3 million, in the *low scenario*, to 11.4 million, in the *high scenario*.

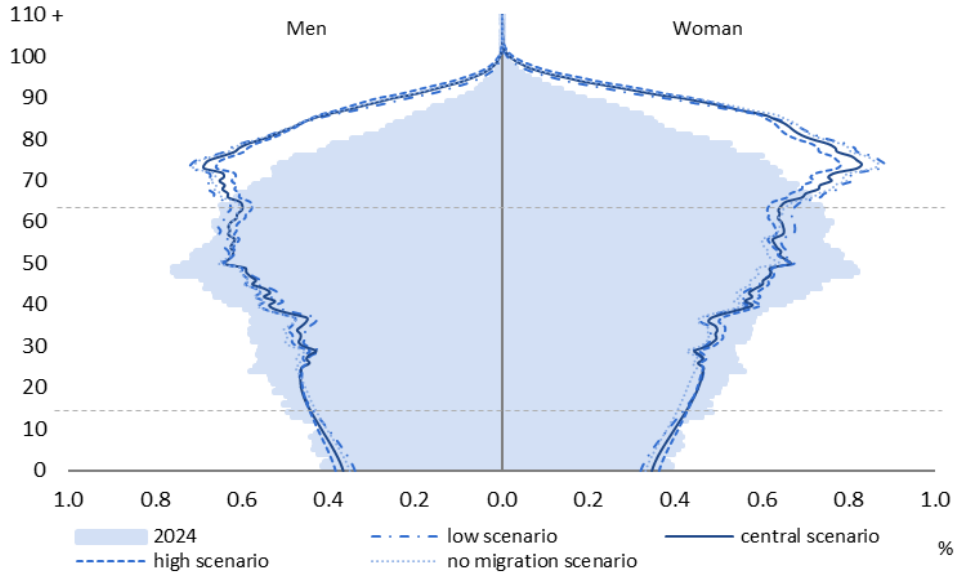
Compared to the resident population in 2024, the population will be older, with a narrowing base of the age pyramid—more pronounced in the *low scenario* and less so in the *high scenario*. The top of the pyramid widens significantly, and both the reduction and ageing of the working-age population become more evident.

In the *central scenario*, by 2050, the proportion of elderly people is projected to increase to 34.5% (from 24.3% in 2024), while the proportion of people aged 15 to 64 is expected to decline to 53.8% (from 63.0% in 2024). The share of young people (aged 0 to 14) will decrease to 11.7%, down from 12.6% in 2024.

The median age in the *central scenario* could rise by more than five years for both men and women. By 2050, the median age is projected to reach 50.9 years for men (45.5 in 2024) and 54.4 years for women (48.9 in 2024).

Figure 11

AGE PYRAMID, PORTUGAL, 2024 (ESTIMATES) AND 2050 (PROJECTIONS, BY SCENARIO)



IN 2100, IN THE *CENTRAL SCENARIO*, THE RESIDENT POPULATION IN PORTUGAL WILL BE 8.3 MILLION

In 2100, the population could range from 5.4 million in the *low scenario* to 11.6 million in the *high scenario*. Regardless of the scenario, the population will be significantly older, and the effects of the different assumptions are clearly visible across all age groups. The top of the age pyramid will widen substantially, highlighting the reduction and ageing of both the working-age population and women of childbearing age.

In the *central scenario*, by 2100, the proportion of elderly people is expected to increase to 37.3% (compared to 24.3% in 2024), while the proportion of people aged 15 to 64 will decline to 50.9% (from 63.0% in 2024). The share of young people is projected to be 11.8% (12.6% in 2024).

The median age could range from 50.8 to 56.3 years for men, and from 54.2 to 60.0 years for women, in the high and *low scenarios* respectively. In the *central scenario*, the median age will be 52.1 years for men and 55.9 years for women.

