Nota e Documentos nº2 95

O impacto de diferentes cenários migratórios no envelhecimento demográfico em Portugal, 2009-2060

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Abstract:

Since the late 1990s, several studies addressed the future of the European population and the role that international migration can play in offsetting population decline and slowing down ageing. These studies have been produced for several European contexts, including the Southern European one, where the pace of ageing has been faster than the average. In a context of population ageing, the impact of the migratory flows in the Portuguese demographic structure is also a non-negligible element to consider. Despite the difficulties associated with the forecast of the migration component, due to the volatility of the international migratory flows, as well as to the shortcomings of the available databases, the main goal of this study is to evaluate the impact of different migratory scenarios in the expected population structure in Portugal (for the period 2009-2060, based on the cohort component method, with only one scenario for mortality and fertility).

Key-words: Migration, ageing, population projections.

Resumo:

A evolução demográfica da população europeia e o papel que as migrações internacionais podem desempenhar nos fenómenos do declínio e envelhecimento demográficos têm sido objecto de estudo, particularmente nos anos mais recentes. No contexto de envelhecimento demográfico, onde a esperança média de vida à nascença tem vindo a aumentar e não se prevê que os níveis de fecundidade possam recuperar para valores próximos dos necessários para assegurar a substituição das gerações, o impacto dos fluxos migratórios na estrutura populacional de Portugal constitui um elemento não negligenciável. Apesar da dificuldade associada

à previsão da componente migrações, associada não apenas à volatilidade do comportamento dos fluxos migratórios internacionais, como também à fragilidade da informação e reduzida cobertura do fenómeno nas bases de dados disponíveis, o objectivo do estudo a que nos propomos centra-se na análise do impacto de diferentes cenários migratórios na evolução da estrutura populacional em Portugal (para o período 2009-2060, com base no método das componentes, utilizando apenas um cenário para a mortalidade e fecundidade).

Palavras-chave: Migrações, envelhecimento demográfico, projecções de população.

1. Introduction: the future of European population and the role of international migration

Studies about the future of the European population and the role of immigration have been growing recently.

Some of its conclusions:

- Increasing role of immigration to explain the European demographic dynamics

- In the past (after WW2), immigration reinforced the positive total growth and diminished the pace of ageing (Haug et al., 2002)

- In the future (next 50 years), current trends suggest that its volume will increase but it will not avoid the structural trend for stabilization/decline of the total population and for ageing (Bijak et al, 2007 e Lutz e Scherbov, 2006)

- Some of the arguments: suggest that immigration is responsible for the "third demographic transition" – the change in the ethnic profile of European populations.

2. The Portuguese case: the increasing importance of immigration in demographic growth
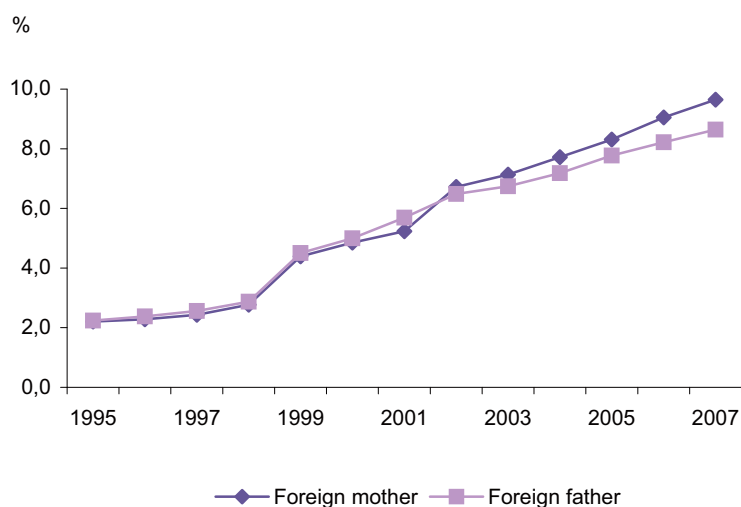
Recent studies on demography and immigration in Portugal (Rosa, 2001; Peixoto et al., 2002; Rosa et al., 2004; Peixoto, forthcoming) have examined the increasing importance of immigration in demographic growth.

Main arguments:

- The Portuguese demographic situation is similar to the one of many other European countries, including the Southern European ones: stabilization of total population and rapid ageing. Demographic projections indicate a possible decline at the medium-term and growing ageing.

- Immigration, particularly foreign immigrants, has played an increasing role in the Portuguese demographic dynamics:

    The proportion of foreign immigrants in live births and marriages is increasing fast, and it is today next or higher than 10% (see Graphs)

    The proportion among deaths is much lesser, due to the age selectivity of migration

    In short, a large part of natural increase in Portugal has currently to do with foreign populations.

- The main variable explaining the overall Portuguese demographic growth is, since long ago, international migration. The main novelty is the turnaround from emigration to immigration (although the former is far from ceasing completely).
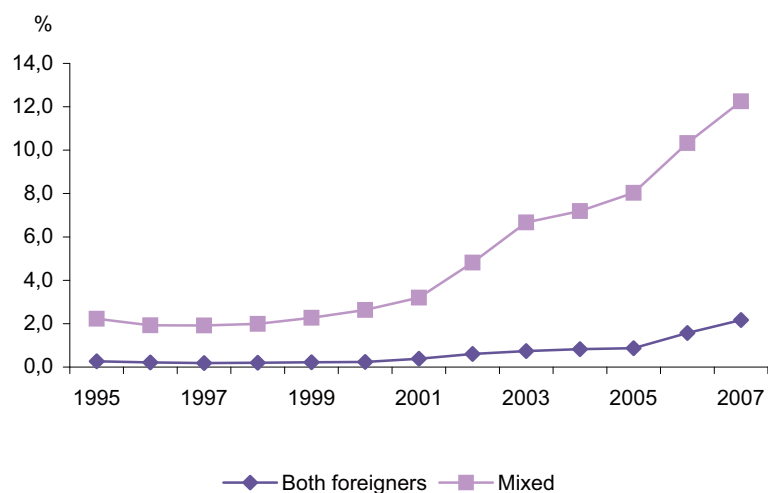
Figura 1

Live-births from foreign mother or father (%), Portugal, 1995-2007

%

Source: Statistics Portugal, authors' calculations

Figura 2

Mixed marriages and marriages between foreigners (%), Portugal, 1995-2007

%

Source: Statistics Portugal, authors' calculations

3. Simulations

3.1. Data, methodology and assumptions

Considering that in this paper interest is focused on the effects of different migratory scenarios on the population composition and structure, the scenario projections is an extremely valuable tool. In order to pursue our main goal, we have adopted the cohort component methodology, with alternative variants for migration component.

For mortality and fertility components, we have adopted the values of the *convergence scenario* on the framework of EUROPOP2008 (EUROSTAT, 2007). The *convergence scenario* assumes that "the socioeconomic and cultural differences between Member States of the European Union (EU) will fade out in the long run", sustaining also the assumption of a convergence for all the components values and assuming 2150 as the convergence year (see annex 1).

The impact of international migration on the population dynamics as well as on the labour force resources is not negligible, particularly in countries like Portugal where the migration has the major determinant of demographic change on the last decades and that it becomes in the recent years a country of "immigration".

