LUISS

DEPARTMENT OF ECONOMICS AND FINANCE CHAIR OF FINANCIAL MARKETS AND INSTITUTIONS

THE IMPACT OF DEMOGRAPHIC CHANGES ON PENSION FUNDS: EFFECT ON THE SUSTAINABILITY AND FUTURE VIABILITY OF PENSION FUNDS DUE TO AN AGING POPULATION AND DECLINING BIRTH RATES

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Abstract

The Italian public pension system is based on the so-called 'pay-as-you-go' criterion according to which the contributions of workers/employers are used to pay the pensions of those who have left the workforce; for this system to be sustainable over time it is necessary for the flow of income to be in constant balance with the amount of expenditure.

Over the last thirty years, profound socio-demographic changes - attributable to the progressive ageing of the population and the simultaneous decline in the birth rate - have necessitated a profound revision of the pension system.

Alongside the compulsory public pension system (first pillar), two further supplementary systems of private origin (so-called 'second and third pillar') have been envisaged, to which the forms of collective pension savings, such as pension funds, can be attributed.

In order to alleviate the pressure on public accounts for pension expenditures, reforms and legislative interventions have taken place over time in an attempt to promote a level of adequate, sustainable and market-compatible pensions and to increasingly incentivise complementary pension savings to supplement pension incomes in a context where pension replacement rates are set to progressively decline.

One of the main challenges still facing policy makers, including at the EU level, is the need to find solutions to ensure the solvency of institutions operating defined-benefit pension schemes, as well as the ability of defined-contribution schemes to provide beneficiaries with an adequate income stream for retirement age by limiting the impacts of the 'generational imbalance' that characterises our society .

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Introduction

The social security system represents one of the fundamental components of modern society that, since the Second World War - in a context of a welfare state - has assumed a predominantly public nature and compulsory character, and then a complementary and voluntary one.

Since the 1990s, in fact, the unsustainability of the public social security pillar alone has been recognised, and an overall revision of the pension system has been implemented, which - although differing from country to country - has culminated in the creation - alongside the so-called 'first pillar' - of two further supplementary pillars of private matrix (so-called 'second and third'), to which forms of social security savings of a collective nature, such as pension funds, and individual ones (such as personal pension schemes) can be attributed.

Having delineated the context, the aim of this paper is to understand and analyse the main causes of the financial sustainability of pension funds, leading to ever greater burdens on the new generations that will have to bear the growing economic burden of the inactive population.

In the first chapter, in particular, the impacts on these systems caused by socio-demographic changes such as the ageing of the population and the declining birth rate will be described.

The progressive ageing trend of society, together with the inexorable decline in the fertility rate, at a global level, represent, in fact, structural elements of most industrialised countries - to which even the more backward economies will conform in the coming years - that have profoundly impacted on the financial solidity of the main pension systems, threatening their very foundations.

Indeed, the changing composition of society - characterised by an ever-increasing old-age dependency ratio and a shrinking labour force - risks undermining the solvency of institutions operating defined-benefit pension schemes, as well as the ability of defined-contribution schemes to provide beneficiaries with an adequate income stream for retirement age.

Demographic developments, labour market trends, rising pension expenditure, together with the recent economic/financial crisis caused by the Covid-19 pandemic and the Ukrainian invasion, have aggravated the situation, impacting, as it will be emphasized in the second chapter, also on supplementary pension savings.

The progressive decline in the active population has, in fact, led to a reduction in the number of contributions paid, upsetting the balance of the so-called 'intergenerational pact' on which the pension system is based.

The second chapter will illustrate the special attention paid to this phenomenon by both EU and national legislators since the 1990s.

In order to alleviate the growing pressure on public accounts, restoring the conditions of sustainability of the social security system, a series of reforms/legislative, financing, and policy coordination interventions have in fact followed, attempting to promote adequate, sustainable, and compatible pensions with the internal market, tackling in an organic way the challenges posed by the economic and demographic crisis under way at a global level.

Indeed, among the European Commission's priorities - aimed at realising the principles of the European Pillar of Social Rights by 2030 - is the need to incentivise complementary pension savings as a means of supplementing future pension incomes in a context where pension replacement rates are set to decline progressively.

To conclude, this research will take into analysis possible further interventions and solutions that policy makers could adopt in order to make this sector sustainable in the long run.

Chapter 1

The impact of an aging population, declining birth rates and demographic changes

1.1 Overview of global demographic change and its effect

The world population has more than tripled since the middle of the 20th century and reached overall of 8.1 billion (compared to an estimated 2.5 billion in 1950) and will achieve 10 bilions in 2050 as reported by the official '*World Population Prospects*' projections published in 2022 by the United Nations[1] (see Figure 1).

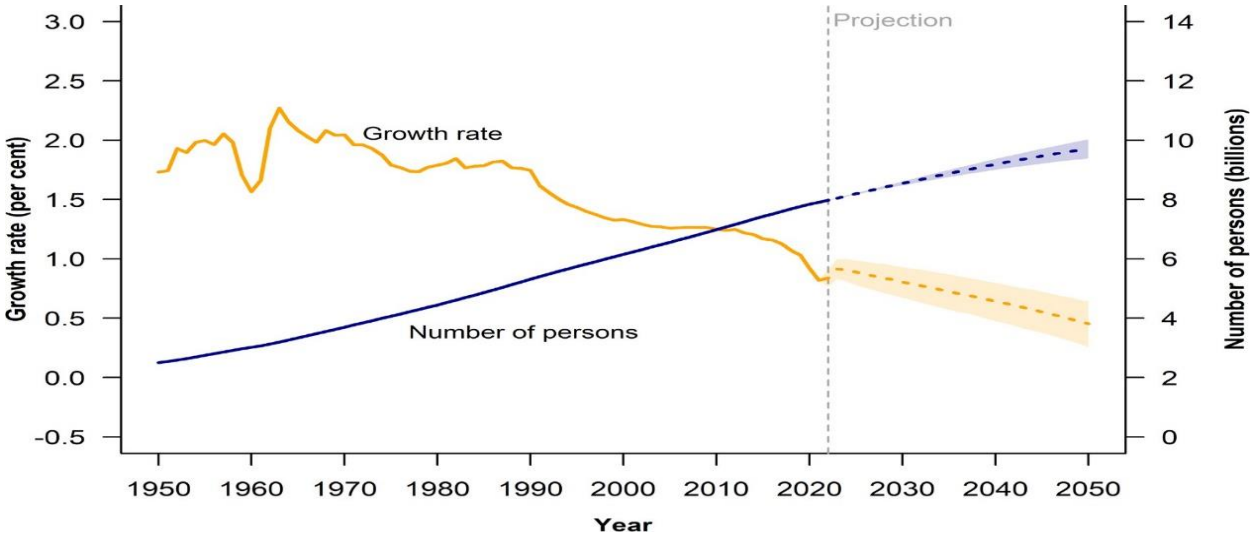


Figure 1 - Global population size and annual growth rate
Source UN Department of Economic and Social Affairs

Taking into consideration what mentioned above, the so called '*second* demographic *transition*'[2] is underway. The latter shows the progressive decrease in mortality and fertility levels which, as a matter of fact, lead to a lengthening of life expectancy and a reduction in the average number of births per woman.

According to the transition theory, all populations evolve in the same way, moving from a traditional demographic regime - based on high levels of both births and mortality (especially infant mortality) - to a modern demographic regime - distinguished, on the contrary, by low levels

[1] *World Population Prospects 2022*, available at: https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/wpp2022_summary_of_results .

[2] Grazioli, C. (2015), *Le transizioni demografiche nel mondo e nel Mediterraneo*. *Novecento. org*. n. 4, giugno 2015, available at: https://www.novecento.org/dossier/mediterraneo-contemporaneo/le-transizioni-demografiche-nel-mondo-e-nel-mediterraneo/ .

of births and deaths - through a double transition phase during which population growth first accelerates and then slows down [3].

This transition characterised by changes in the age distribution of the population with a gradual increase in the share of the elderly population and crucial social and welfare effects[4].

The most developed countries have, in fact, experienced a population collapse since the mid-19th century due to the progressive halving of the fertility rate on a global scale[5]. According to recent demographic analyses within a few decades, the rest of the world's Least Developed Countries will also complete the transition to the 'modern' demographic regime by 2050, as demonstrated by the projections of world population trends broken down by large areas (see Figure 2) [6].

Area	1850		1900		1950		2000		2050		
	milioni	%	milioni	%	milioni	%	milioni	%	milioni	(*)	%
Mondo	**1262**	100	**1650**	100	**2521**	100	**6055**	100	**9545**	*9550*	100
Asia	809	64.1	947	57.4	1402	55.6	3683	60.8	5459	*5164*	57.1
Africa	111	8.8	133	8.1	221	8.8	784	13.0	2020	*2393*	21.8
America Latina	38	3.0	74	4.5	167	6.6	519	8.6	729	*781*	7.9
Europa	276	21.9	408	24.7	547	21.7	729	12.4	757	*709*	7.5
N.America (Usa+Canada)	26	2.1	82	5.0	172	6.8	310	5.1	484	*446*	4.8
Oceania	2	0.2	6	0.4	13	0.5	30	0.5	55	*56*	0.5

Figure 2 - World population estimates and projections by major areas, 1850 to 2050
Source A. Golini 2003 and 2009, based on UN data 2008

In line with this model, the United Nations estimates that the world population will reach its peak around 2086, and then begin a gradual decline due to the decrease in the average global fertility

[3] *Demographic Transitions in the Mediterranean World,* available at: https://www.novecento.org/dossier/mediterraneo-contemporaneo/le-transizioni-demografiche-nel-mondo-e-nel-mediterraneo/.

[4] *A. F. (2019). The future of saving: The role of pension system design in an aging world. International Monetary Fund.* Amaglobeli, M. D., Chai, H., Dabla-Norris, M. E., Dybczak, M. K., Soto, M., & Tieman,

[5] *The global impact of demographic change.* Batini, N., Callen, T., & McKibbin, W. J. (2006); *The demographic dividend: A new perspective on the economic consequences of population change. Rand Corporation.* Bloom, D., Canning, D., & Sevilla, J. (2003).

[6] *ibid.*

rate from 2.5 births per woman (in the period 2015-2020) to 1.8 (by 2100), as shown in Figure 3 below[7] .