Figure 12

AGE PYRAMID, PORTUGAL, 2024 (ESTIMATES) AND 2100 (PROJECTIONS, BY SCENARIO))

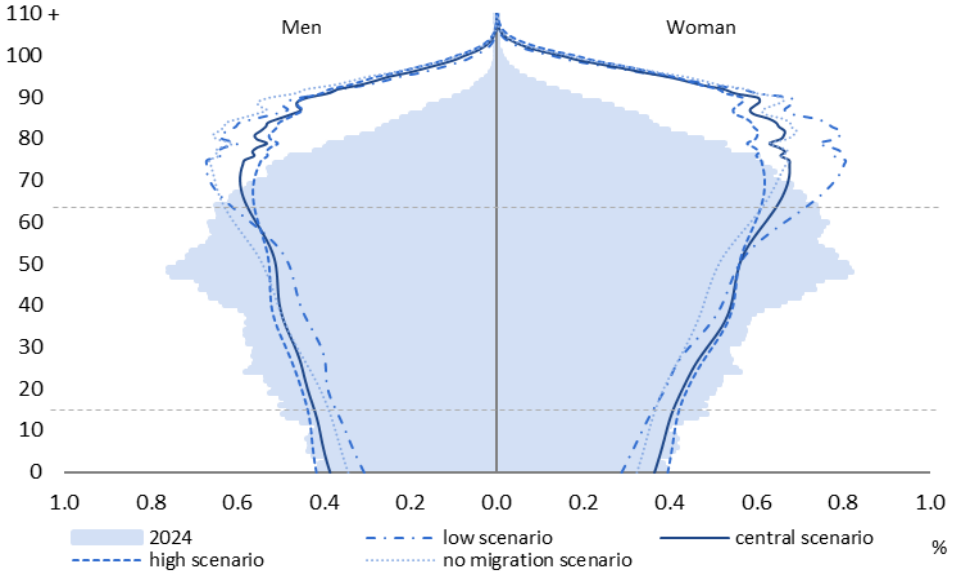


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Table 1

MAIN RESULTS, PORTUGAL AND NUTS 2, 2024 (ESTIMATES) AND 2100 (PROJECTIONS)