On this paper, we have looked at four scenarios, three of them assuming a positive net migration over the projection period (2008-2060) and one "no migration" scenario, to evaluate the impacts of different levels of net migration.
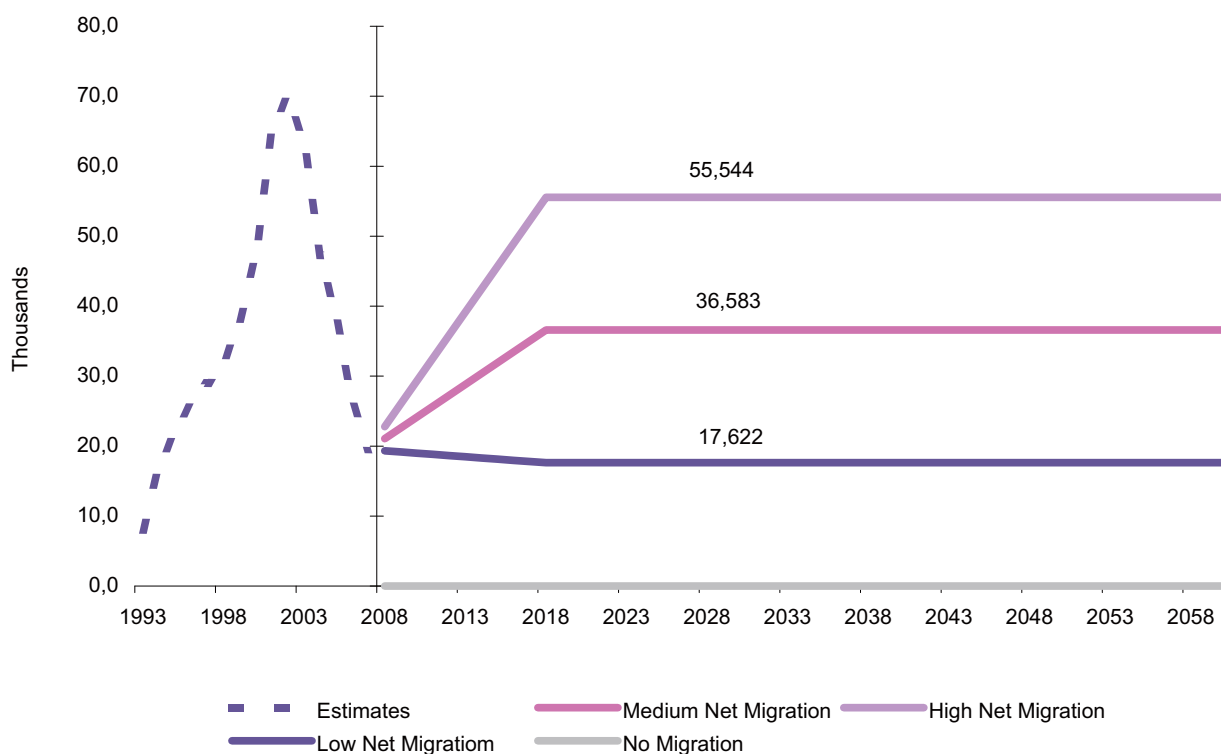
Despite recent developments on the migration projections, the scarcity of data on migration flows imposes some limitations. In order to overcome these difficulties we have worked with different data sources on different steps of set up the migration scenarios.

For the total amount of net migration, we have looked at the estimates of net migration values, since 1993 to 2007, released by Statistics Portugal. This 15 years period cover part of the inter census as well as the post census estimates, the first ones already adjusted to the 1991 and 2001 census. This values could be taken separately for out-flows and in-flows.

A central scenario, named *medium net migration scenario*, is settled on the average of the estimated net migration values 1993-2007, separately for in-flows and out-flows.

Figura 3

Estimated (1993-2007) and projected (2008-2060) net migration scenarios, Portugal

Source: Statistics Portugal, authors' calculations

Based on the medium scenario, we have a low variant (*low net migration scenario*) that corresponds to a possibility of lower "attractiveness" associated with a reduction of the inflows (-30%) in chorus with an increase of outflows (+30%) and a high variant (*high net migration scenario*) corresponding to a possibility of increasing "attractiveness" associated with an increase of the inflows (+30%) simultaneously with a decrease of the outflows (-30%). (Annex 2)

We assume initial values close to the last one estimated and a period of 10 years to increase/decrease until the proposed values. The four migration scenario, with no migratory flows, is useful to compare results.

Moreover, we take into account for the in-flows a proportion of return of Portuguese individuals (26.4%), according to Labour Force Survey recent data (73.6% for non-nationals).

After establish the amounts for immigrants, nationals and not nationals, and emigrants, the next step was to decide watt sex and age structure should we apply. For that purpose we have assumed different age and sex structures for each flow - data on foreigners with a legal status for not-nationals in-flows, data on Portuguese entries from LFS for nationals' in-flows, data on emigration from LFS emigration module for out-flows (see annex 3).
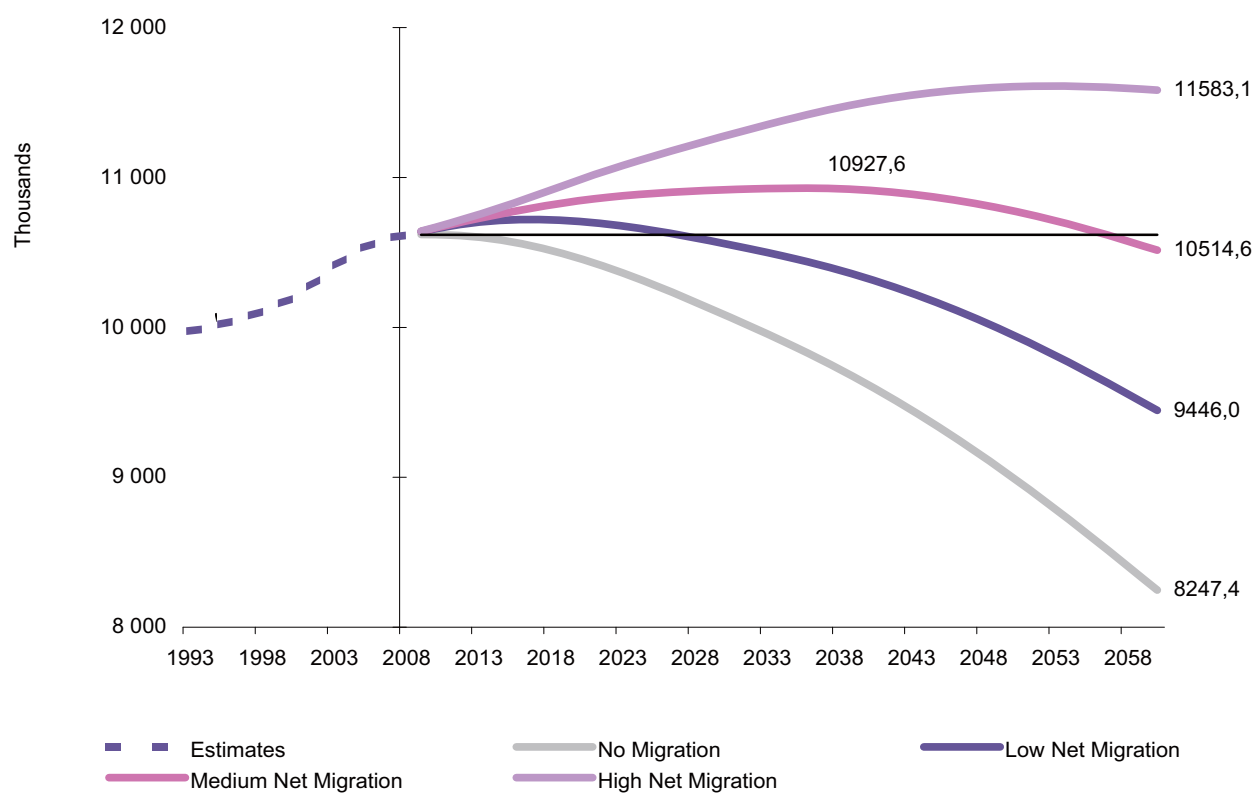
3.2. Results

Fertility, mortality and migration are the driver components of demographic change. Taking the population projections results of a set of scenarios where fertility (age fertility rates) and mortality (age mortality rates) are equal in all the variants and only the migration component assumes different values in different scenarios seems a tool to have a clear idea on the impacts of different migratory flows.