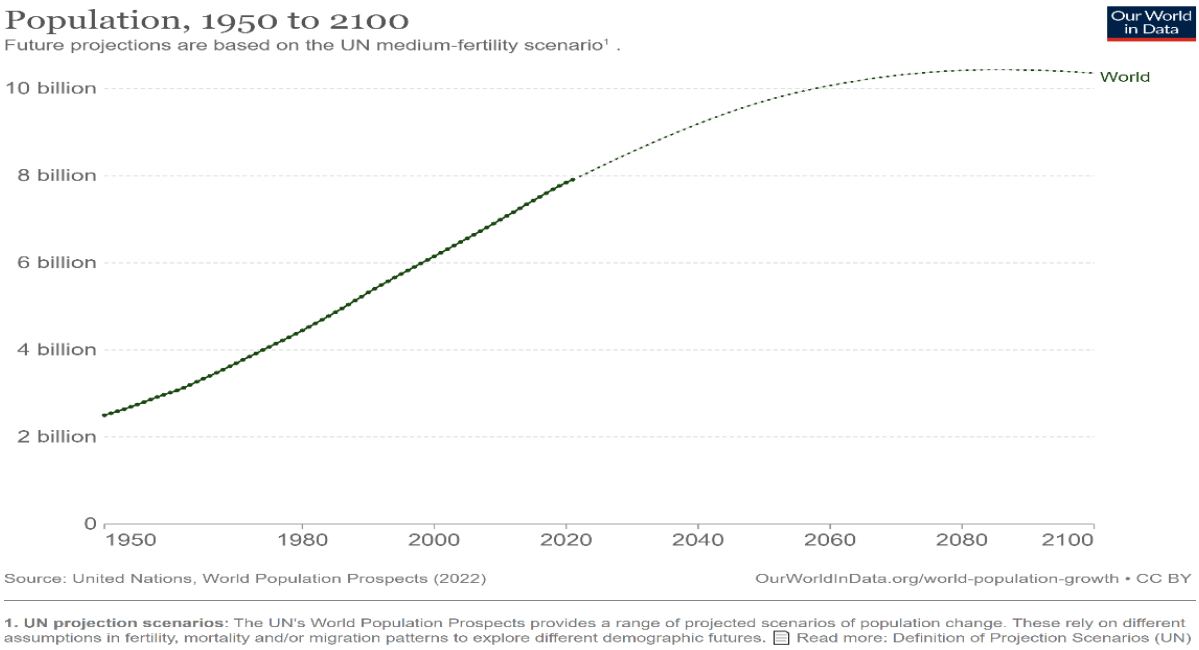


Figure 3 Population trends from 1950 to 2100

Also at the European level, Eurostat - the European Union's Statistical Office - on the occasion of '*World Population Day*' (11 July 2023), released the results of demographic studies showing that '*the population reached 451 million on 1 January 2023, peaking at 453 million in 2026, before falling to 420 million in 2100*' as depicted in Figure 4[8].

[7] https://ourworldindata.org/world-population-update-2022, accessed 1 August 2023.

[8] *EU's population projected to dorp by 6% by 2100* available at: https://ec.europa.eu/eurostat/web/products-eurostat-news/w/DDN-20230330-1#:~:text=According%20to%20the%20latest%20population,to%2027.3%20million%20fewer%20people.

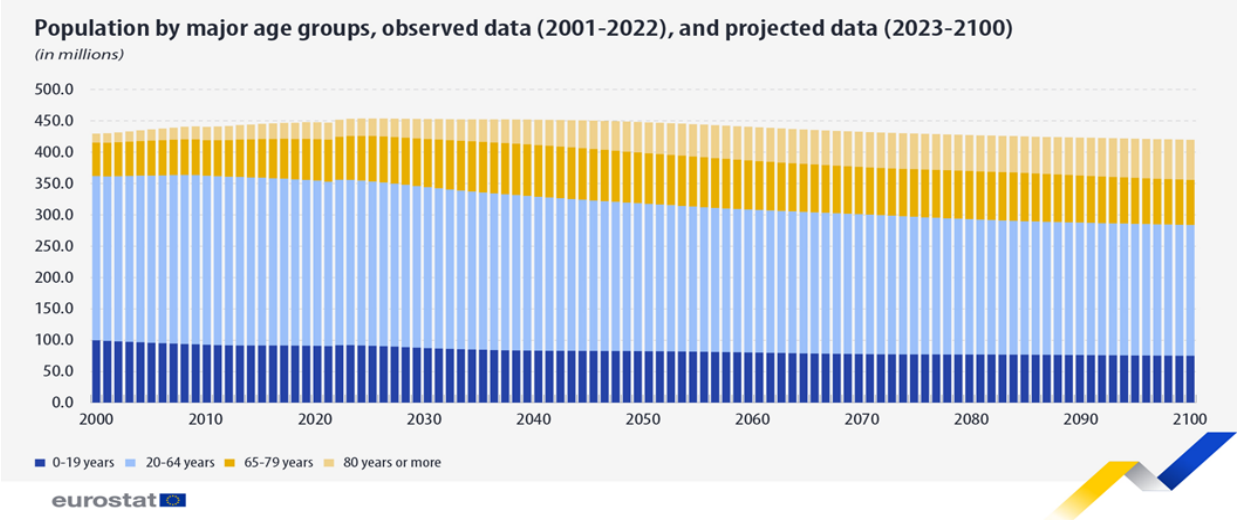


Figure 4 Population by major age groups, observed data (2001 - 2022), and projected data (2023-2100)

Also by taking a closer look at the demographic changes within the EU over a longer period, Eurostat found that the population increased from 354.5 million people (since the mid-1960s) to 448.4 million (as of 1 January 2023), resulting in an increase of 93.9 million people (see Figure 5). However, the fnal result of the research demonstrated that '*although the overall population of the EU increased in 2022, no demographic increases were observed in all* member *states* [9].

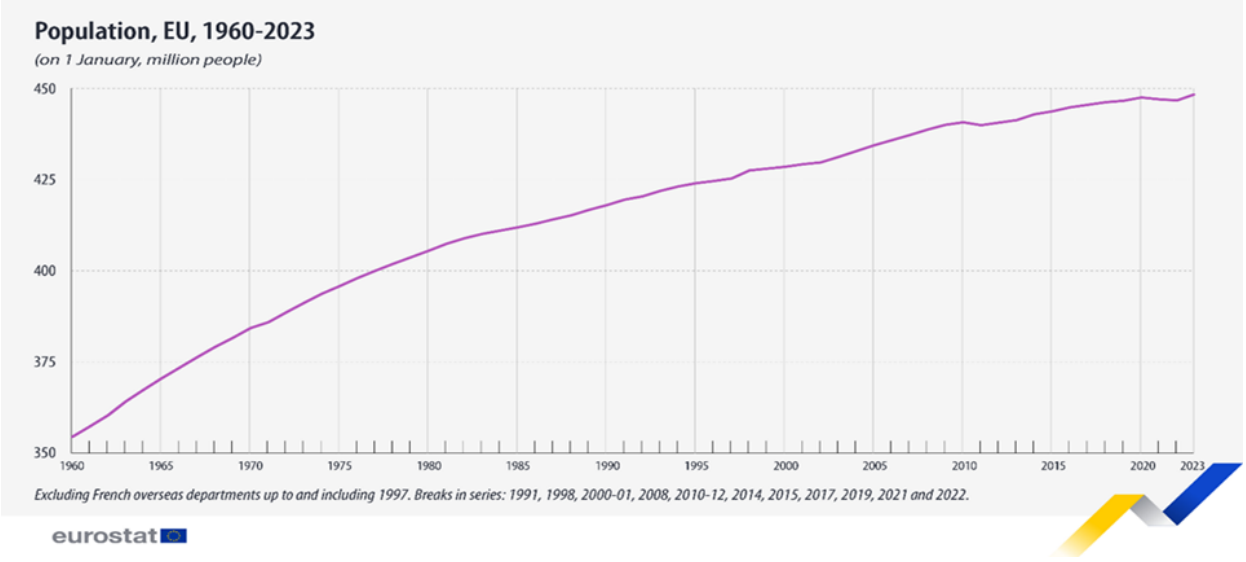


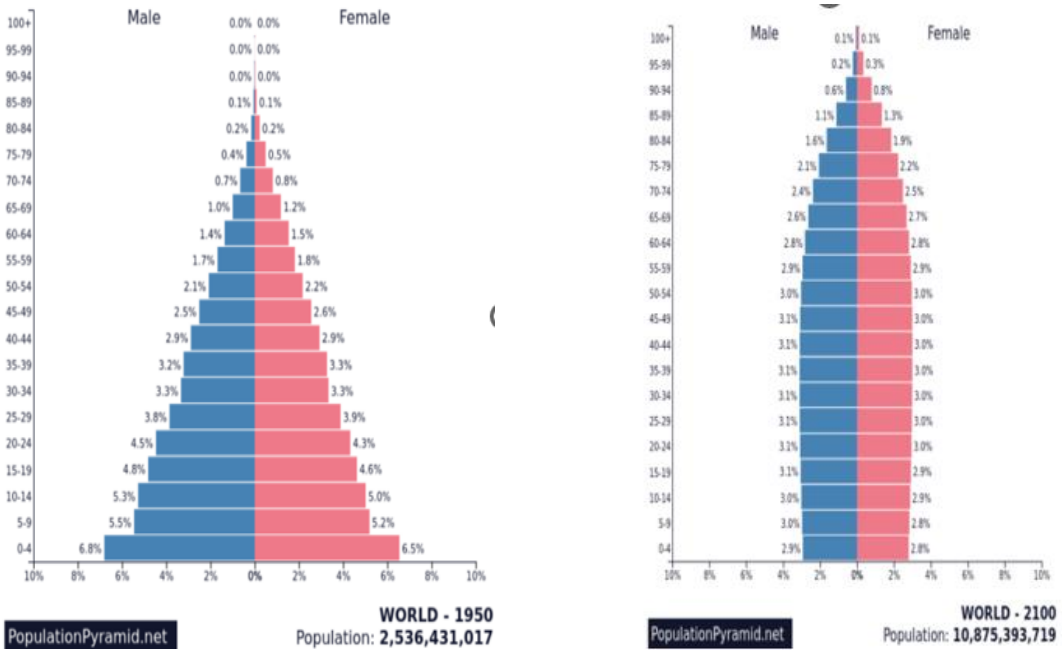
Figure 5 Population, EU, 1960-2023

[9] *EU population increases again after two years decrease (2023)*, available at: https://ec.europa.eu/eurostat/web/products-eurostat-news/w/edn-20230711-1#:~:text=After%20a%20decline%20in%20population,by%20the%20positive%20net%20migration.

Similar data have also been released at a national level: in August 2022, Istat published new population forecasts for the period 2022-2070 confirming that '*the resident population will decrease from around 58.9 million on 1 January 2023 to 57.9 in 2030, to 54.2 in 2050 to 47.7 million in* 2070'[10] .

Thus, bearing in mind the possible causes of demographic population trends and their effects at the macroeconomic level, two phenomena that have affected the world population in recent decades have been observed: ageing[11] and demographic decline, both exacerbated by the Covid - 19 epidemic.

Official statistics speak in terms of the so-called '*ageing at the base'*, i.e. of a progressive growth of the share of elderly people within the population, which - as depicted in the projections from 1950 to 2100 (see Figure 6)[12] - has led to a narrowing of the base of the 'age *pyramid*'[13] .



[10] *Medium- to long-term trends in the pension and social health system 2024. Report 24 Ministero dell'Economia e delle Finanze Dipartimento della Ragioneria Generale dello Stato*, available at: https://www.rgs.mef.gov.it/_Documenti/VERSIONE-I/Attivit--i/Spesa-members/forecasting_activities_RGS/2023/Report-2023 .

[11] *The macroeconomic and fiscal impact of population ageing (No. 296). ECB Occasional Paper.* Bodnár, K., & Nerlich, C. (2022); *World population aging as a function of period demographic conditions. Demographic Research, 48, 353-372.* Fernandes, F., Turra, C. M., & Rios-Neto, E. L. (2023); *Old-age income support in the 21st century: An international perspective on pension systems and reform. World Bank Publications.* Holzmann, R. (2005).

[12] *Data available* at: https://www.populationpyramid.net/it/mondo/2060/ , accessed 1 August 2023.

[13] Graphical representation used in demographic statistics to describe the distribution of the population classified by age group (shown on the y-axis) and sexual gender (shown on the abscissa axis) over a given time period.

Figure 6 World Population Pyramid 1950 to 2100

At the European level, this demographic trend is substantially confirmed by a '*shrinking and* ageing society'[14] : the share of children and young people (aged 0-19 years) in the total population is expected to decrease from 20% at the beginning of 2022 to 18% by 2100; while the share of people (aged 65-79 years) is expected to increase by 2 percentage points from 15% at the beginning of 2022 to 17% in 2100 and that of people (aged 80 years and over) is expected to more than double, from 6% to 15%, as depicted in Figure 7 below[15] .

