Resident Population Projections

2012-2060

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Resident population in Portugal tends to decrease until 2060 in any of the projected scenarios. In the central scenario, population decreases from 10.5 millions of people in 2012, to 8.6 millions in 2060.

In addition to the population decline changes in the age structure of the population are expected, resulting in a continued and strong demographic aging.

Thus, between 2012 and 2060, the aging index increases from 131 to 307 elderly for every 100 young people in the central scenario. In the same period and scenario, the potential sustainability index changes from 340 to 149 persons of working age for every 100 elderly persons.

Statistics Portugal publishes the results of a new exercise of population projections for Portugal – Resident Population Projections 2012-2060, by sex and age (all ages up to 95 years and over), for Portugal and NUTS II regions.

This exercise is based upon the Provisional Annual Resident Population Estimates in Portugal on December 31st 2012 and a set of demographic assumptions about fertility, mortality and international migrations, derived from observation, analysis and statistical modelling of past trends for each of those components, particularly in the most recent years, using the cohort-component method. Under this method the initial population, by sex, is grouped by cohorts or generations, defined by year of birth, and continuously updated according to the defined assumptions of evolution for each component, and the natural annual aging of population.

Assumptions for the evolution of total fertility rate, life expectancy at birth and international net migration:

1. Fertility – three assumptions of evolution for Portugal:

    a. Pessimistic assumption - maintenance, until 2060, of the Total Fertility Rate (TFR) around 1.30 children per woman (1.28 in 2012);

    b. Optimistic assumption – recovery of the TFR, by 2060, to 1.80 children per woman, based on the results from the 2013 Fertility Survey. According to these results, the "expected fertility" (average number of children per individual, added by the number of children they expect to have in the future) of women aged between 18 and 49 years old living in Portugal assumed that value, which reflects some optimism on the future recovery of the TFR;

    c. Central assumption – moderate recovery of future fertility levels until 2060, with the TFR reaching a value between the first two assumptions: 1.55 children per women.

2. Mortality – two assumptions of evolution for Portugal:

    a. Central assumption – in this assumption the gains in life expectancy observed over the last recent years are expected to persist, with life expectancy at birth reaching 84.21 years for man and 89.88 years for women in 2060;

    b. Optimistic assumption – compared to the central assumption, in this case life expectancy at birth is assumed to increase at a higher rate, reaching 86.44 years for man and 92.15 years for women in 2060.

3. International migrations – three assumptions of evolution for Portugal:

    a. Pessimistic assumption – maintenance of a negative annual international net migration;

    b. Optimistic assumption – recovery of the annual international net migration to positive values by 2020;

    c. "No migration" assumption – the absence of international migration flows is strongly unlikely, but this assumption allows for measuring the impact of migrations in population change (the natural change of population).

Based on these assumptions, four **scenarios** of evolution for resident population are developed:

1. LOW SCENARIO: the pessimistic assumption for the fertility component, the central assumption for the mortality component and a negative net international migration are considered;

2. CENTRAL SCENARIO: the central assumption for the fertility component, the central assumption for the mortality component and a positive net migration are considered;

3. HIGH SCENARIO: combines the optimistic assumptions for both the fertility component and the mortality component, and a positive net migration;

4. NO MIGRATION SCENARIO: the same assumptions as the central scenario, but without migrations.

(The methodology used is described in detail in the methodological document available at www.ine.pt – only in Portuguese)

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Population projection scenarios, by assumptions for evolution of components, Portugal and NUTS II regions, 2012 (last observed year) e 2060 (last projection year)

Portugal and NUTS II regions	Projection scenarios	Total Fetility Rate		Life expectancy at birth				Net migration	
		2012	2060	2010-2012		2060		2012	2060
				Male	Female	Male	Female		
		no.		years				no.	
Portugal	*Low*	1.28	1.30	76.7	82.6	84.2	89.9	- 37 352	- 19 289
	Central		1.55			84.2	89.9		19 493
	High		1.80			86.4	92.2		19 493
	No migration		1.55			84.2	89.9		
Norte	*Low*	1.15	1.25	77.1	82.9	84.0	89.7	- 16 863	- 7 989
	Central		1.51			84.0	89.7		3 852
	High		1.76			86.3	92.1		3 852
	No migration		1.51			84.0	89.7		
Centro	*Low*	1.19	1.25	77.1	82.9	84.5	90.1	- 8 139	- 3 773
	Central		1.51			84.5	90.1		3 941
	High		1.76			86.7	92.4		3 941
	No migration		1.51			84.5	90.1		
Lisboa	*Low*	1.51	1.40	76.5	82.5	83.7	89.6	- 8 599	- 5 142
	Central		1.66			83.7	89.6		7 670
	High		1.86			86.0	91.9		7 670
	No migration		1.66			83.7	89.6		
Alentejo	*Low*	1.33	1.30	76.4	82.0	84.0	89.5	- 1 910	- 1 363
	Central		1.56			84.0	89.5		976
	High		1.81			86.2	91.9		976
	No migration		1.56			84.0	89.5		
Algarve	*Low*	1.43	1.35	76.4	82.9	83.8	90.1	- 942	- 290
	Central		1.61			83.8	90.1		2 139
	High		1.86			86.0	92.3		2 139
	No migration		1.61			83.8	90.1		
R. A. Açores	*Low*	1.34	1.32	72.8	79.9	80.7	87.5	- 133	- 324
	Central		1.58			80.7	87.5		277
	High		1.83			83.3	90.0		277
	No migration		1.58			80.7	87.5		
R. A. Madeira	*Low*	1.08	1.19	73.2	80.3	81.3	87.5	- 766	- 408
	Central		1.45			81.3	87.5		638
	High		1.70			83.8	89.9		638
	No migration		1.45			81.3	87.5		