In fact, the results of our exercise point to significant impacts on several indicators. For instance, in Portugal, the resident population grow is already drive mainly by migration component. Based on the results of the medium migration scenario, the total population continues to increase until a maximum of 10927.6 thousands by 2036, after witch start to decline until 2060 (10514.6 thousands). This decline starts earlier, by 2018, in the low migration scenario and later (2054) on the high migration scenario, in witch the target values in 2060 still above the initial population.

Figura 4

Estimated (1993-2008) and projected (2009-2060) population, Portugal

Source: Statistics Portugal, authors' calculation

In all cases, natural increase will be negative all over the period, meaning that the contribution to the population increase is a result of net migration. However, due to the age structures of immigrants, usually younger than the resident population, and their share on the net migration, the impacts on natural balance will differ also significantly on each scenario, in all them (except on the absence of migrations) the contribution to the number of life births is higher than to deaths.
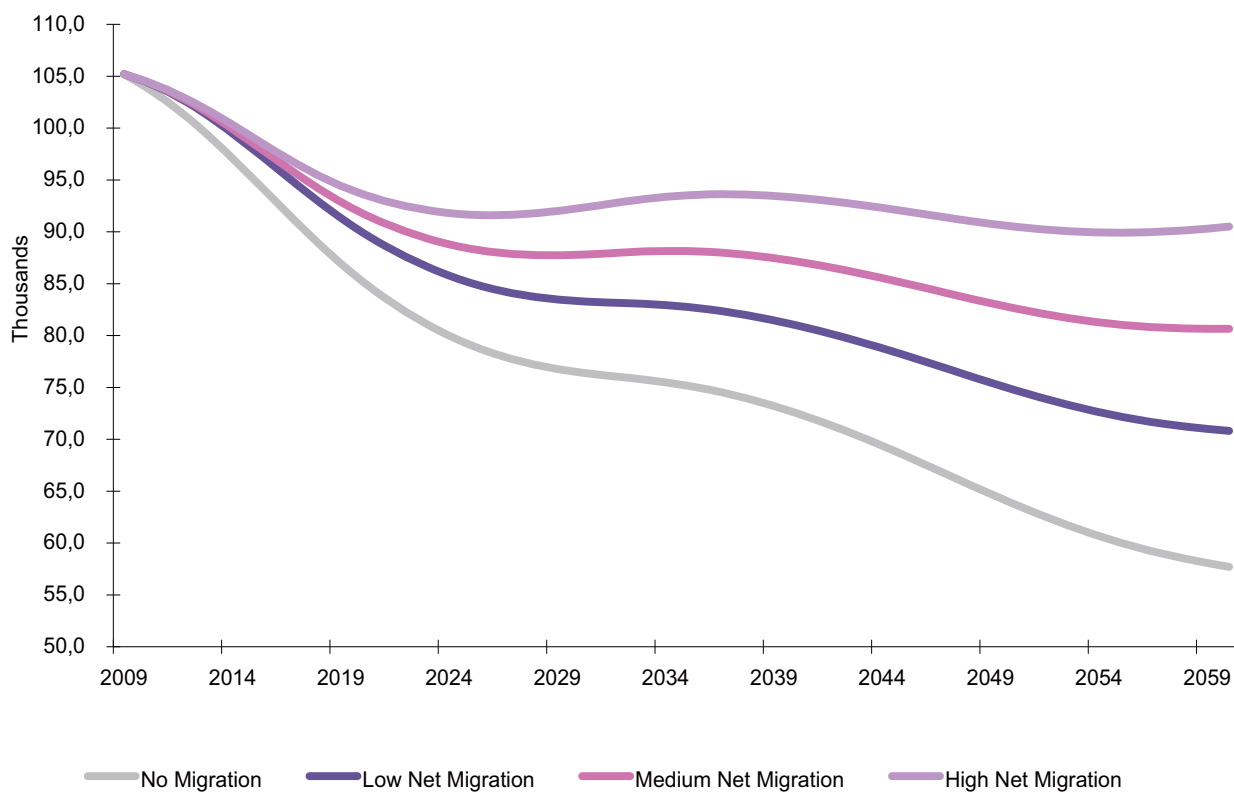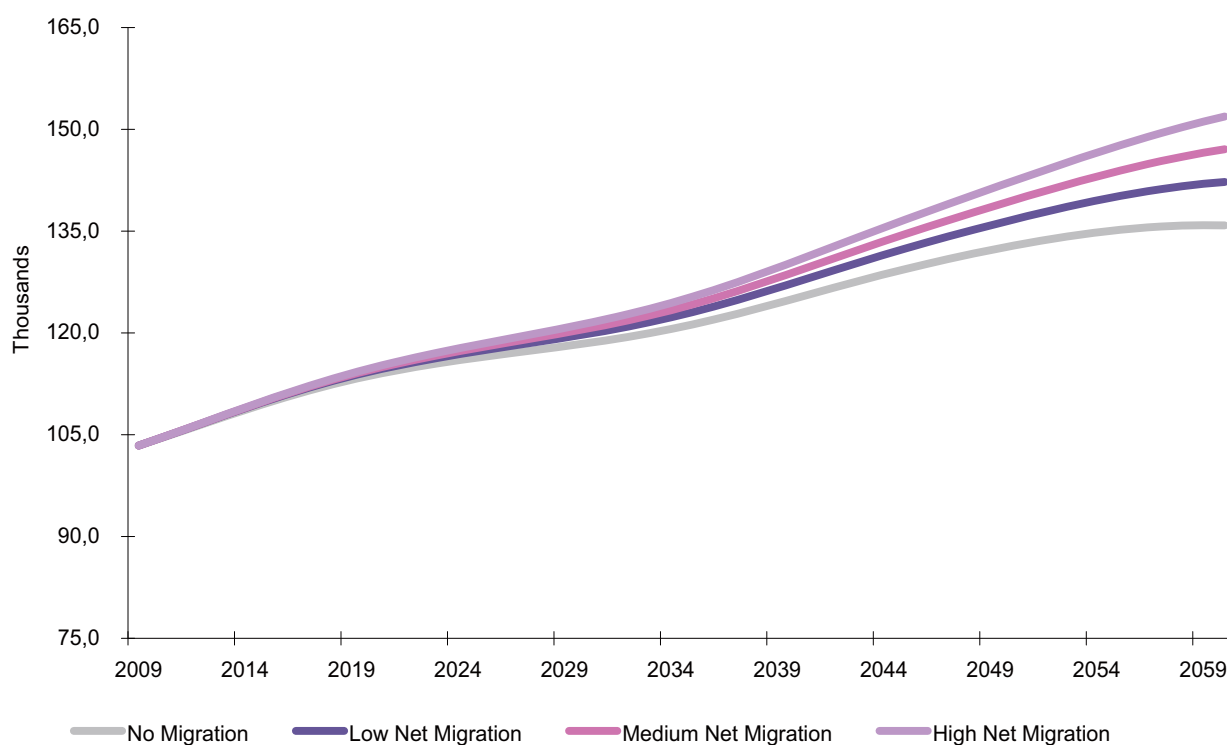
Figura 5