Portugal and NUTS 2 regions	Projection scenarios	Total population		Population 0-14 years		Population 15-64 years		Population 65 years and older		Ageing ratio		Young dependency ratio		Elderly dependency ratio	
		2024	2100	2024	2100	2024	2100	2024	2100	2024	2100	2024	2100	2024	2100
		N.º													
Portugal	*Low*	10,749,635	5,432,958	1,359,489	537,928	6,774,802	2,637,347	2,615,344	2,257,683	192.4	419.7	20.1	20.4	38.6	85.6
	Central		8,325,674		982,399		4,235,769		3,107,506		316.3		23.2		73.4
	High		11,567,332		1,444,471		5,971,663		4,151,198		287.4		24.2		69.5
	No migration		5,993,015		636,725		2,936,088		2,420,202		380.1		21.7		82.4
Norte	*Low*	3,692,842	1,103,122	437,245	79,938	2,359,390	436,428	896,207	586,756	205.0	734.0	18.5	18.3	38.0	134.5
	Central		1,958,542		184,063		900,896		873,583		474.6		20.4		97.0
	High		2,970,779		320,635		1,447,445		1,202,699		375.1		22.2		83.1
	No migration		1,705,923		143,898		778,131		783,894		544.8		18.5		100.7
Centro	*Low*	1,717,560	771,783	195,166	67,484	1,041,732	365,117	480,662	339,182	246.3	502.6	18.7	18.5	46.1	92.9
	Central		1,204,903		128,207		605,584		471,112		367.5		21.2		77.8
	High		1,718,395		200,554		881,876		635,965		317.1		22.7		72.1
	No migration		812,325		76,147		386,968		349,210		458.6		19.7		90.2
Oeste e Vale do Tejo	*Low*	865,315	453,560	107,177	43,095	535,936	224,767	222,202	185,698	207.3	430.9	20.0	19.2	41.5	82.6
	Central		666,403		76,686		343,321		246,396		321.3		22.3		71.8
	High		910,849		112,035		473,071		325,743		290.8		23.7		68.9
	No migration		473,508		49,732		234,892		188,884		379.8		21.2		80.4
Grande Lisboa	*Low*	2,156,612	1,664,016	309,821	191,951	1,373,075	869,148	473,716	602,917	152.9	314.1	22.6	22.1	34.5	69.4
	Central		2,428,424		325,046		1,290,616		812,762		250.0		25.2		63.0
	High		3,258,411		452,265		1,737,583		1,068,563		236.3		26.0		61.5
	No migration		1,537,100		191,430		783,191		562,479		293.8		24.4		71.8
Península de Setúbal	*Low*	848,507	598,800	120,856	70,023	533,511	314,149	194,140	214,628	160.6	306.5	22.7	22.3	36.4	68.3
	Central		875,767		121,043		470,657		284,067		234.7		25.7		60.4
	High		1,157,604		163,995		620,472		373,137		227.5		26.4		60.1
	No migration		630,348		82,458		330,883		217,007		263.2		24.9		65.6
Alentejo	*Low*	474,894	252,067	57,638	25,034	286,465	127,904	130,791	99,129	226.9	396.0	20.1	19.6	45.7	77.5
	Central		343,067		41,009		178,021		124,037		302.5		23.0		69.7
	High		439,845		54,821		227,120		157,904		288.0		24.1		69.5
	No migration		258,233		28,727		130,267		99,239		345.5		22.1		76.2
Algarve	*Low*	492,747	422,915	66,836	47,940	306,876	227,803	119,035	147,172	178.1	307.0	21.8	21.0	38.8	64.6
	Central		578,339		79,653		315,499		183,187		230.0		25.2		58.1
	High		735,948		103,384		397,737		234,827		227.1		26.0		59.0
	No migration		331,071		42,222		172,480		116,369		275.6		24.5		67.5
R. A. Açores	*Low*	241,718	75,347	33,780	5,453	164,684	30,004	43,254	39,890	128.0	731.5	20.5	18.2	26.3	132.9
	Central		146,971		14,915		71,702		60,354		404.7		20.8		84.2
	High		217,315		20,416		109,467		87,432		428.3		18.7		79.9
	No migration		122,831		10,965		59,472		52,394		477.8		18.4		88.1
R. A. Madeira	*Low*	259,440	91,348	30,970	7,010	173,133	42,027	55,337	42,311	178.7	603.6	17.9	16.7	32.0	100.7
	Central		123,258		11,777		59,473		52,008		441.6		19.8		87.4
	High		158,186		16,366		76,892		64,928		396.7		21.3		84.4
	No migration		121,676		11,146		59,804		50,726		455.1		18.6		84.8

TECHNICAL NOTE

Resident population projections illustrate how the size and structure of a population might hypothetically evolve over time. This information is a key tool for supporting decision-making in the development of economic and social policies, including those related to pension, health, education, and housing systems. The projections are periodically updated to reflect revised assumptions about fertility, mortality, and migration—both international and internal.

The publication "Resident Population Projections by Sex and Age, Portugal and NUTS 2 (NUTS 2024), 2025–2100" was developed using the cohort-component method, in which the base population is disaggregated by sex and birth cohorts, defined by year of birth, and is continuously updated over time. These updates incorporate different scenario-based combinations of assumptions regarding the future evolution of the components of demographic change—fertility, mortality, and migration—along with natural annual ageing, through the final year of the projection period (2100). The year 2025 marks the beginning of the projection period. The base population used in this exercise corresponds to the Provisional Estimates of Resident Population as of 31 December, 2024, produced by Statistics Portugal (INE) and released in June 2025.

In formulating hypotheses regarding the future evolution of population change components, particularly migration, INE benefited from the contributions of a group of experts, to whom we extend our sincere thanks for their availability and collaboration: Jorge Miguel Bravo, of the Information Management School at Universidade Nova de Lisboa; Pedro Góis, of the Faculty of Economics at Universidade de Coimbra; Jorge Malheiros, of the Institute of Geography and Spatial Planning at the Universidade de Lisboa; João Peixoto, of the Lisbon School of Economics & Management, at the Universidade de Lisboa; Rui Pena Pires, of Instituto Universitário de Lisboa - ISCTE; and Maria João Valente Rosa, of Social Sciences and Humanities School, at the Universidade Nova de Lisboa

Based on different scenarios, the projections show varying, often divergent, population trends. Thus, population projections represent a "if-then" analysis: they illustrate possible trajectories of population change, with outcomes conditioned both by the structure and composition of the initial population and by the assumptions regarding the evolution of fertility, mortality, and migration throughout the projection period.