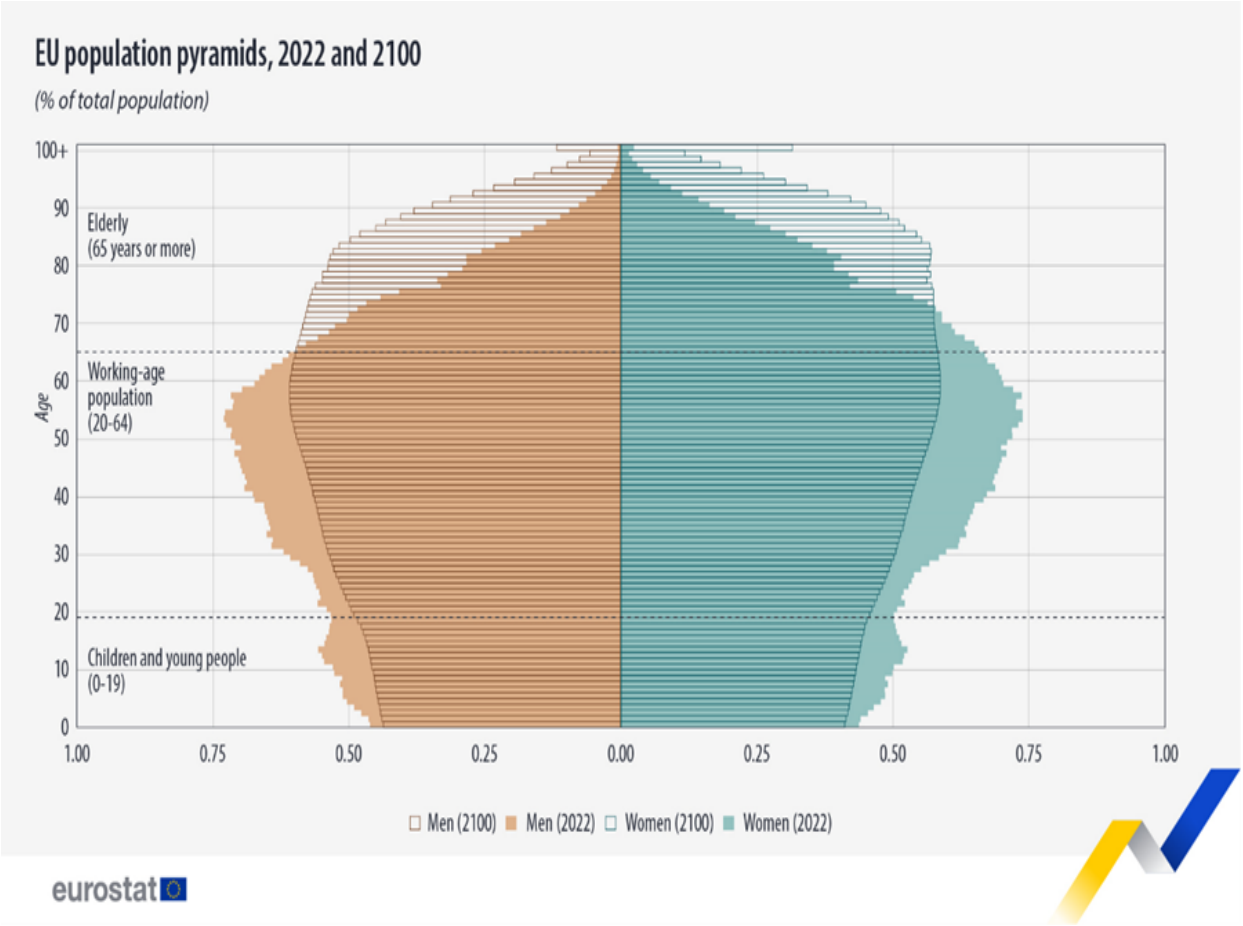


Figure 7 Eu Population pyramids, 2022 and 2100

[14] *EU's population projected to dorp by 6% by 2100,* available at: https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20230330-1

[15] Ibid.

The International Monetary Fund has in fact spoken of the so-called *longevity shock*[16] according to which the trend in population size and composition - brought about by the demographic decline, as it will further analysed in the following section - will put social security systems under pressure, leading to a greater burden on people of working age who will have to provide for social expenses as well as pension ones[17] .

[16] *The ageing bomb, ageing in the economy of the future,* available at: https://www.orizzontipolitici.it/the-ageing-bomb-invecchiamento-ed-economia.

[17] *The impact of demographic change - in a changing environment*, 2023 available at: https://commission.europa.eu/system/files/2023

1.2 Factors influencing the decline in the birth rate

As depicted throughout the first section of this essay, the demographic change has been affected by multiple factors. Therefore, it is essential to have a deeper understanding of a factor that has played and continues to play a dominant role in demographic changes worldwide: birth rate.

In fact, from 1950 to 2050, the population grew very rapidly in the 1960s (an average increase of 2.1% per year) and that since then the pace of growth has slowed by more than half due to the high reduction in fertility rates. Furthermore, in 2020 (for the first time), the population growth rate fell below 1% per year and is expected to continue to slow down in the coming decades and until the end of this century.

According to estimates, most recently reported in the *World Social Report 2023 - Leaving No One Behind In An Ageing World* - the world population could grow to 8.5 billion in 2030, reaching 9.7 billion in 2050[18] . The global fertility level - that is, the average number of births per woman - has declined significantly in recent decades: two-thirds of the population lives in countries where the fertility rate is below the level needed for populations with low mortality to stabilise over the long term.

Estimates made by the UN Department of Economic and Social Affairs Population Department in 2022 (see Figure 8 - Panels A and B)[19] show, in fact, that:

- the global average fertility rate (in 2021) stood at 2.3 births per woman (down from around 5 births per woman in the mid-20th century) figure 8, Panel A) and that the same is expected to fall to 2.1 by 2050
- despite the continuing decline in the average number of births per woman, the total annual number of births has remained stable at around 140 million since the late 1980s due to the youthful age distribution of the global population. The number of births has approached 140 million per year in the

[18] *World Social Report 2023 - Leaving No One Behind In An Ageing World* -, available at: http://desapublications.un.org/publications/world-social-report-2023-leaving-no-one-behind-ageing-world.

[19] *World Population Prospects 2022*, available at: https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/wpp2022_summary_of_results

late 1980s, when the large cohorts of the earlier "baby boom" of the 1950s and 1960s were having their children (figure II.1, Panel B).

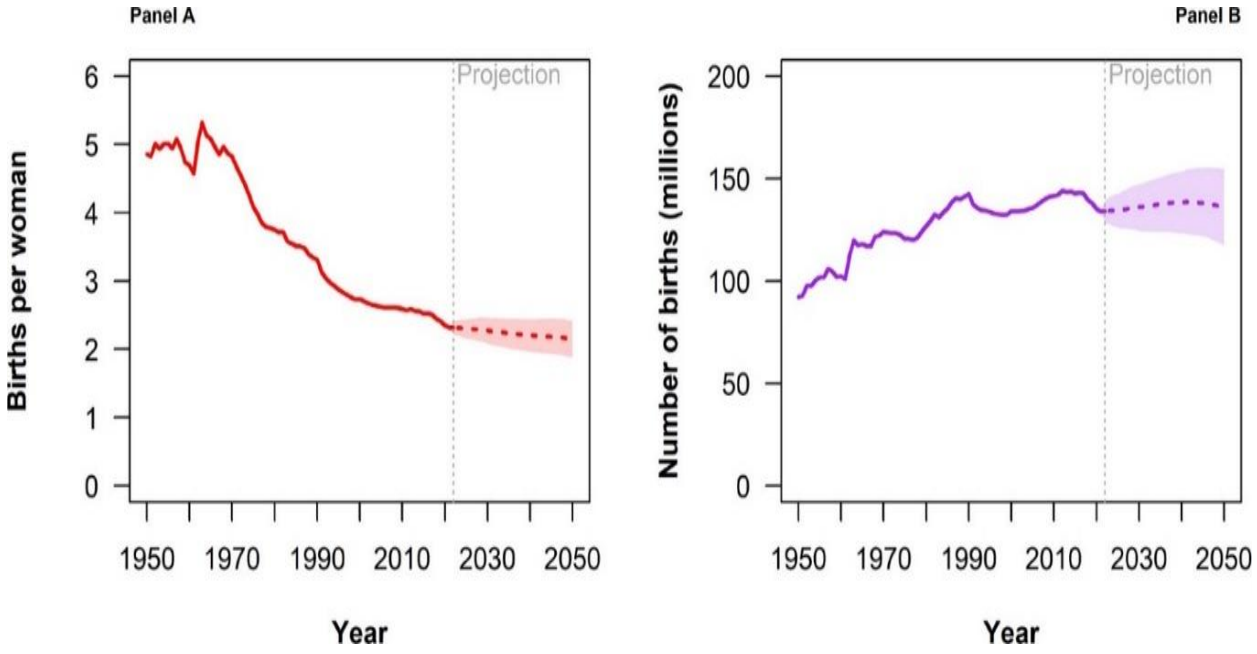


Figure 8

Global total fertility rate (Panel A) and number of births (Panel B) 1950-2021 and predictions intervals, 2022-2050

Source UN Department oj Economic and Social Affairs

- the birth rate has changed over time and differently in different countries as depicted in Figure 9 and table 9.1[20].

  Since the 1960s, fertility levels in Asia (East and Southeast) have declined much faster than in Europe; for instance, in 2021, most births were registered in Central and South Asia (28% of global births), East and Southeast Asia (18%) and sub-Saharan Africa (29%); (iii), while countries in Europe, North America, Australia and New Zealand, have experienced consistent low fertility levels since the late 1970s; as of 2018, Latin America and the Caribbean have experienced fertility rates of less than 2 births per woman

[20] *World Population Prospects 2022,* available at: https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/wpp2022_summary_of_results.

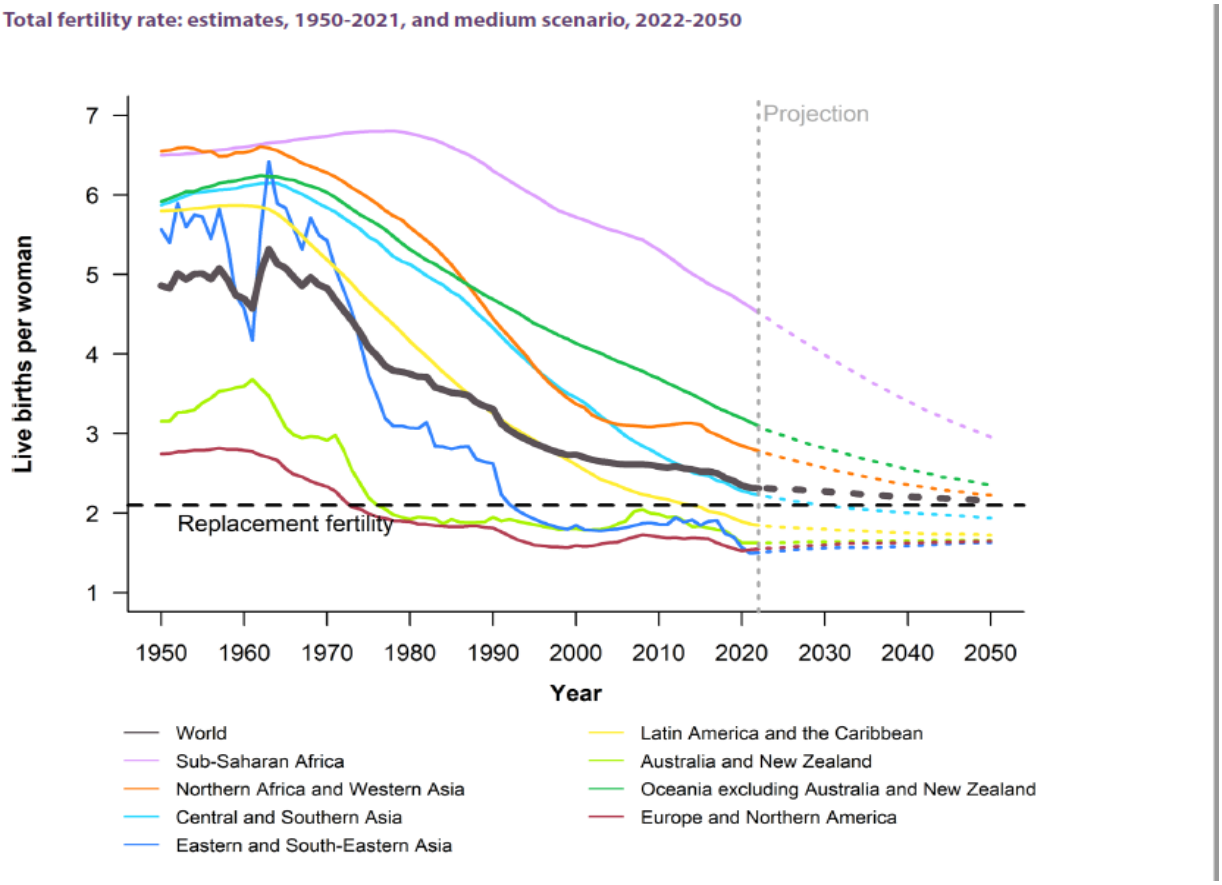


Figure 9 Total fertility rate 1950-2021 and medium scenario 2022-2050

Population of the world, SDG regions and selected groups of countries, 2022, 2030 and 2050 according to the medium scenario