Live births, Portugal, 2009-2060

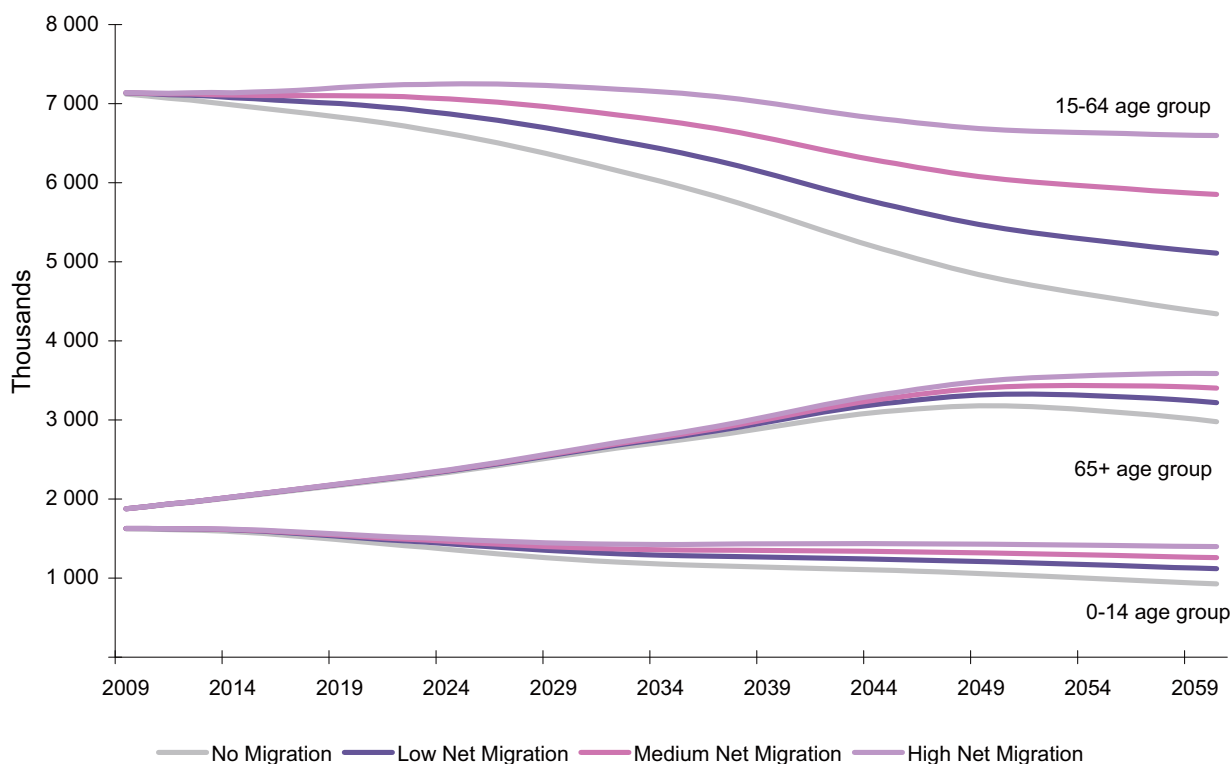**Figura 6**

Deaths, Portugal, 2009-2060

For instance, on the interval 2009-2060 it will occurs 644 thousands of births more on a "medium" scenario than in the absence of migrations; on the other hand, the difference on deaths will be 194 thousands.

Despite its contribution for the population grow, namely on younger age groups (related to his age profile and it contribution for an increase of live births), the population ageing process will not reverse in any case, even considering somehow high levels of migrations.

Figura 7

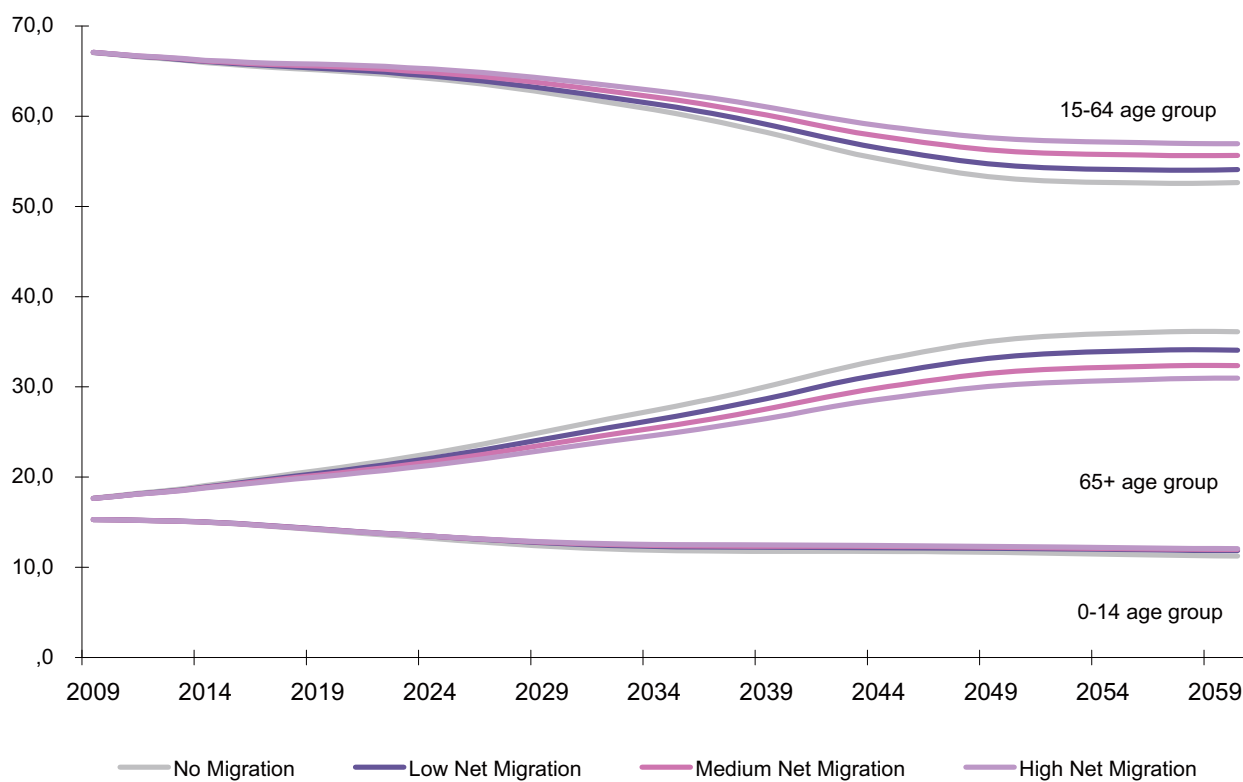Population by age groups, Portugal, 2009-2060

The larger difference will be on the working age group (15-64), however even in the higher net migration variant, this segment of population will decrease continuously after 2026; in all the scenarios the population aged 65 and over will rise and the population of children under 15 will drop.