Note that population projections are not forecasts: a forecast shows the most likely future development of a population, while "if-then" population projections are calculated based on assumptions—and often their variations—about future changes. Furthermore, projections can be made for scenarios that are both plausible and realistic, as well as for those that are less likely or implausible (such as, for example, a "no migration" scenario).

It should also be noted that projections produced by different entities (e.g., European Union statistical institutes and Eurostat) generally differ not only in their choice of scenarios and assumptions but also in their methodologies, producing different results. Users are encouraged to review the methodological details available on the respective websites and publications, and to consider the high degree of uncertainty inherent in these exercises. Beyond the

uncertainty associated with future demographic changes—which increases with the length of the projection period— events such as armed conflicts, epidemics, or medical breakthroughs, among others, may alter demographic trends and are impossible to predict.

The formulation of hypotheses concerning the future evolution of fertility, mortality, and migration components was based on the observation, analysis, and modelling of past trends for each component, including the most recent developments, as well as on expert opinions regarding their prospective trajectories based on the currently available information. It should be noted that, in modelling the evolution of each component, only the temporal dynamics of demographic indicators were considered, and no other exogenous variables were incorporated into the models.

Three scenarios were considered for each component—central, optimistic, and pessimistic—reflecting the inherent uncertainty in accurately predicting future levels of fertility, mortality, and migration. These alternative assumptions aim to illustrate a domain of possible future results, although is not stablished there will be any future result, or that future results are necessarily included in this domain of figures.

Finally, it should be emphasized that the results are conditioned by the structure and composition of the population at the starting point, as well as by the different patterns of fertility, mortality, and migration assumed in each assumption throughout the projection period within each scenario. Given that the base population differs and the current assumptions incorporate more recent demographic information, the results obtained in this exercise differ from those previous exercises and are not directly comparable.

It should also be considered that the longer the projection period, the greater the associated uncertainty; therefore, long-term results should be interpreted with increased caution.

Fertility

The projection of the fertility component was conducted in multiple stages. Initially, the Schmertmann model (2003, 2005) was applied to Portugal's age-specific fertility rates observed between 1980 and 2024, resulting in time series of estimated model parameters (α, R, P, H). Subsequently, an Autoregressive Vector Model (VAR) was applied for modelling and forecasting these parameters. By combining the VAR forecasts with the Schmertmann model, age-specific fertility rates and projected total fertility rates were obtained. In a second stage, the plausibility of the projected fertility curves for Portugal was assessed based on expert judgment.

The assumptions concern the future evolution of the Total Fertility Rate (TFR), defined as the average number of children per woman of childbearing age (15 to 49 years). The three assumptions considered are as follows:

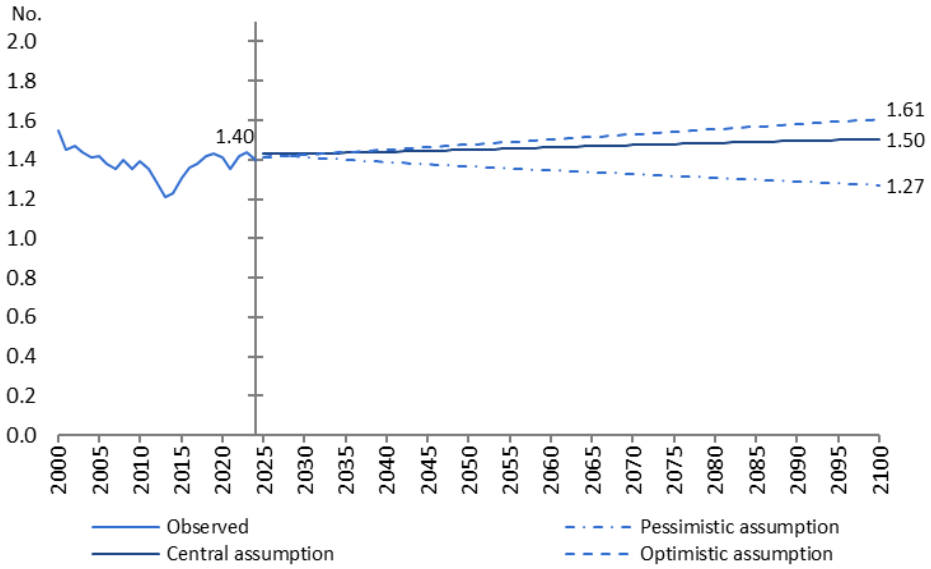
(1) Central assumption – Projects a moderate recovery in fertility levels, with the TFR reaching 1.50 children per woman by 2100 (compared to 1.40 in 2024).

(2) Optimistic scenario – Projects a more pronounced recovery in fertility, with the TFR reaching 1.61 children per woman by 2100.

(3) Pessimistic scenario – Projects a decline in fertility, with the TFR falling to 1.27 children per woman by 2100.

Figure 13

TOTAL FERTILITY RATE, PORTUGAL, 2000-2100 (OBSERVED AND ASSUMPTIONS)



For NUTS 2 regions, as for Portugal overall, the Schmertmann model (2003, 2005) was first applied to the region-specific fertility rates observed between 1992 and 2024, generating time series for the estimated model parameters. In the second stage, specific fertility rates were projected for each region under the assumption that, starting from their respective fertility levels observed in 2024, the trajectories of the model parameters projected at the national level would be followed at the regional level.

Mortality

For the mortality component projection in Portugal, the Poisson Lee-Carter model was employed (Lee and Carter, 1992; Bravo, 2007; Brouhns, Denuit, and Vermunt, 2002), with smoothing of the estimated β_x coefficients using penalised least-squares/maximum likelihood methods as proposed by Delwarde, Denuit, and Eilers (2007). The model was applied to crude estimates of age-specific mortality rates for the period 1980–2024, covering ages 0 to 99 years. To close the mortality tables and extrapolate mortality behaviour at advanced ages (85+), the method developed by Denuit and Goderniaux (2005) was used. The plausibility of the results was assessed based on *expert judgment*.

The assumptions focus on the expected evolution of mortality in Portugal, particularly future levels of life expectancy at birth for men and women. Three assumptions were considered for longevity in Portugal.

The assumptions concern the future levels of life expectancy at birth for men and women. Accordingly, the three assumptions considered were:

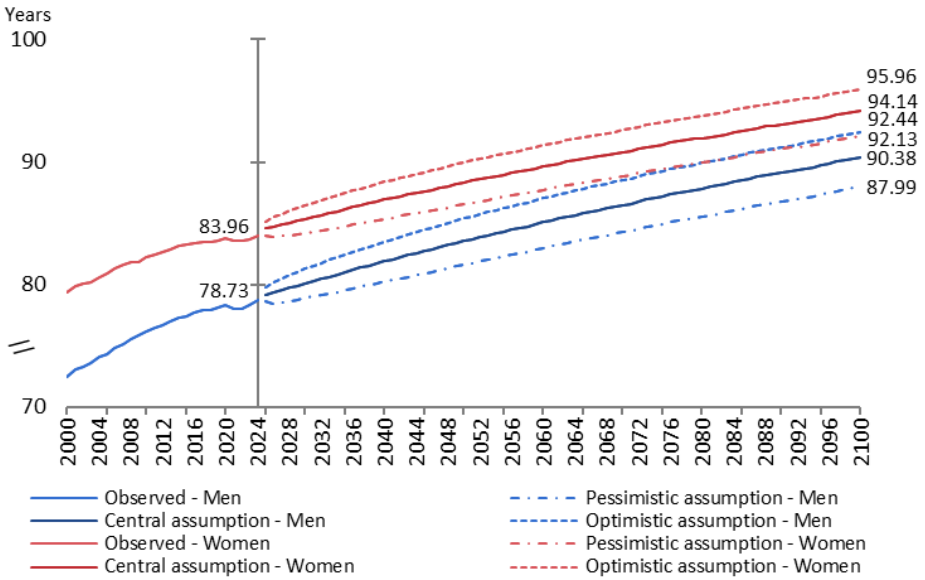
(1) Central scenario – Assumes continuation of mortality improvement trends observed prior to the COVID-19 pandemic, with life expectancy at birth reaching 90.38 years for men and 94.14 years for women in 2100.