	Population (in millions)		
Region	*2022*	*2030*	*2050*
World	**7,942**	**8,512**	**9,687**
Sub-Saharan Africa	1,152	1,401	2,094
Northern Africa and Western Asia	549	617	771
Central and Southern Asia	2,075	2,248	2,575
Eastern and South-Eastern Asia	2,342	2,372	2,317
Latin America and the Caribbean	658	695	749
Australia/New Zealand	31	34	38
Oceania*	14	15	20
Europe and Northern America	1,120	1,129	1,125
Least developed countries	1,112	1,328	1,914
Landlocked developing countries	557	664	947
Small island developing States	74	79	87

*excluding Australia and New Zealand

Table 9.1 – Population of the world, SDG regions and selected groups of countries, 2022, 2030 and 2050 according to the medium scenario

According to the United Nations, the main factors that, at a global level, have influenced and still influence are to be found; i) in less developed countries, to high levels of maternal mortality due to poor health conditions, war conflicts, the impact of the HIV epidemic and recently (2020/ 2021) the COVID-19 pandemic, which has certainly led to a postponement of the fertile age; (ii) while in more developed countries, the economic situation, the new role assumed by women in society, fewer marriages and the proliferation of different family models, high divorce rates, and less access to sexual and reproductive health care services, including family planning.

By taking into consideration these analyses, the European Commission recently analysed the composition of households, showing that although the number has increased, the '*average size*' of households continues to decrease. As a matter of fact, in 2021, the European household consisted of 2.2 persons, compared to 2.3 in 2019 and 2.4 in 2009[21] . More than one-third of all households in Europe are now composed of a single adult person without children. By contrast, households composed of a couple with or without a child are becoming rarer: their share decreased by 1.7 per cent in 2021 compared to 2019 (from 80.1 million to 78.7 million).

Turning to the analysis of the national context, it can be observed that Italy is stuck in the so-called '*demographic trap*'[22] caused by particular fertility dynamics recorded since the Second World War: the *baby-boom* phenomenon characterised by a high number of births in the 1960s, followed by a 20-year collapse in births, the so-called *baby- bust*, and then undergoing, in the period of the Great Recession (2013), a decline in births that has not yet stopped and that does not hint at reversing the trend as depicted in Figure 10 below[23] .

[21] *The impact of demographic change - in a changing environment*, 2023 available at: https://commission.europa.eu/system/files/2023 -01

[22] *Few children and accounts in the red. The demographic trap after Covid-19 in Italy* , Letizia Mencarini, June 2020 - no. 6 available at: https://bancaria.it/livello-2/archivio-sommari/gli-ultimi-sommari-di-bancaria/bancaria-giugno-2020

[23] *Data available* at: https://ourworldindata.org/world-population-update-2022, accessed 1 August 2023

Figure 10 Population growth rate, 1950 to 2100

If, in fact, sudden events such as the Brexit, the Covid - 19 pandemic and the Russian war of aggression against Ukraine have forced an entire society to reorganise itself from a social-family point of view as well as having intensified the sense of labour and economic uncertainty and having affected the birth rate, they represent just a few of the causes that today hinder the fertility rate in Europe and in particular in Italy, which must be sought in more structural causes.

Increasingly intrusive globalisation in our lifestyles, technological change, social policies inadequate to the current problems, and job instability are all phenomena that restrain young people in their attempts to leave the family unit and create their own, with impacts on the birth rate.

Eurostat data show, in fact, how the late exit from the household (average age 30.1 years) has significantly changed the composition of the population with obvious negative impacts on the birth rate.

In the first post-World War II decades, young people left the parental home before the age of 25, got married and shortly afterwards had children; this pattern began to change from the mid-1960s

- as it will analysed in more detail in the following chapter - due to a series of socio-economic, cultural and regulatory changes, generating impacts on the fertility rate, as depicted in Figure 11[24].

The role of women changed as they were integrated into the world of work, contraception policies became widespread, divorce was introduced and in 1975, family law reform took place.

To have a deeper understanding of what mentioned above, it is essential to take into consideration the age at which entry into the world of work takes place varies, the time it takes to stabilise one's career path lengthens, making it more difficult for young people to gain economic independence from their family of origin. Moreover, it is important to include in this anlaysis the phenomenon of youth emigration. In the last decades, the latter has intensified, thus making Italy a country where fewer and fewer young people remain and those few generate fewer and fewer children

The average age of women giving birth is rising (32.2 years), resulting in a decrease in the likelihood of having a first child, and even more so, second and third children.

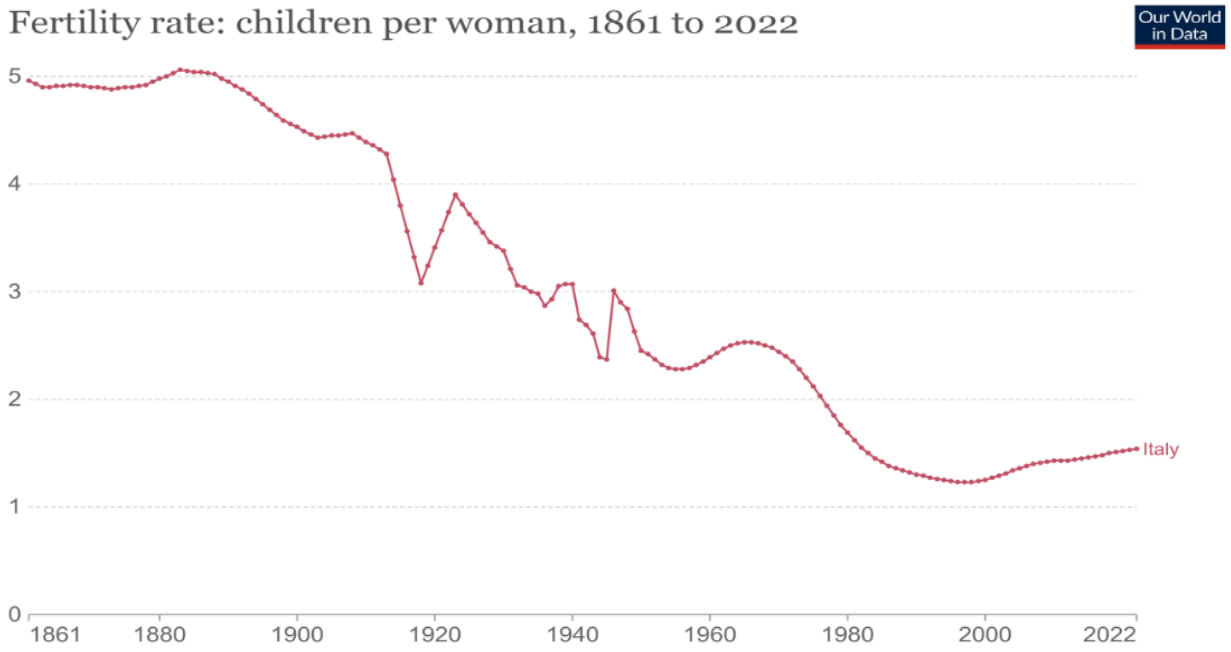


Figure 11 Fertility rate: children per woman, 1861 to 2022

Therefore, the causes that have influenced the decline in the fertility rate in Italy, it is possible to assume that it is a complex phenomenon of a socio-cultural-economic nature ascribable to the : i) different level of female participation in the labor market; ii) greater amount of time women spend

[24] *Data available* at : https://ourworldindata.org/world-population-update-2022, accessed 1 August 2023

looking after their children and the family compared to men;; iii) the difficult conditions for young people to enter the world of work and the precarious conditions of the same ; as a whole, they can be attributed to the reduced propensity of public spending on family and pension policies, as it be further analysed.

1.3 Consequences of the Falling Workforce on the Sustainability of Pension Funds

As has been shown, countries in Europe are facing complex demographic challenges that are expected to have economic implications and important impacts on pension systems, including supplementary ones such as pension funds.

As demonstrated in the previous sections, the causes of the progressive ageing trend of the population and the declining birth rate by examining the composition of the age pyramid (see Figure 7) according to which a pico of elderly people is expected in 2100.

Data from Eurostat showed, in fact, that *"the old-age dependency ratio in European countries (understood as the number of persons aged 65 years and over) is continuously increasing until 2070, reaching 29 per cent"*[25] , as depicted in Figure 12 below.

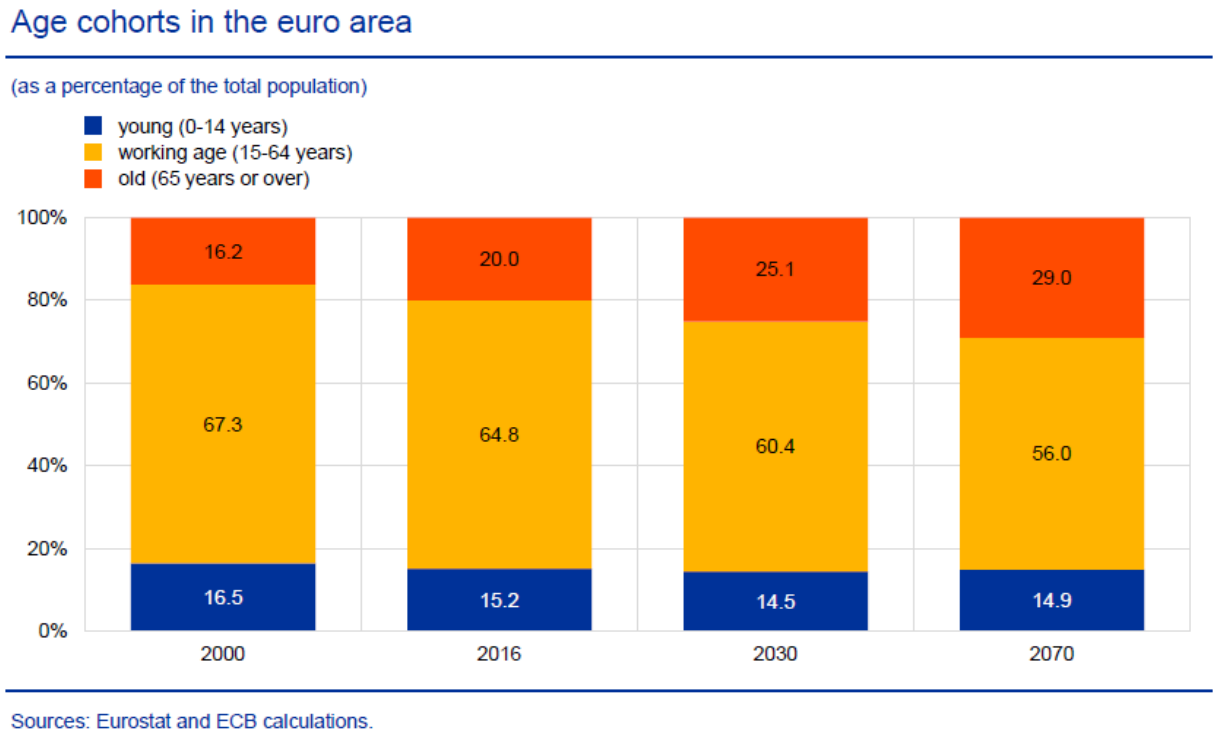


Figure 12 Age cohorts in the euro area

[25] *The economic impact of population ageing and pension reforms:* available at: https://www.ecb.europa.eu/pub/pdf/other/ebart201802_02.en.