In terms of proportions of each group into the total of population the trend is similar, but the impact into higher age groups is more evident. In 2008, the percentage of children under 15 on the total of the population is 15.3%, this value will decrease to 12.1% in the high migration scenario versus to 11.2% in the no migration scenario. The percentage of persons at the working age will decrease from 67.2% (2008) to 56.9% in the high migration scenario versus to 52.6% in the no migration scenario. The percentage of persons aged 65 and more will increase from 17.4% (2008) to 31.0% in the high migration scenario versus to 36.1% in the no migration scenario.
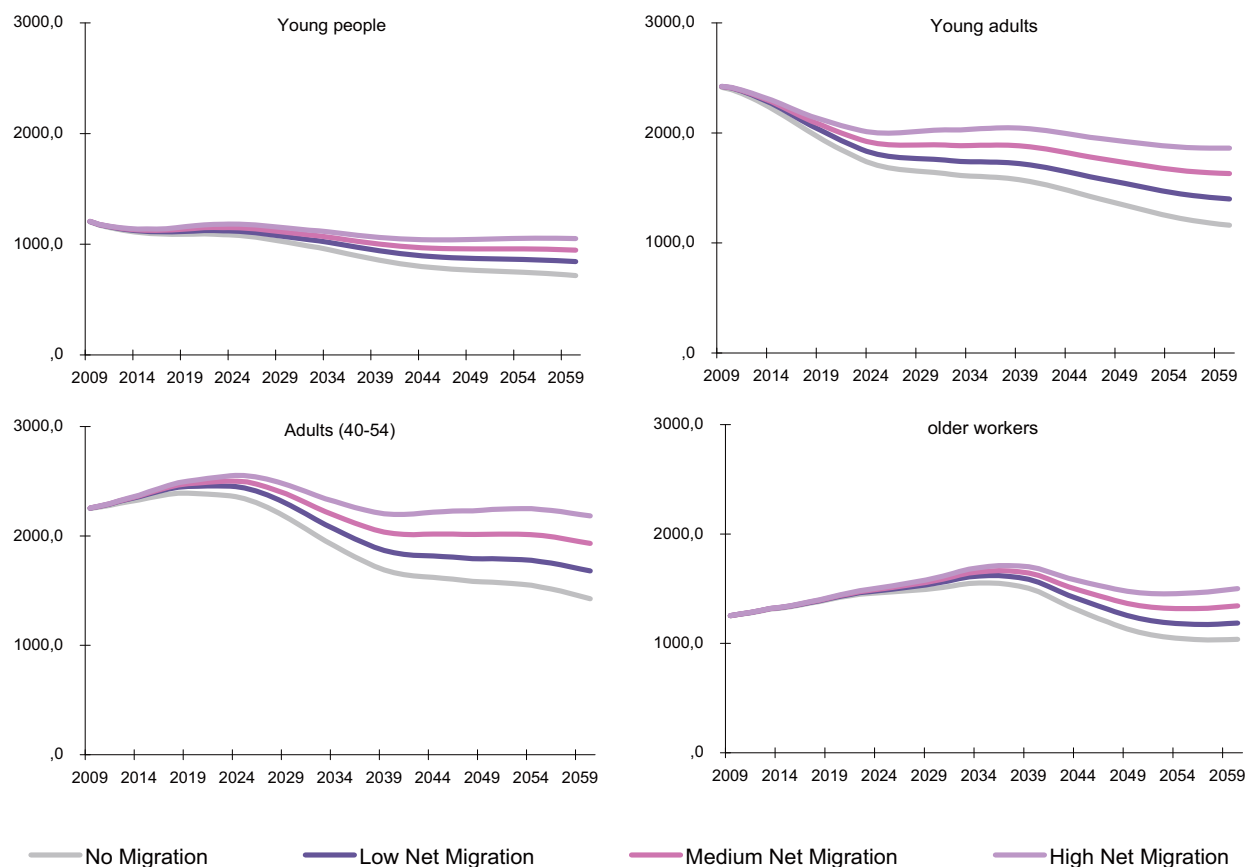
Figura 8

Distributíon of population by age groups (%), Portugal, 2009-2060

15-64 age group

65+ age group

0-14 age group

— No Migration　　— Low Net Migration　　— Medium Net Migration　　— High Net Migration

The possible future evolution of different sub groups in the 15-64 age group will suffer dissimilar trajectories.

Figura 9

Population on 15-64 age groups (thousands), Portugal, 2009-2060
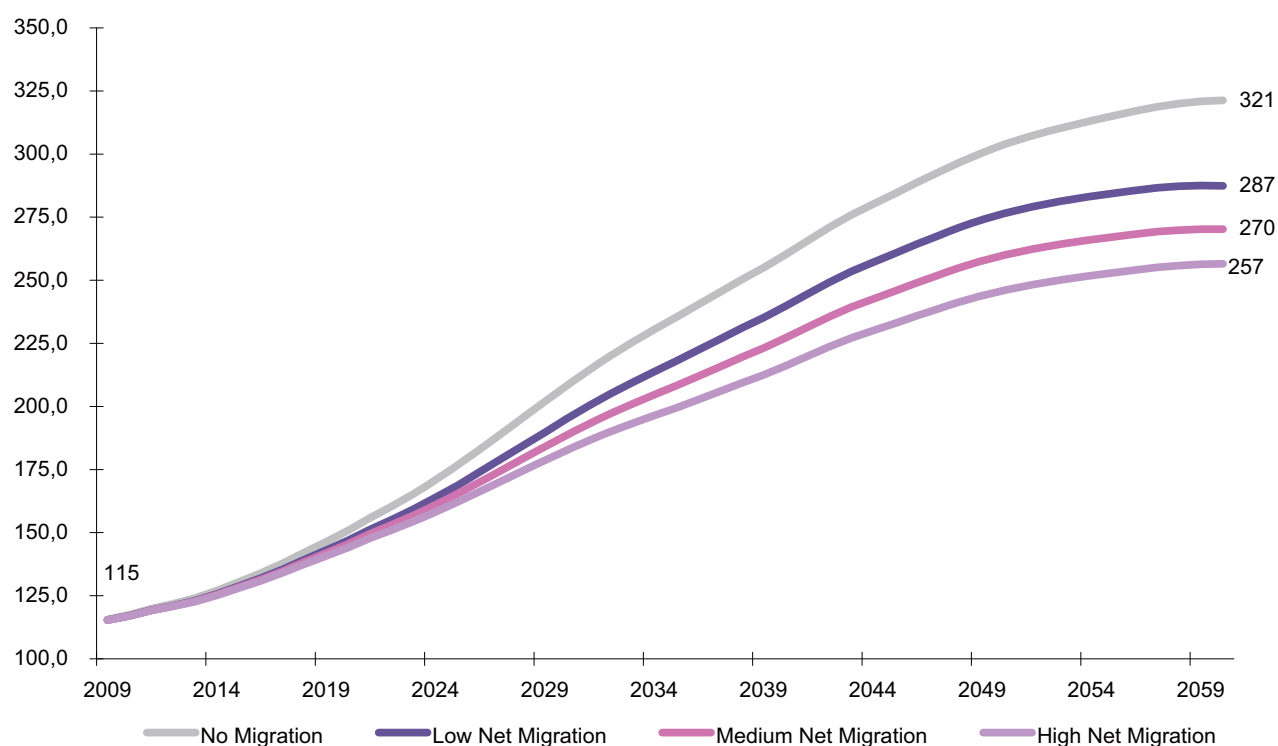

Basically drive by the passage of larger cohorts through the life cycle, beside the impacts of migratory variants (the natural ageing of populations), the sub groups of persons on the 55-64 age group (older workers) will increase in the medium and high net migration scenarios.

As a result of the combination of the trajectories of the younger (0-14) and older (65+) age groups, the ageing index (number of persons aged 65 and over per 100 persons aged under 15) will increase, in all the scenarios.