(2) Optimistic scenario – Projects a more pronounced increase in life expectancy compared to the central scenario, reaching 92.44 years for men and 95.96 years for women in 2100.

(3) Pessimistic scenario – Anticipates a slightly less marked increase in life expectancy than the central scenario, with life expectancy reaching 87.99 years for men and 92.13 years for women in 2100.

Figure 14

LIFE EXPECTANCY AT BIRTH, BY SEX, PORTUGAL, 2000-2100 (OBSERVED AND ASSUMPTIONS)



For NUTS 2 regions, relational models within the framework of generalized linear models (GLMs) were applied, incorporating as covariates the mortality rates of the reference population (Portuguese male or female population), actuarial age, chronological time, and interaction effects (Delwarde and Denuit, 2005). Additionally, non-parametric relational models within the GLM framework were used, involving graduation techniques and age-specific improvement factors estimated based on the reference population (Tomas & Planchet, 2014).

International Migrations

The method proposed by Hyndman et al. (2013) was applied to project international immigration and emigration flows. The model was estimated separately for emigration and immigration over the period 1991–2024. The plausibility of the projections was assessed through expert judgment, and adjustments were made where necessary.

The assumptions refer to potential developments in international migration flows, modelled independently for immigration and emigration. The projected net migration is calculated as the difference between the projected number of immigrants and the projected number of emigrants.

The following assumptions were considered:

(1) Central scenario – Assumes a gradual decrease in annual international net migration over the projection period, reaching a net migration balance of 25,488 persons in 2100.

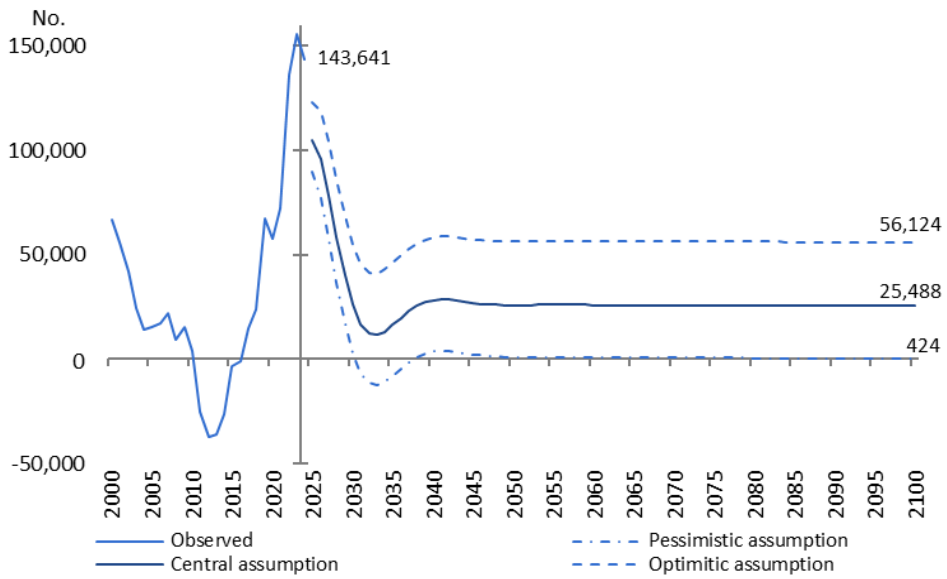
(2) Optimistic scenario – Envisions a reduction in emigration and an increase in immigration beyond the levels assumed in the central scenario, resulting in a positive net migration balance of 56,124 persons in 2100.