The increase in this index implies a decrease in the number of workers (aged between 15 and 64) to 56% in 2070 with a considerable burden on public pension systems in general and pension funds.

Official ECB estimates confirm that population ageing has effects on labour supply over time - reducing it significantly - and on GDP/capita because: (i) "*fewer and fewer young people will enter the labour force and more and more older workers will tend to have lower participation rates; (ii) migration flows will only partially compensate for the decline in the working-age population, reflecting a decline in net migration relative to the total population as well as the ageing of current migrants"*[26] .

If having fewer dependent children, in relative terms and in the short run, leads to an increase in the working-age population relative to the total population, in the long run, it has a negative impact on the working-age population, both in absolute terms and as a percentage of the total population.

The increase in life expectancy will therefore lead to more people reaching retirement age, which will increase the old-age dependency ratio.

The impact of these factors on labour supply therefore varies over time and depends strongly on the structure of the population, resulting in a *"downward pressure on labour supply*"[27] .

Official projections estimate, in fact, that over the next ten years in many European countries "*large cohorts of prime-age people will become older and reduce their participation, while small cohorts of young people will become prime-age, as a result of which the prime-age will make up a significantly smaller percentage of the working-age population, while the elderly will make up a* larger *percentage*"[28] as depicted in Figure 13 below.

[26] *The economic impact of population ageing and pension reforms* available at: https://www.ecb.europa.eu/pub/pdf/other/ebart201802_02.en.

[27] Ibid.

[28] Ibid

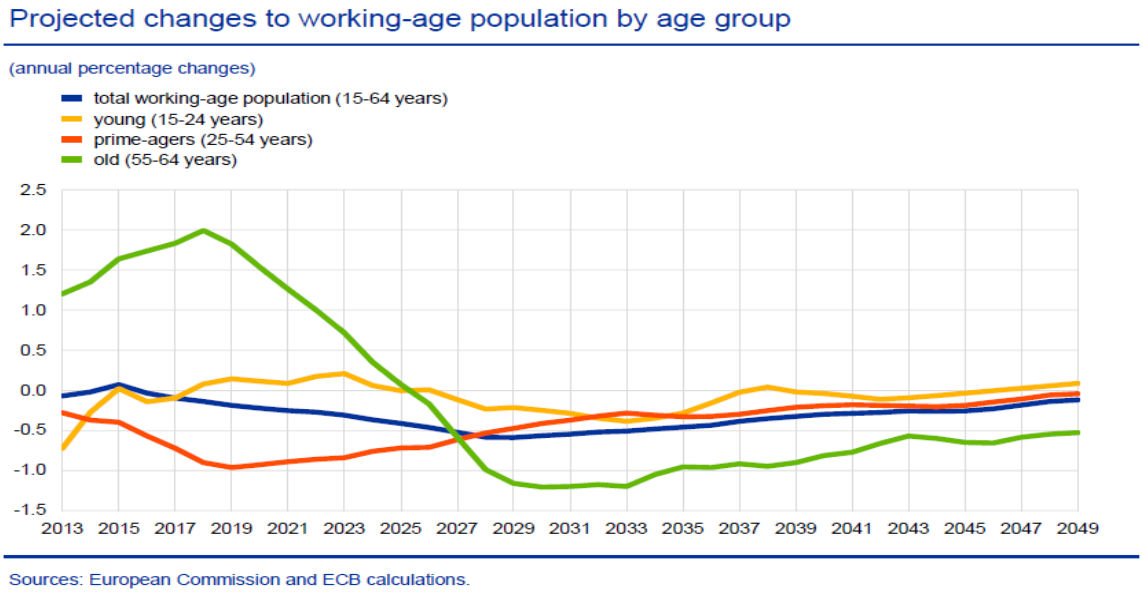


Figure 13 Project changes to working -age population by age group

Thus, to summarise the long-term macroeconomic impacts in the European area, the dynamic general equilibrium OLG model can be taken into consideration. The latter shows that *"population ageing affects the economy mainly through the labour market and changes in consumption and savings*" as well as pension expenditure. [29][30]

In the reference scenario, the ageing percentage determines - as depicted in Figure 14 - overall:

i) a reduction in GDP per capita (- 4.7%);
ii) the real interest rate decreases because the capital-labour ratio increases (+2.3%) due to the shortage of labour supply;
iii) total pension costs increase (+2.3%) due to the increase in the number of pensioners, while VAT revenue - which has remained constant - decreases due to the drop in consumption
iv) the additional spending on pensions is financed entirely through public debt, increasing the debt-to-GDP ratio by 59.3 percentage points in the long run (reaching unsustainable levels in the absence of policy adjustments).

[29] *The 2021 Ageing Report: Economic and Budgetary Projections for the EU Member States (2019-2070),* available at https://economy-finance.ec.europa.eu/publications/2021-ageing-report-economic-and-budgetary-projections-eu-member-states-2019-2070_en

Stylised long-term economic effects of ageing (reference scenario)

(percentage changes or percentage point changes)

Indicator	Change due to ageing shock
GDP per capita (%)	-4.7
Total consumption per capita (%)	-5.6
Ratio of workers' consumption to total consumption (pp)	-3.6
Employment (%)	-5.1
Ratio of workers' savings to GDP (pp)	41.7
Ratio of private investment to GDP (pp)	-0.3
Ratio of capital to labour (pp)	2.3
Ratio of public debt to GDP (pp)	59.3
Ratio of pension expenditure to GDP (pp)	2.3

Source: ECB calculations.
Note: Based on the model developed by Baksa and Munkacsi, calibrated for the euro area.

Figure 14 Stylised long - term economic effects of ageing (reference scenario)

Indeed, the European Commission's Ageing Reports[31] confirm that public spending on pensions, health care and long-term care, at 21% of GDP in 2013, will reach 23% of GDP in 2060[32] (see Figure 15).

[31] *The 2021 Ageing Report: Economic and Budgetary Projections for the EU Member States (2019-2070),* available at https://economy-finance.ec.europa.eu/publications/2021-ageing-report-economic-and-budgetary-projections-eu-member-states-2019-2070_en

[32] *The economic impact of population ageing and pension reforms*, available at: https://www.ecb.europa.eu/pub/pdf/other/ebart201802_02.en

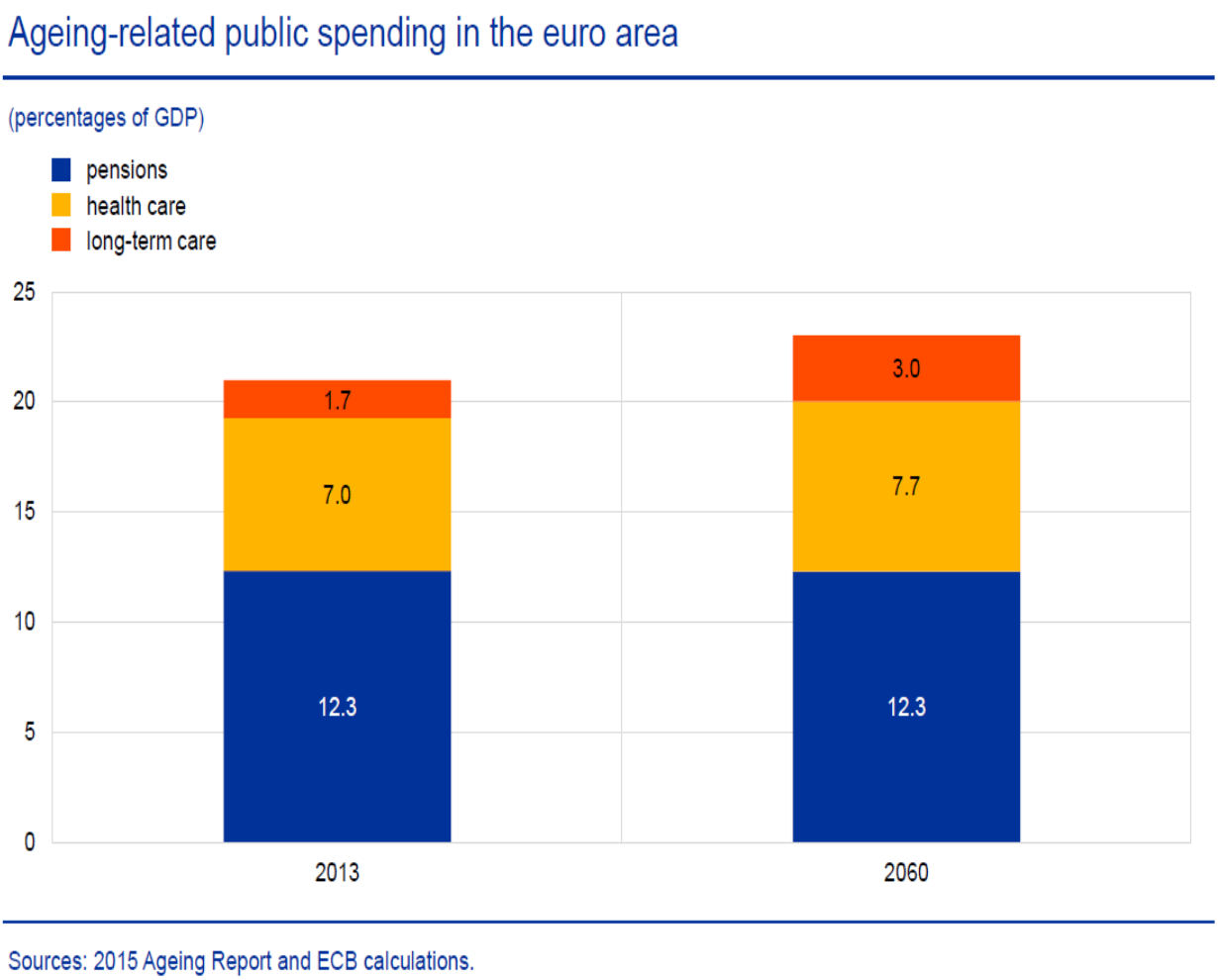


Figure 15 Aeging - related public spending in the euro area

It is therefore evident how population ageing directly affects the financing of those *pay-as-you-go* pension schemes in which the payment of contributions by workers directly finances the benefits of current pensioners.

Demographic effects alone are expected to increase pension expenditure by an average of 7.6% of GDP in the euro area over the period 2013-60 (see Figure 16)[33] .

[33] Ibid.