Figura 10

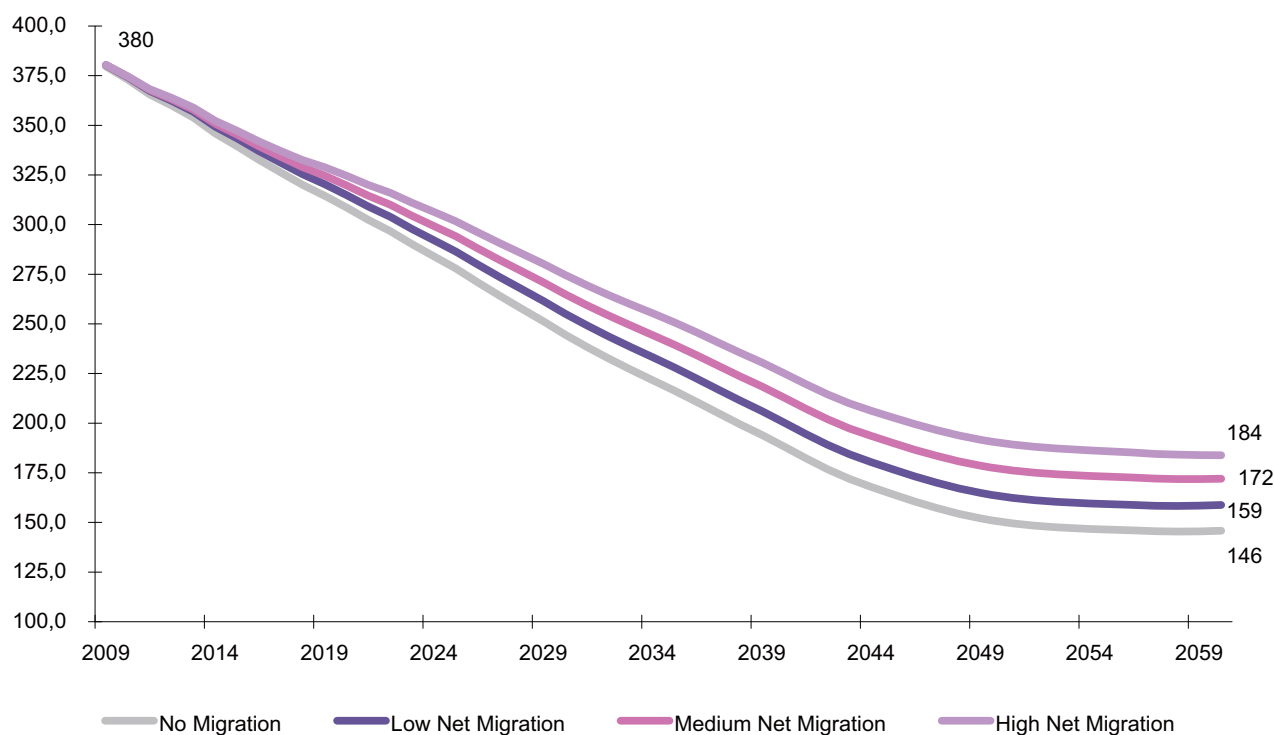## Ageing Index, Portugal, 2009-2060

By 2060, in the high net migration scenario, for each 100 children under 15 we will have 257 older persons (aged 65 and over), this ratio in the low migration scenario raise to 287 and in the no migration scenario up to 321 elder persons per 100 children under 15 (115 in 2008). The ageing process will be minored in a high net migration scenario.

On other hand, the potential support ratio (the number of working persons age per 100 person aged 65 and over) will fall in all the scenarios: by 2060, for each older person there will 2 working age persons (4 in 2008).
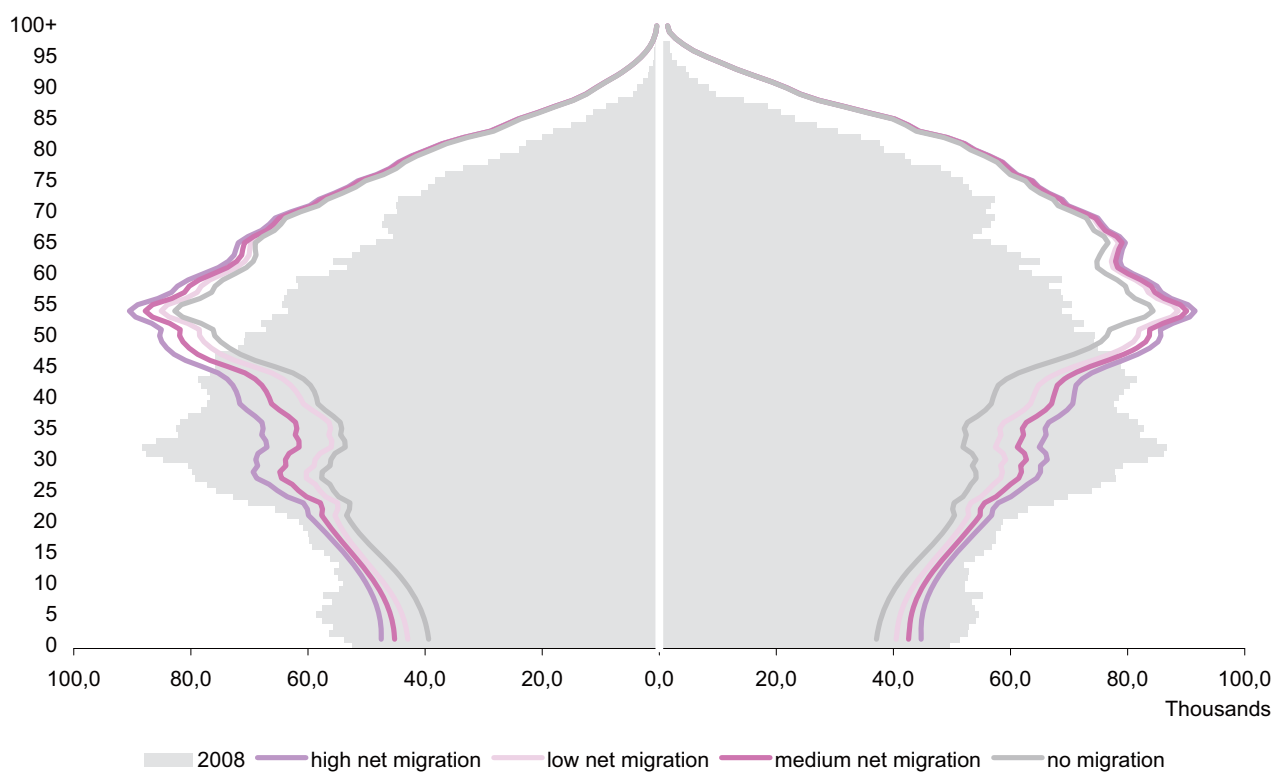
Figura 11

Potential support ratio, Portugal, 2009-2060

In terms of sex and age structures, based on the population pyramids for 2008 and 2030 (all scenarios), the major demographic impacts of net migration in Portugal will be visible mainly on the working age group and children's under 15 years. Some differences could also be pointed in the older workers (55-64), related to the normal ageing of (migrant) populations in the covered period.

Figura 12

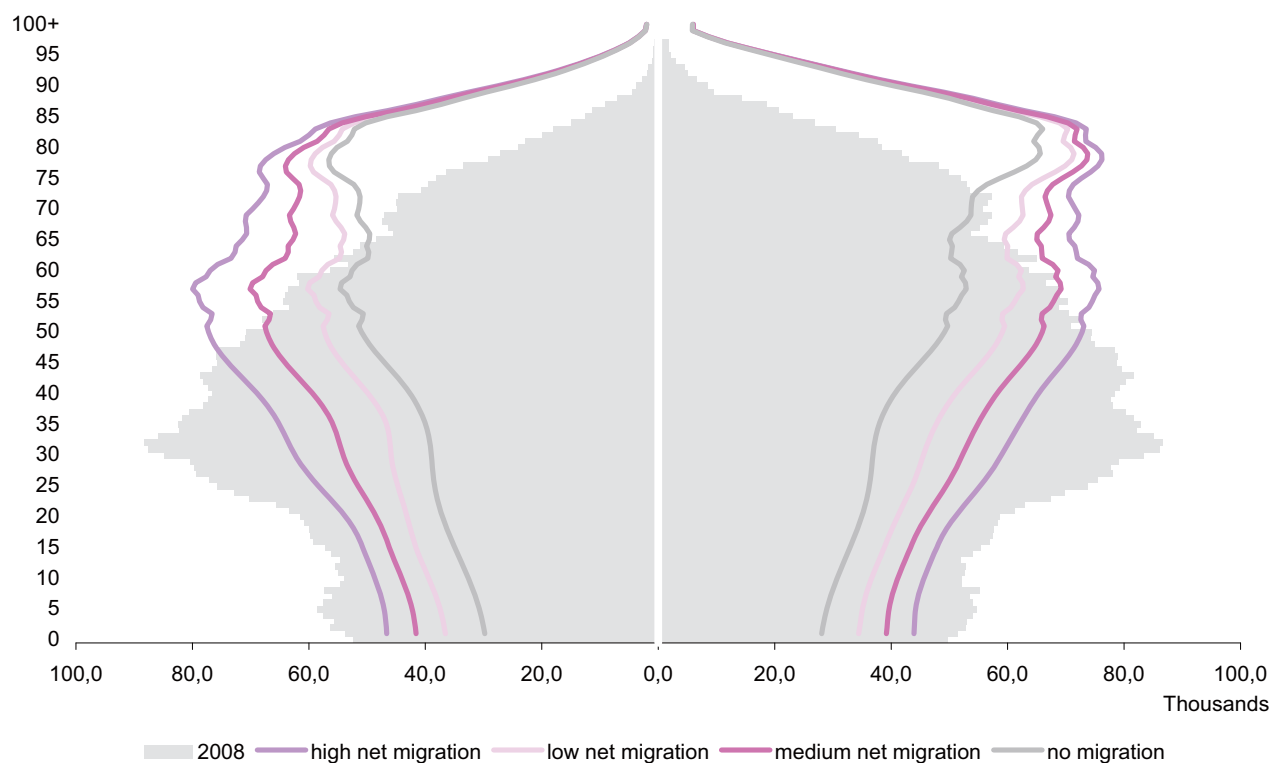**Pyramids'Portugal, 2008 and 2030 (scenarios)**