(3) Pessimistic scenario – Assumes an increase in emigration and a decrease in immigration relative to the central scenario, with the net migration balance falling to 424 persons in 2100.

(4) Zero migration scenario – Assumes the unlikely case of no international migration flows throughout the projection period. This scenario serves to assess the impact of migration on population dynamics.

Figure 15

NET MIGRATION, TOTAL, PORTUGAL, 2000-2100 (OBSERVED AND ASSUMPTIONS)



The projection of migration flows to NUTS 2 regions was carried out in two stages. In the first stage, the model developed by Hyndman et al. (2013) was applied to the number of emigrants and immigrants from each region for the period 1991–2024. The regional forecasts of the number of emigrants and immigrants for each projection year were then used to calculate the share of each region in the corresponding national flows.

Projections by sex and age were derived under the assumption that the evolution of the age and sex structure of migratory flows at the regional level follows the same pattern as that projected for Portugal as a whole.

The combination of alternative assumptions for the future evolution of fertility, mortality and migration components allows for the construction of multiple population **projection scenarios**. In this projection exercise, four scenarios were defined for both Portugal and the NUTS 2 regions:

CENTRAL SCENARIO – This scenario considered the central assumptions for fertility, mortality, and migration.

LOW SCENARIO – This scenario considered the pessimistic assumptions for fertility, mortality, and migration.

HIGH SCENARIO – This scenario considered the optimistic assumptions for fertility, mortality, and migration.

NO MIGRATION SCENARIO – Identical to the central scenario but assumes no international migration flows.

Table 2

POPULATION PROJECTION SCENARIOS, ACCORDING TO THE ASSUMPTIONS OF EVALUATION OF COMPONENTS, PORTUGAL AND NUTS 2, 2024 (LAST YEAR OBSERVED) AND 2100 (LAST YEAR OF PROJECTION)

Portugal and NUTS 2 regions	Projection scenarios	Total ferttility rate		Life expectancy at birth				Net migration	
		2024	2100	2022-2024		2100		2024	2100
				Men	Women	Men	Women		
		No.		Years				No.	
Portugal	*Low*	1.40	1.27	78.73	83.96	87.99	92.13	143,641	424
	Central		1.50			90.38	94.14		25,488
	High		1.61			92.44	95.96		56,124
	No migration		1.50			90.38	94.14		-
Norte	*Low*	1.21	1.16	79.47	84.48	87.49	91.39	31,452	-5,172
	Central		1.35			90.26	93.76		3,091
	High		1.48			92.00	95.22		12,967
	No migration		1.35			90.26	93.76		-
Centro	*Low*	1.31	1.19	78.98	84.35	87.71	91.57	32,254	511
	Central		1.42			89.52	93.47		4,530
	High		1.54			91.08	95.05		9,463
	No migration		1.42			89.52	93.47		-
Oeste e Vale do Tejo	*Low*	1.42	1.27	78.40	83.26	87.23	91.25	16,973	356
	Central		1.53			89.11	92.79		2,155
	High		1.62			90.73	94.82		4,417
	No migration		1.53			89.11	92.79		-
Grande Lisboa	*Low*	1.65	1.44	78.60	84.00	87.22	91.38	29,105	3,189
	Central		1.72			89.45	93.41		9,286
	High		1.79			91.15	94.96		16,883
	No migration		1.72			89.45	93.41		-
Península de Setúbal	*Low*	1.69	1.46	78.01	83.12	87.01	91.00	14,834	414
	Central		1.75			88.92	92.58		2,518
	High		1.80			90.57	94.64		5,085
	No migration		1.75			88.92	92.58		-
Alentejo	*Low*	1.50	1.32	77.19	83.36	87.14	91.14	4,247	263
	Central		1.59			88.72	92.82		949
	High		1.65			90.66	94.75		1,826
	No migration		1.59			88.72	92.82		-
Algarve	*Low*	1.64	1.37	77.46	83.23	87.27	91.41	9,901	1,486
	Central		1.72			88.58	92.72		2,610
	High		1.78			90.22	94.95		3,986
	No migration		1.72			88.58	92.72		-
R. A. Açores	*Low*	1.22	1.11	74.87	81.50	85.17	89.96	1,276	-415
	Central		1.35			86.51	92.02		310
	High		1.16			88.37	93.94		1,145
	No migration		1.35			86.51	92.02		-
R. A. Madeira	*Low*	1.25	1.16	75.87	82.08	85.26	90.27	3,599	-208
	Central		1.36			86.70	92.11		39
	High		1.44			88.57	94.16		352
	No migration		1.36			86.70	92.11		-