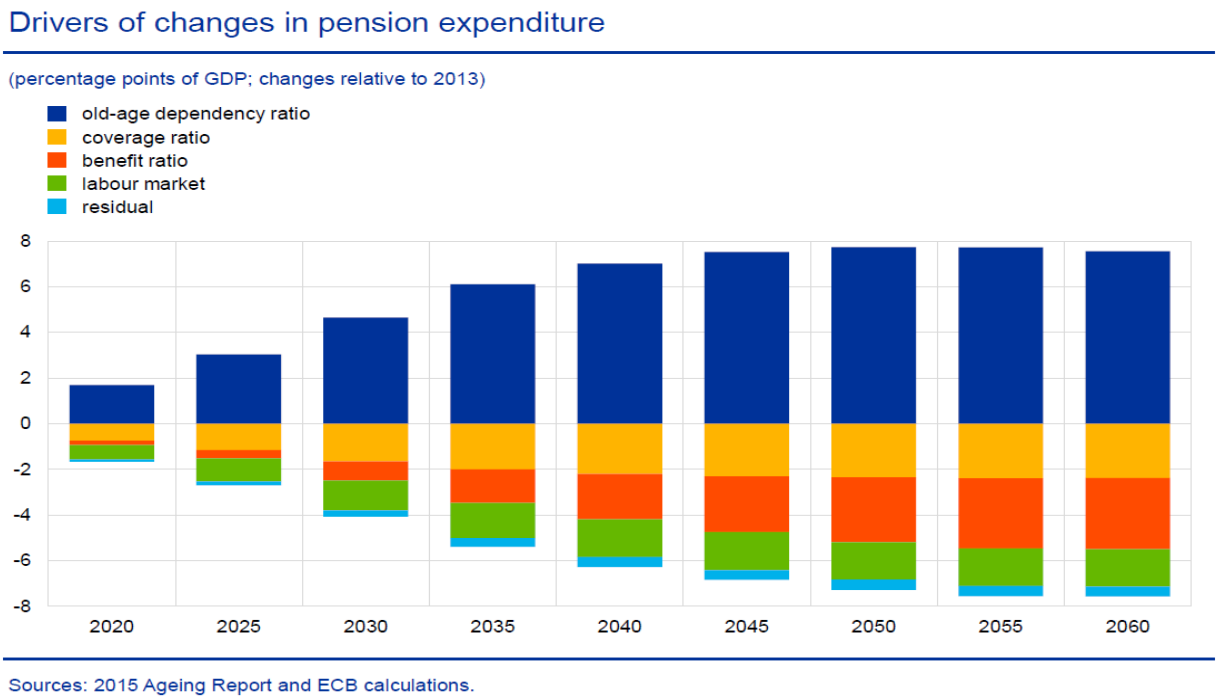


Figure 16 Divers of changes in pension expenditure

The European Commission's three-yearly Pension Adequacy Report[34] highlighted, once again, the importance of protecting the elderly population as one of the primary objectives of Europe 2020.

The demographic change underway will, as mentioned, put increasing pressure on the overall adequacy and sustainability of public (first pillar) and supplementary (second and third pillar) pension systems, making a future strategy aimed at identifying appropriate measures to make our protection systems fit for the future[35] increasingly urgent.

The European Commission in its *Green Paper on demographic ageing*, published in 2021[36] highlighted in fact the severe solvency problems of the pension system due to the so-called 'labour *shortage*' risk . [37]

[34] *Pension adequacy report 2021: current and future income adequacy in old age in the EU, Vol. 1,* available at https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8397&preview=cHJldkVtcGxQb3J0YWwhMjAxMjAyMTVwcmV2aWV3

[35] The Future of Saving: The Role of Pension System Design in an Aging World, available at: https://www.imf.org/-/media/Files/Publications/SDN/2019/SDN1901.ashx

[36] *Green Paper on demographic ageing, promoting solidarity and responsibility between the generations*, available at: https://eur-lex.europa.eu/legal-content/IT/TXT/?uri=CELEX:52021DC0050

[37] Ibid.

In order to compensate for '*the decline in the working-age population, the EU and Member States should promote policies that bring more people into the labour market, extend working life and improve productivity*[38].

Increased labour market participation, ensured through the promotion and utilisation of employment of persons belonging to ethnic minorities[39] , measures to promote the participation of women[40]. Moreover, the employment of persons with disabilities[41] and forms of tax incentives for the employment/development of entrepreneurship models of older people, could alleviate, at least partially, the problem of an ageing society and the related social mechanisms of pension provision in particular.

The absence of such interventions represents a real risk. For instance, the pension funds (so-called '*defined benefit'* funds) will not have sufficient assets to cover future pension liabilities, having to pay benefits over a longer period than originally planned; and that those (so-called '*defined contribution' funds*) will compromise their level of adequacy, understood as a guarantee of a sufficient level of income to maintain the desired standard of living in retirement.

In addition, the possible shift in portfolio preferences from older generations towards safer investments, coupled with lower economic growth associated with a shrinking labour force, negatively affects the Funds' returns by bringing them below the expected level.

Finally, the assets capitalised in the Funds will have to be spread over longer periods of retirement and if the latter is not postponed in proportion to the increase in life expectancy, the only viable alternative will be an increase in the contribution rate.

Indeed, this has been highlighted in the annual report for the year 2022, published by the Supervisory Commission on Pension Funds[42] as will be analysed in the second chapter.

[38] Ibid.

[39] *Action Plan for Integration and Inclusion 2021-2027*, available at: https://ec.europa.eu/commission/presscorner/detail/it/qanda_20_2179

[40] *Gender Equality Strategy*, available at: https://commission.europa.eu/strategy-and-policy/policies/justice-and-fundamental-rights/gender-equality/gender-equality-strategy_it

[41] *Union of Equality: European Commission presents Strategy for the Rights of Persons with Disabilities 2021-2030, available at: https://ec.europa.eu/social/main.jsp?catId=1484&langId=en*

[42] *Report for the year 2022 COVIP*, available at https://www.covip.it/la-covip-e-la-sua-attivita/pubblicazioni-statistiche/relazioni-annuali/relazione-annuale-2022

Chapter 2

Difficulties faced by Pension Funds and ways to reduce their effects

2.1 Lack of funds and sustainability problems

Before addressing the issues relating to the sustainability of supplementary pensions, it is fundamental to emphasize the functioning of the pension system.

In other words, depending on the nature – public and / or private – the pension system can be classified into: i) *mandatory:* provided by regulatory provisions that require all citizens of working age (public, private or self-employed employees) to join the state pension system in the various contribution modes provided; the latter, guarantees a minimum level of pension aimed at maintaining an adequate standard of living; ii) *voluntary:* which is a predominantly private nature, left to the free initiative of the individual with the aim of increasing the minimum income base ensured by the basic system. Moreover, it can then be further clustered according to the requirements of membership in: i) *collective*: aimed at certain groups of workers, who belong to the same company / sector / production sector; ii) *individual:* aimed at all citizens of working age who can access it individually regardless of their belonging to a specific reference category.

As for the Italian social security system introduced in our system at the end of an articulated legislative process, it can be divided into three pillars, in line with the classifications made by the OECD [43]:

- *first pillar*: represented by the compulsory social security that ensures basic benefits (so-called *"Welfare State"),* managed by the public funds (INPS – National Institute of Social Security), on the basis of the distribution criterion, according to which the contributions of active workers are used to finance the social security salaries of workers no longer active, through the provision of pension benefits (old-age and seniority pensions; invalidity; survivors; welfare);
- *second pillar:* better known by the term supplementary pension, on a voluntary and private basis provided through pension funds managed by private institutions (banks, insurance companies), asset management companies (SGR) and Securities Brokerage Companies (SIM) which aim to invest in the financial markets the contributions paid by workers, employers and the State as better illustrated below.
- *third pillar:* identified with the term supplementary pension whose membership is also voluntary but free from belonging to a specific group of workers and paid through specific types of pension funds (so-called funds open to individual membership and individual pension plans).

[43] OECD– Organization for Economic Co-operation and Development. The Organization for Economic Co-operation and Development (OECD) was established on 14 December 1960 by the Convention on the Organization for Economic Co-operation and Development.

Depending on the methods of financial management of flows (incoming social security contributions and outgoing pensions), social security systems can also be classified into systems: i) *distribution* (so-called *"pay-as-you-go" systems* - SR, *pay-as- you- go PAYG*) which are based on the payment of pensions through contributions paid by the working population; ii) *capitalization* (so-called *capitalization* SC - CR, *fully funded* FF) which provide that each worker receives a pension equal to the contributions paid by him plus the return obtained from their employment on the capital market.

To be more precise, pension systems can then be divided, depending on the method of calculating the social security benefits provided, into: i) *remuneration* in which the amount of the pension depends on an established coefficient of return, the contribution seniority and the salary base (*so-called "pensionable salary")* and regardless of the amount paid during the working life; (ii) *contributions* in which the pension allowance is determined on the basis of the amount of social security contributions paid, appropriately revalued.

The pension funds (second and third pillar), were introduced [44] into our system in the 90s with the so-called *Amato reform* - with the [45] aim of giving the worker the opportunity to supplement the compulsory pension treatment with other voluntary adhesion to the supplementary pension; subsequently, the same were regulated, in a more articulated way, by the Consolidated Law on the Complete Pension which introduced significant innovations to "[46]*ensure higher levels of social security coverage*", has distinguished the different types, also defining the beneficiaries, potential members and the body responsible for control and supervision.[47]

"*Pension funds are financial intermediaries which offer social insurance by providing income to the insured persons following their retirement. Often they also provide death and disability benefits.*[48]
In general terms, therefore , pension funds can be defined as undertakings for collective investment in savings which collect contributions from workers and/or employers and invest them in financial instruments, with a view to providing a pension benefit at the end of their working life or, as

[44] Bank of Italy Glossary; available at: https://www.bancaditalia.it/footer/glossario/index.html?letter=f

[45] Legislative Decree no. 503 of 30 December 1992 bearing "*Rules for the reorganization of the social security system of private and public workers, pursuant to Article 3 of Law no. 421 of 23 October 1992*", published in the Official Journal of 30 December 1992, n. 305, S.O.

46 Legislative Decree no. 252 of 5 December 2005 bearing the "*Rules governing supplementary pension schemes*", published in the Official Journal no. 289 of 13 December 2005, S.O.)

[47] COVIP (Commissione di Vigilanza sui Fondi pensione), an entity with legal personality under public law, established in the 1993 with the task of supervising, among other things, the proper functioning of the pension fund system to protect members and their savings destined for supplementary pensions

[48] C.f Glossary, available at: https://www.ecb.europa.eu/stats/financial_corporations/pension_funds/html/index.en.html

autonomous institutions whose purpose is to implement long-term savings programmes aimed at providing social security benefits to a group of persons under a collective agreement.

The payments that flow into the fund are managed according to the rules of capitalization: each payment is set aside in an individual retirement account that increases, from year to year, depending on the shares paid and the relative return generated by the investment of the fund's assets.

On retirement, the worker may decide - according to the forms permitted - to redeem the amount generated by management.

Pension funds can therefore be regarded as a form of long-term savings for a purely retirement provision.

Adherence to this form of supplementary pension is left – as mentioned – to the free decision of the individual worker even if, over time, the State has tried to encourage adhesions by resorting to the granting of important tax breaks.

Various categories of workers (employed, self-employed, self-employed, project-based or occasional) may join the Funds, but also individuals who are not working or who are dependent on a member of the family who adheres to a supplementary pension scheme.

With regard to the methods of establishment, according to the provisions of the Civil Code, pension funds may take the form of: i) *Unrecognized association* (Article 36); ii) *Association with legal personality* (Article 12); iii) *Destination assets* (Article 2117).