Source: Statistics Portugal, authors' calculation

By 2060 the impacts of net migration in Portugal will be clearly visible on all ages, even in higher ages.

Figura 13

Pyramids'Portugal, 2008 and 2060 (scenarios)

Source: Statistics Portugal, authors' calculations

Not only the population volume is different, comparing the no migration scenario and the high net migration scenario results, but also the age structure, strongly aged on the no migration scenario. Is also visible the longer longevity of women.

4. Main conclusions

Considering the plausibility of improvements on life expectancy, despite on watt pace it will happen, as well as a cautious upturn of the fertility levels, the migratory dynamics will…

- Have impacts on the expected age structure of resident population in the coming years

- Not stop the population ageing process in Portugal, but will slowing down its intensity

- Not stop the ageing of working age population or the related ageing of the labour force resources

- Raises new challenges for the job market and for the guarantee social protection systems

- Demands for national strategies to improve the integration of migrants in Portugal

Whichever net migration scenario will be adopted (high, medium or low), the main demographic trends – population decline and ageing – will remain remarkably stable.

However, some differences will exist. A higher net migration scenario will allow:

- a later start of total population decline

- a slighter decrease of the potential support ratio

- an higher proportion of youngsters.

A higher intake of immigrant populations will thus allow a slighter pace of change (and easier processes of economic and social adaptation) and a higher level of diversification of the native population.

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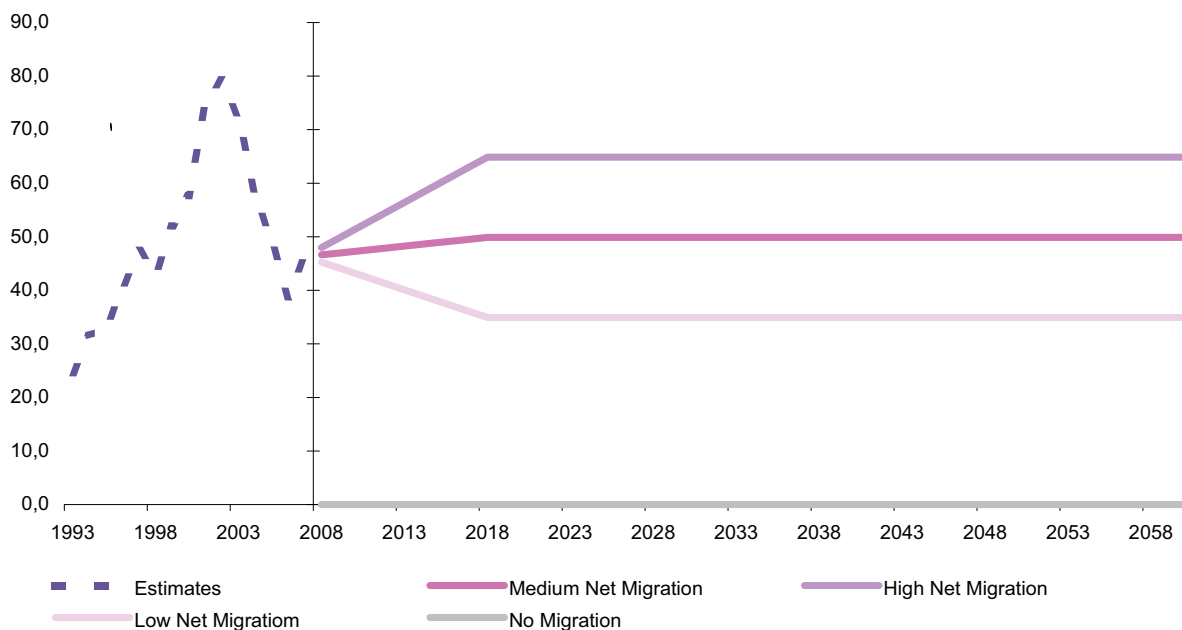
Annexes

Annex 1

Year	Total Fertility Rate	Life expectancy at birth	
		Males	Females
2008	1,36	75,8	82,4
2009	1,37	76,0	82,6
2010	1,37	76,2	82,7
2011	1,37	76,4	82,9
2012	1,38	76,6	83,0
2013	1,38	76,7	83,1
2014	1,38	76,9	83,3
2015	1,39	77,1	83,4
2016	1,39	77,3	83,5
2017	1,39	77,5	83,7
2018	1,40	77,6	83,8
2019	1,40	77,8	83,9
2020	1,40	78,0	84,1
2021	1,41	78,2	84,2
2022	1,41	78,3	84,3
2023	1,41	78,5	84,5
2024	1,42	78,7	84,6
2025	1,42	78,8	84,7
2026	1,42	79,0	84,9
2027	1,43	79,2	85,0
2028	1,43	79,3	85,1
2029	1,43	79,5	85,2
2030	1,44	79,7	85,4
2031	1,44	79,8	85,5
2032	1,44	80,0	85,6
2033	1,45	80,1	85,7
2034	1,45	80,3	85,9
2035	1,45	80,5	86,0
2036	1,46	80,6	86,1
2037	1,46	80,8	86,2
2038	1,46	80,9	86,3
2039	1,47	81,1	86,5
2040	1,47	81,2	86,6
2041	1,48	81,4	86,7
2042	1,48	81,5	86,8
2043	1,48	81,7	86,9
2044	1,49	81,8	87,0
2045	1,49	82,0	87,2
2046	1,49	82,1	87,3
2047	1,50	82,3	87,4
2048	1,50	82,4	87,5
2049	1,50	82,6	87,6
2050	1,51	82,7	87,7
2051	1,51	82,9	87,8
2052	1,51	83,0	87,9
2053	1,52	83,1	88,0
2054	1,52	83,3	88,2
2055	1,52	83,4	88,3
2056	1,53	83,6	88,4
2057	1,53	83,7	88,5
2058	1,53	83,8	88,6
2059	1,54	84,0	88,7
2060	1,54	84,1	88,8