Resident Population Projections – 2012-2060

The final **results** are determined, on the one hand, by the structure and composition of the population at the starting moment (2012) and, on the other hand, by the different behaviour patterns established in each of the different assumptions for the fertility, mortality and migrations components, that in turn are combined in four projection scenarios, throughout the period from 2013 to 2060, not covering, however, the impact of other exogenous circumstances. The results thus obtained have a conditional nature of the type "if... then...", and should not be interpreted as forecasts.

In any of the scenarios, resident population in Portugal tends to decrease between 2012 and 2060. This trend cuts across all NUTS II regions, except for the *central* and *high* scenarios in the Algarve region, where the population increases, and the *high* scenario projected for Lisboa, where the population size remains the same.

In addition to the population decline, changes in the age structure of the population are also expected, resulting in a strong and continuing demographic aging of population in all the four scenarios. Although population aging is projected for every NUTS II regions, it may be more accentuated in regions that currently have a lower demographic aging.

Population aging, which is present throughout the whole projection period, is a result of the combination of both a decline in the younger population (under 15 years old) and an increase in the elderly population (65 years old and over): the decrease in young population cuts across all NUTS II regions in all scenarios; the increase of elderly population is also projected to happen across all NUTS II regions in all scenarios, with the only exception of the Alentejo region in the *low* scenario.

By 2060 the population of working age (15 to 64 years old) residing in Portugal decreases in all scenarios, which, combined with the increase of the elderly population, leads to a strong decrease in the potential sustainability index (the ratio between the number of people of working age per 100 elderly people). This trend occurs in all the NUTS II regions and more sharply in regions that currently hold the highest potential sustainability indexes.

Summary table for the main results, Portugal and NUTS II regions, 2012 (population estimate) e 2060 (projection)

Portugal and NUTS II regions	Projection scenarios	Total population		Population 0-14 years		Population 15-64 years		Population 65 years and older		Aging index		Potential Sustainability Index	
		2012	2060	2012	2060	2012	2060	2012	2060	2012	2060	2012	2060
		No.											
Portugal	*Low*	10 487 289	6 346 726	1 550 201	587 623	6 904 482	3 030 165	2 032 606	2 728 938	131	464	340	111
	Central		8 575 339		992 556		4 540 143		3 042 640		307		149
	High		9 223 617		1 165 090		4 714 540		3 343 987		287		141
	No migration		7 856 281		833 925		4 059 331		2 963 025		355		137
Norte	*Low*	3 666 234	2 110 746	535 720	174 568	2 493 688	966 829	636 826	969 349	119	555	392	100
	Central		2 788 256		291 125		1 430 625		1 066 506		366		134
	High		3 014 128		348 365		1 491 543		1 174 220		337		127
	No migration		2 723 769		270 040		1 382 036		1 071 693		397		129
Centro	*Low*	2 298 938	1 258 379	310 487	104 055	1 477 585	577 104	510 866	577 220	165	555	289	100
	Central		1 709 950		182 600		884 394		642 956		352		138
	High		1 844 314		217 690		920 360		706 264		324		130
	No migration		1 581 791		154 661		796 409		630 721		408		126
Lisboa	*Low*	2 818 388	1 909 196	448 181	208 023	1 823 009	958 677	547 198	742 496	122	357	333	129
	Central		2 642 332		350 121		1 449 809		842 402		241		172
	High		2 818 302		399 080		1 495 932		923 290		231		162
	No migration		2 285 386		274 056		1 218 344		792 986		289		154
Alentejo	*Low*	748 699	398 218	101 049	35 531	468 668	186 744	178 982	175 943	177	495	262	106
	Central		536 737		60 192		280 905		195 640		325		144
	High		579 674		71 559		292 453		215 662		301		136
	No migration		511 401		53 518		262 947		194 936		364		135
Algarve	*Low*	444 390	319 930	68 943	33 615	287 313	162 837	88 134	123 478	128	367	326	132
	Central		454 489		58 818		252 910		142 761		243		177
	High		486 967		68 857		261 876		156 234		227		168
	No migration		345 651		38 673		181 930		125 048		323		145
R. A. Açores	*Low*	247 549	189 159	43 386	18 920	171 998	99 661	32 165	70 578	74	373	535	141
	Central		224 170		26 654		123 025		74 491		279		165
	High		242 713		31 814		128 550		82 349		259		156
	No migration		213 909		24 758		116 040		73 111		295		159
R. A. Madeira	*Low*	263 091	161 098	42 435	12 911	182 221	78 313	38 435	69 874	91	541	474	112
	Central		219 405		23 046		118 475		77 884		338		152
	High		237 519		27 725		123 826		85 968		310		144
	No migration		194 374		18 219		101 625		74 530		409		136