In addition, it is possible to differentiate the Funds on the basis of the methods of payment of contributions, distinguishing them into: i) defined *contribution pension funds*; ii) *defined benefit pension funds. Defined contribution* pension funds (DC) are those funds in which only the amount of contributions that must be paid regularly during the accumulation phase is predetermined at the time of conclusion of the contract, while nothing is established about the pension annuity which in turn will depend on a number of factors, such as the amount of contributions paid, the length of the reference period and the returns obtained from investing in the financial markets.

Forms of guarantee on the results of operations may be provided (such as the return of nominal capital), in the absence of guarantees the risk of financial investments is borne by members who, depending on the result, will find more or less high returns.

Defined benefit funds (*DB),* on the other hand, are those funds that guarantee a certain final benefit (indicated not in absolute value, but as a percentage of the worker's level of income or public pension). In this way, the fund – unlike the *defined contribution* funds – assumes the risk of the guaranteed benefit with the obligation to accumulate the resources necessary to meet it. This model has the obvious

advantage for the worker of knowing from the outset the amount of benefit he will receive in the future. [49]

A further classification of the Funds can be carried out on the basis of the form of participation, distinguishing them into:

Negotiated or closed pension funds: they are supplementary pension forms that arise, in the context of national sector or company bargaining, from a bilateral agreement between representatives of workers and employers (also belonging to a specific territory or geographical area so-called territorial funds).[50]

Open-ended pension funds: these are supplementary pension schemes set up by banks, insurance companies, asset management companies (asset management companies) and securities brokerage companies (SIM)135. They are intended for an indiscriminate community of potential members interested in accumulating a pension annuity: all workers or groups of workers without pension funds closed or transferred from closed-end funds are therefore direct recipients.

The assets of the fund are intended exclusively for the provision of retirement benefits to participating workers and are therefore inaccessible both by the promoter's creditors and by the creditors of the participants.

From a practical point of view, their operation is similar to that typical of accumulation plans, except that benefits can only be paid once the necessary requirements to access the public pension have been accrued.

Individual Pension Plans of insurance type (PIP): are individual pension forms created through the signing of life insurance contracts for social security purposes, introduced into our legal system with Legislative Decree no. 47/2000, in order to give greater articulation to the third pillar of social security.

Pre-existing pension funds: these are pension schemes established prior to Legislative Decree 124 of 1993 authorized by law to continue to operate in derogation from the general discipline – to which workers can access through collective membership mechanisms.

Hence, it is evident that the role assumed by supplementary pensions in the various states of the Union is closely linked to the public pension system and in particular to the amount of pension benefits recognized according to an inversely proportional relationship, as represented by Figure 17[51].

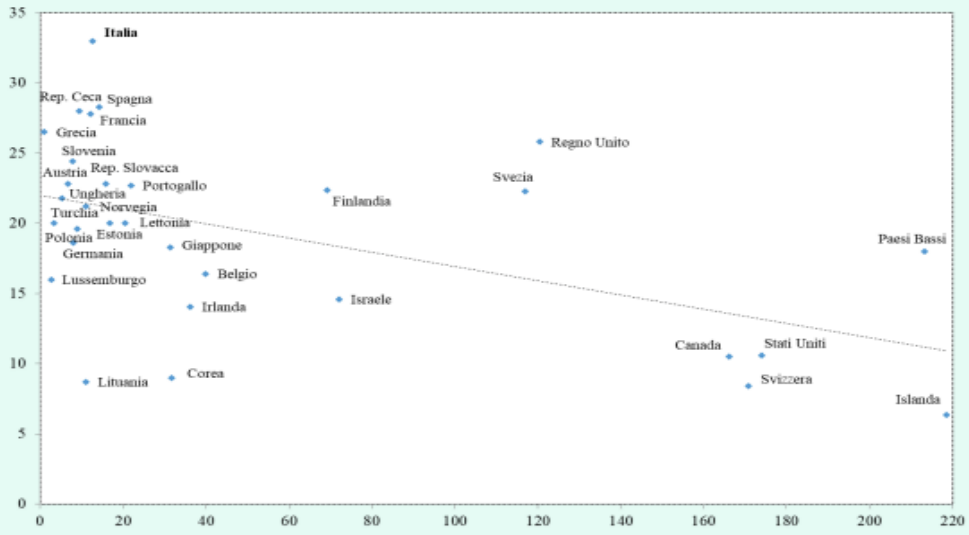
[49] It specifies that Newly established funds for employees and cooperators may be consisting solely of defined contribution scheme; while the funds of self-employed workers and the liberal professions may also provide for the defined benefit scheme.

[50] These funds are therefore set up on the basis of: Contracts Collective Promoted trade unions and employers' unions; (ii) Agreements between working members of cooperatives promoted by national associations of the cooperative movement; (iii) Agreements between self-employed workers and freelancers.

[51] Ibid., cf. Pag. 204

Contributi versati alla previdenza pubblica in alcuni paesi OCSE e dimensione del sistema pensionistico privato

(dati di fine 2021 o ultimi dati disponibili; asse x: attività delle pensioni private in percentuale del PIL; asse y: percentuale di contribuzione alla previdenza pubblica in rapporto alla retribuzione – lavoratori dipendenti)



Fonte: Elaborazioni su dati OCSE.
I dati relativi alle attività previdenziali comprendono, laddove disponibili, non solo le attività dei fondi pensione, ma anche le risorse accumulate in altri veicoli pensionistici. Alcuni paesi sono stati esclusi per indisponibilità di dati completi o per mancanza di specifica contribuzione al sistema pensionistico pubblico.

Figure 17 Public pension contributions in selected OECD countries and size of the private pension system

Source COVIP Report 2022

Having outlined the reference framework, let's now analyze the difficulties that this social security system has encountered especially recently (post health emergency) and what are the possible ways to reduce its effects.

As mentioned, the main evidence about the trend of this market comes, at national level, from the Supervisory Commission on Funds Pensione (COVIP) which in its annual periodic reports outlines, among other things, the trend of the sector, the critical issues and the possible interventions.

Specifically, in the report for 2022, COVIP, in representing the summary data, substantially highlighted how the succession of recent events has "*subjected the supplementary pension system to resistance tests. The pandemic and its profound impact on living and working conditions, [...] the resulting increase in debt, the accumulation of geopolitical tensions [...], the impact on energy supplies on prices [...], the reversal of the process of trade globalization [...], the reaction of central banks and[...] and the reaction of financial markets in 2022, have recorded huge losses for both equities and bonds unprecedented*" [52].

[52]. of *Report for the year 2022*, published on 7 June 2023 by COVIPcf. Pagg. 20 et seq.

Although, in fact, there has been an increasing trend in memberships / contributions and related returns (in the medium - long term), the "structural criticalities *of the system*" persist.[53]

The demographic decline, the composition of society - which was discussed in chapter 1 - combined with the low participation in supplementary pensions by the so-called "*less strong figures*": women (56.4% compared to 74.6% of men) and young workers between 15 and 19 years (26.5% compared to 32.1% of the 20-24 age group), to which is added the high level of contribution to the first pillar - unparalleled in other European countries - are factors that threaten overall long-term sustainability - of this sector and limit its possibilities for evolution/growth.

According to the Report, the difference in participation in supplementary pension provision undoubtedly reflects that relating to the "*degree of involvement in the labour market*[54]", as represented by Figures 18 and 19 below.

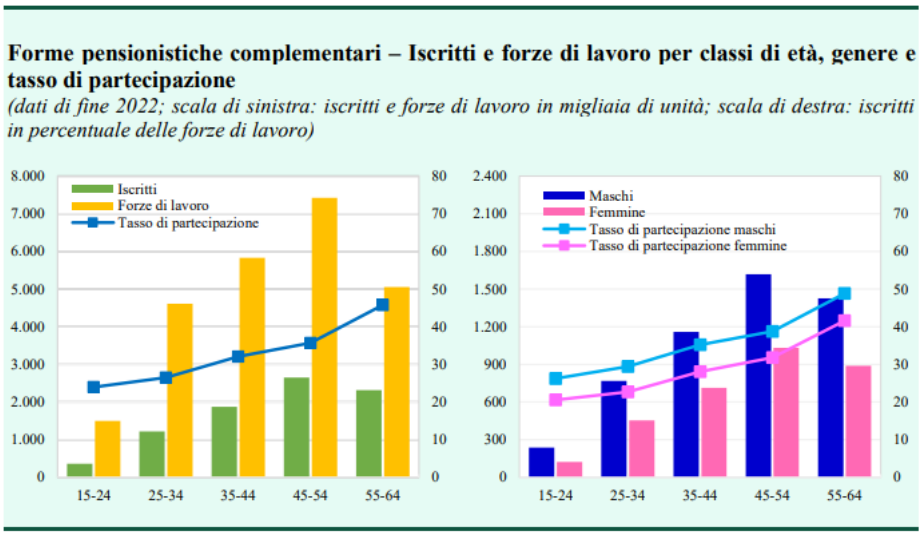


Figure 18: *Supplementary pension schemes – members and labour force by age, gender and participation rate*

Source Report for the year 2022 Covip

[53] Ibidem

[54] Ibidemcf. Pagg. 60 and seg.

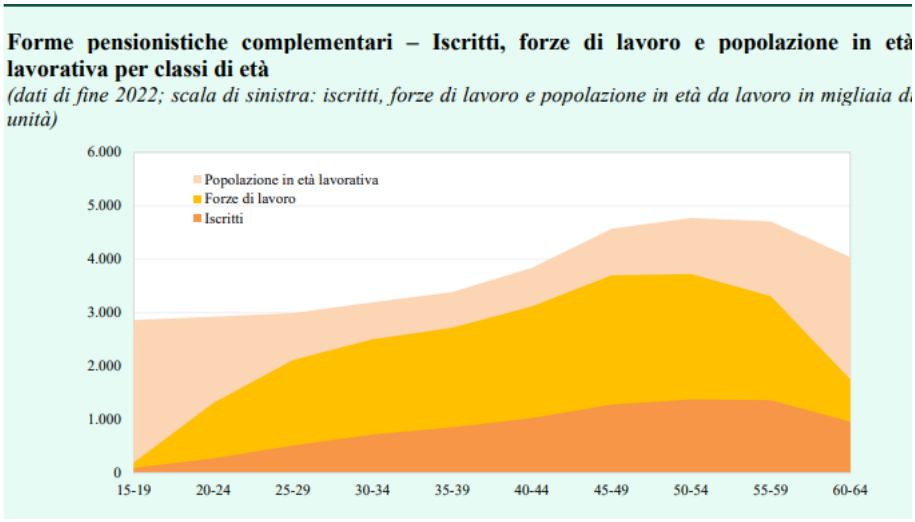
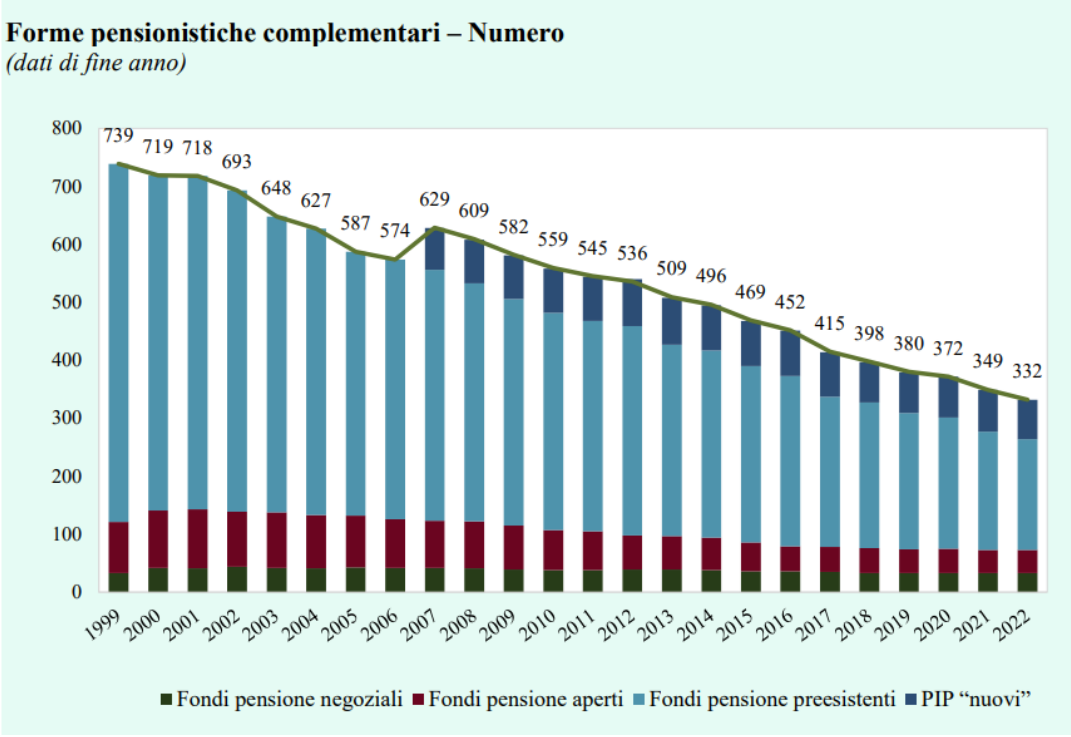