Source: Eurostat, EUROPOP2008 population projections, convergence scenario, convergence year 2150
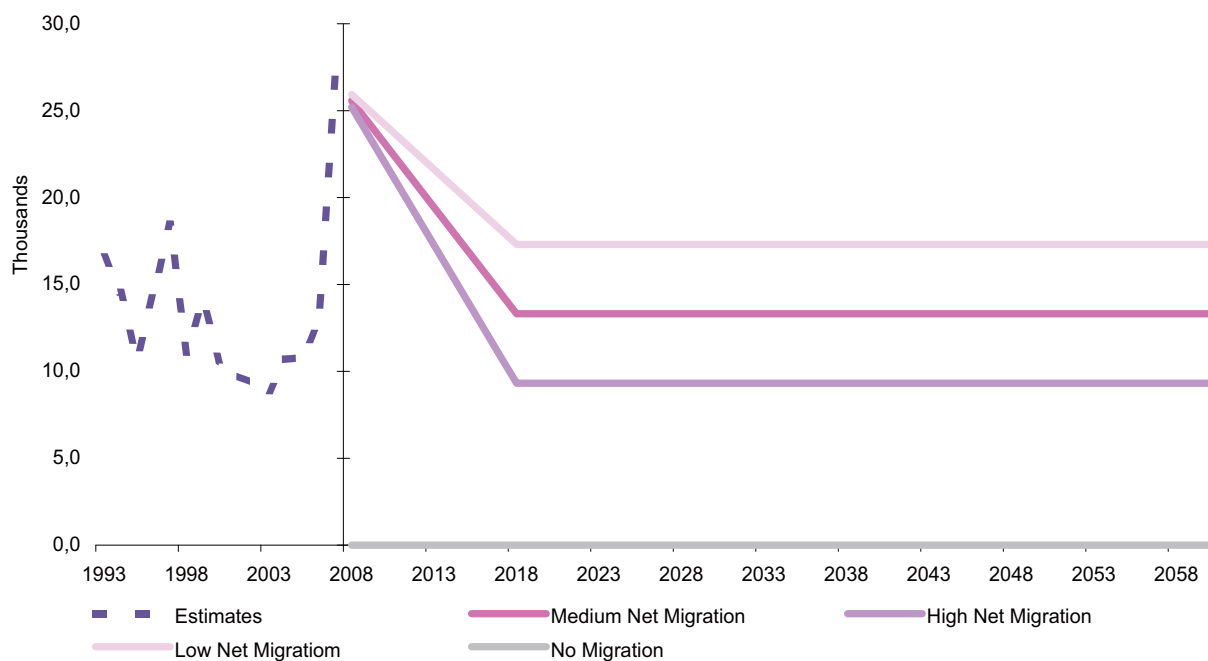
Annex 2

Figura 1

Estimated (1993-2007) and projected (2008-2060) in-flows scenarios, Portugal

Source: Statistics Portugal, authors' calculations

Figura 2

Estimated (1993-2007) and projected (2008-2060) out-flows scenarios, Portugal

Source: Statistics Portugal, authors' calculations

Annex 3

Figura 3

Age and sex structure for immigrants non nationals (percentage of total)
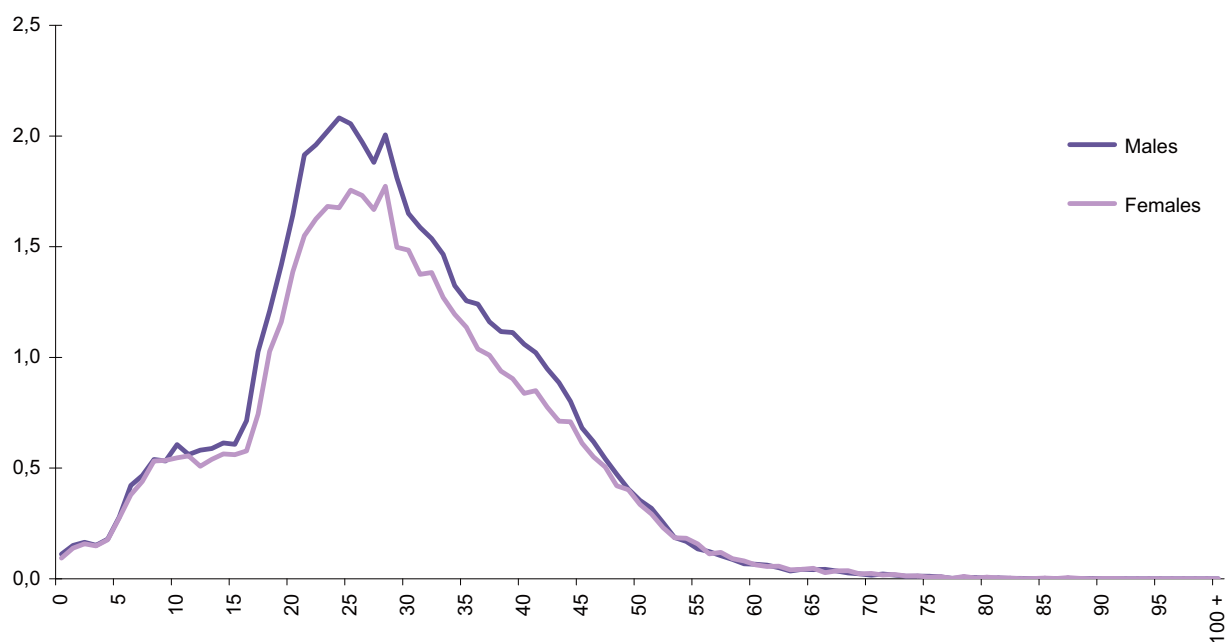

Figura 4

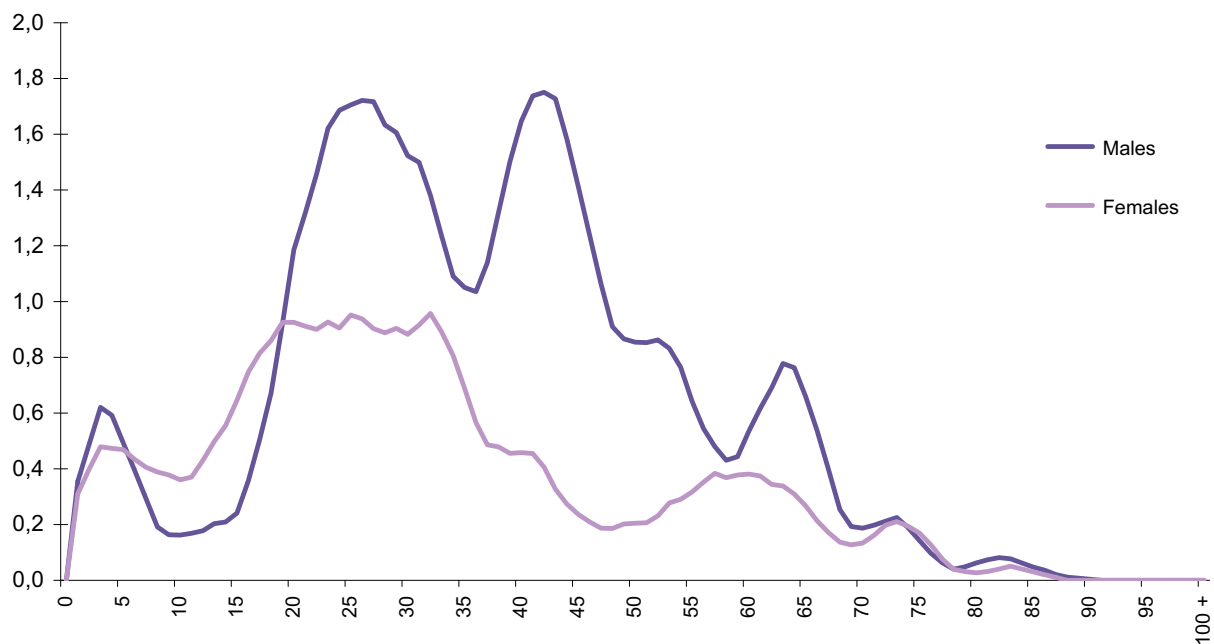Age and sex structure for immigrants nationals (percentage of total)

Figura 5

Age and sex structure for emigrants (percentage of total)