For more detailed information, please refer to the methodological document on Resident Population Projections.

CONCEPTS

Ageing ratio: 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).

Life expectancy at birth: The mean number of years that a newborn child can expect to live if subjected throughout his life to the current mortality conditions (age specific probabilities of dying).

Median age: Age that divides a population into two numerically equal groups, i.e., half of the people are younger than this age and half are older.

Migration: Movement of a person across a given spatial boundary, with the intention of changing residence temporarily or permanently.

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 1000 (10^3) inhabitants).

Net migration: The difference between immigration into and emigration from the country or region during a given period, usually a calendar year.

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).

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.

Total Fertility Rate (TFR): Average number of live children born per woman of childbearing age (aged 15 to 49), assuming that women are subject to the fertility rates observed at the time. Value resulting from the sum of the fertility rates by age, year by year or five-year groups, between the ages of 15 and 49, observed in a given period (usually a calendar year).

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).

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SOURCES

Provisional Estimates of Resident Population, 2024: Released in June 2025, these estimates are part of the series of *Provisional Annual Estimates of Resident Population*, which began in 2021 and are based on the finalized results of the 2021 Census.

Resident population estimates are produced using the cohort component method and follow the census-based concept of resident population. They are calculated by sex and age, down to the municipality level, and are based on the demographic components of natural change and migration. These estimates use information from other

statistical operations conducted by Statistics Portugal (INE), namely data on live births, deaths, immigration and emigration.

Regarding the natural component (live births and deaths), the information derives from vital statistics, based on events subject to compulsory civil registration—namely, the registration of live births and deaths. The 2024 data are calculated based on records collected from Civil Registry Offices up to March 2025.

As migration movements are not directly recorded in Portugal, they are estimated using data from other INE statistical operations and, where available, from administrative sources.

These provisional estimates may be revised in accordance with INE's Revision Policy. Future revisions will apply a methodology that strengthens the use of administrative sources—particularly for the migration component, which is currently derived from a sample survey. In this context, administrative data from the Agency for Integration, Migration and Asylum (AIMA), the Institute of Registries and Notary (IRN) and the Directorate General of Consular Affairs and Portuguese Communities will be essential, alongside other sources already available to INE.

Live Birth and Death Statistics: Data on live births and deaths are obtained through statistical operations designed to collect, directly and exhaustively, information on these demographic events occurring within the national territory. These operations are based on events subject to mandatory civil registration (birth and death records) within the Integrated Civil Registration and Identification System (SIRIC). In addition to the administrative data included in the registration records, Statistics Portugal (INE) also collects a complementary set of statistically relevant variables, as identified in the corresponding statistical instruments. Data are recorded and transmitted electronically, in accordance with technical specifications defined by INE, and established in cooperation with the Institute of Registries and Notary (IRN) and the Institute for the Financial Management and Infrastructures of Justice (IGFEJ).

Annual Emigration Estimates: Annual Emigration Estimates are derived from the Outward Migration Survey (IMMS). The number of emigrants corresponds to the figures calculated using data from the IMMS for the reference year.

Annual Immigration Estimates: Annual Immigration Estimates are calculated based on results from the Employment Survey (IE), supplemented—where available—with administrative data, particularly from the Agency for Integration, Migration and Asylum (AIMA) and the Institute of Registries and Notary (IRN).