Figure 19- Supplementary pension schemes – members, labour force and working-age population by age group

Source Report for the year 2022 Covip

Continuing in the representation of the summary data, COVIP then clarified that, at the end of 2022 - and in line with the trend shown since 1999 - there was a reduction in supplementary pension forms (- 17 compared to 2021) which today are 332 divided into: i) 33 negotiated pension funds; (ii) 40 open-ended pension funds; (iii) 68 pre-existing insurance-type pension plans (new PIPs); (iv) 191 pre-existing pension funds, as shown in Figure 20 below.[55]



[55] Ibid., cf. Pag. 15

Figure 20 Supplementary pension schemes – Number

Source Report for the year 2022 Covip

In addition, the sector was characterized by:

- an increase in members to 9.240 million (+ 5.4% compared to 2021) and the relative participation rate (36.2% against 34.7% in 2021) in relation to the workforce (25.127 million units employed or looking for work with at least 15 years in 2022);[56][57]
- an overall reduction (-3.6% compared to 2021) in benefits (205.6 billion euros) given the capital losses on the securities portfolio determined by the negative trend in the financial markets[58]
- a drastic decrease, over the last year, in the returns of both the equity and bond sectors and substantial stability of the same in a ten-year observation period (2012/2022), and 20-year (2002 – 2022) as represented by the following Figure 21. [59][60]

Forme pensionistiche complementari – Rendimenti netti medi annui
(valori percentuali)

	31.12.2021-31.12.2022	31.12.2019-31.12. 2022	31.12.2017-31.12. 2022	31.12.2012-31.12. 2022	31.12.2002-31.12. 2022
	1 anno	3 anni	5 anni	10 anni	20 anni
Fondi negoziali					
Garantiti	-6,1	-1,7	-0,8	0,7	-
Obbligazionari puri	-3,5	-1,1	-0,6	0,0	1,1
Obbligazionari misti	-10,3	-0,7	0,5	2,4	3,0
Bilanciati	-10,5	-0,9	0,5	2,7	3,3
Azionari	-11,7	1,2	1,9	4,7	4,2
Rendimento generale	*-9,8*	*-0,8*	*0,4*	*2,2*	*2,9*
Fondi aperti					
Garantiti	-7,2	-2,1	-1,1	0,3	1,4
Obbligazionari puri	-10,9	-3,6	-1,6	0,2	1,4
Obbligazionari misti	-7,6	-1,9	-0,7	1,2	2,1
Bilanciati	-11,5	-0,7	0,3	2,9	3,0
Azionari	-12,5	1,4	2,0	4,9	3,7
Rendimento generale	*-10,7*	*-0,7*	*0,2*	*2,5*	*2,7*
PIP "nuovi"					
Gestioni separate	1,2	1,3	1,4	2,0	-
Unit linked					
Obbligazionari	-5,2	-1,8	-0,9	-0,2	-
Bilanciati	-12,3	-1,6	-0,4	1,7	-
Azionari	-13,2	0,6	2,0	4,7	-
Rendimento generale	*-11,5*	*-0,6*	*0,6*	*2,9*	-
Per memoria:					
Rivalutazione del TFR	8,3	4,3	3,3	2,4	2,5
Tasso di inflazione	11,3	4,9	3,2	1,7	1,9

I rendimenti sono al netto dei costi di gestione e dell'imposta sostitutiva per tutte le forme pensionistiche incluse nella tavola; anche per il TFR la rivalutazione è al netto dell'imposta sostitutiva. I rendimenti dei PIP sono stati nettizzati sulla base dell'aliquota fiscale tempo per tempo vigente, secondo la metodologia di calcolo standardizzata definita dalla COVIP (*cfr. Glossario*, voce "Rendimenti netti dei PIP").
I rendimenti dei comparti garantiti non incorporano il meccanismo della garanzia.
Il tasso di inflazione corrisponde alla variazione annua dell'indice ISTAT dei prezzi al consumo per le famiglie di operai e impiegati (FOI) calcolata rispetto al mese di dicembre dell'anno precedente.
Per periodi pluriennali sono riportate le medie annue composte.

Figure 21 – Supplementary pension schemes – Average annual net returns

[56] which corresponds to 10.290 million active positions (on average, 11 positions refer to every ten members)

[57] Ibid., cf. Pages. 19 and 55 et seq.

[58] Ibid., cf. Pages. 29 et seq.,

[59] *Negotiated funds lost 9.8%, open-ended funds 10.7%, Gestioni Unit linked (class III PIP) lost 11.5%, except for the hoped for management of class I which gained 1.2%* , cf. Ibid., p. 48 et seq.

[60] The average annual returns composed of the lines with the highest equity content are placed, for all types of forms Retirement benefits between 4.7 and 4.9%. Conversely, bond lines show average yields close to zero; the lienee balanced average returns ranging from 1.7% of PIPs (Unilit linked) 2.7% of trading funds and 2.9% of open-ended funds; cf. Ibid., p. 50 and seg.

The strongly negative trend of the financial market in 2022 has, therefore, had a direct impact on the resources accumulated by the pension and supplementary forms of the main economies; the American pension funds (which represent about 70% of the total assets of pension funds in the OECD area) decreased by about 15%; while at European level, there was a decrease of about 13% with more significant reductions in Belgium (-12.2%), in Portugal (-12.5%) and especially in the Netherlands (-20.7%) putting the system in difficult situations also with regard to liquidity management.

This phenomenon was also particularly evident in the United Kingdom, because of the sudden rise in interest rates, pension funds found themselves, in fact - while remaining in solvency conditions - in the difficulty of having sufficient liquidity to meet large demands for margins on positions making it necessary to resort to the sale of government bonds in sterling at a time when their market was already under speculative pressure.

From what previously mentioned, it can be evicted that the *"changed macroeconomic reference framework, with the sudden rise in interest rates and the significant increase in inflation, has placed some pension funds in situations of difficulty also with regard to liquidity management"*.[61]

It should be noted that regulatory interventions at both Community and national level have been aimed at adopting measures to improve the overall sustainability of social security systems. such as: 1) cuts in retirement benefits; (ii) improving pension adequacy; (iii) indexation; (iv) taxes and contributions; (v) strengthening incentives to work; (vi) use of new technologies to reduce the cost of running pension systems.

[61] Ibid., cf. Pag. 202 et seq.

2.2 Higher dependency ratios and pressures on pension systems

As mentioned in the previous chapter (cf. section 1.3), the increase in life expectancy represents a considerable difficulty at the social security level to such an extent that it is included - in the process of calculating pension annuities - in the so-called 'biometric *risks*'[62] , especially where there are no compensatory mechanisms such as an increase in the number of births and an increase in the labour force.

The old-age dependency ratio - destined, as mentioned, to increase over the coming decades - clearly represents the demographic imbalance taking place globally, see Figure 22 below[63] .

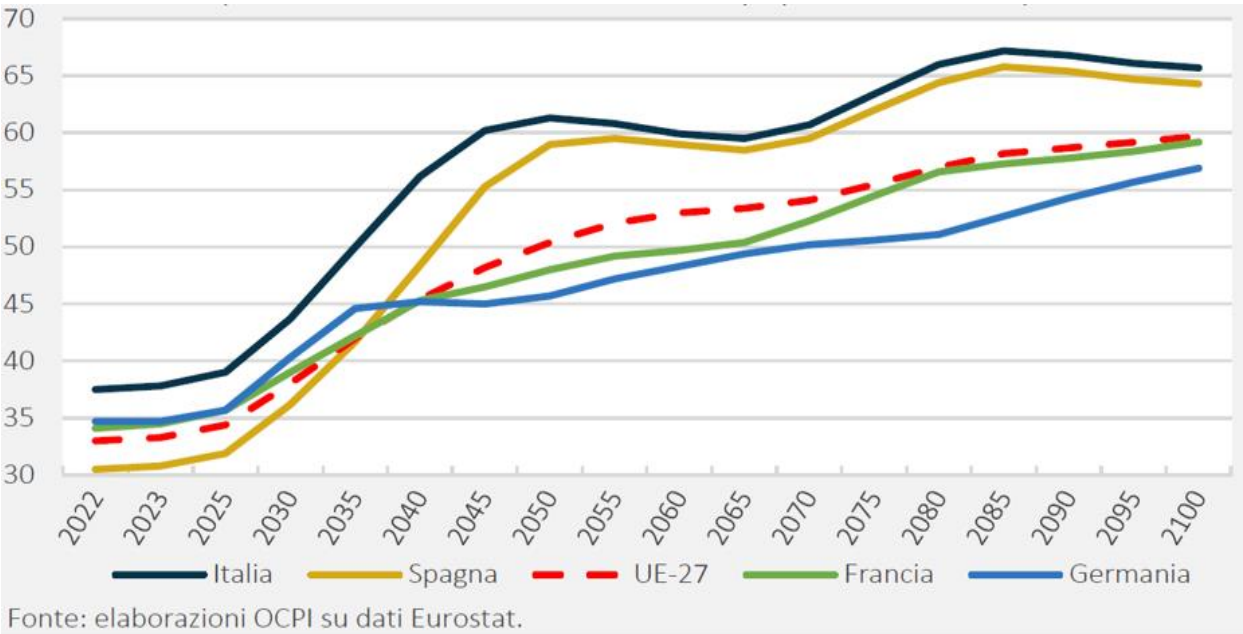


Figure 22 - Age dependency ratio (number of elderly people in the total working population)

This rate is, therefore, also a first measure of the impact that the demographic changes outlined above will have on pension sustainability: the fact that in the future there will be fewer and fewer active workers for each individual leaving the labour force is enough on its own to raise serious doubts about the near future of the pension system, especially of public pay-as-you-go systems that need stable worker/pensioner ratios.

[62] Glossary of biometric *risks*: '*Death, disability and longevity risks*' available at: https://www.covip.it/per-il-cittadino/educazione-previdenziale/glossario/rischi-biometrici

[63] *The economic impact of population ageing and pension reforms* available at: https://www.ecb.europa.eu/pub/pdf/other/ebart201802_02.en.

Specifically, as has been depicted, the problem of ageing and the consequent increase in the dependency ratio in the coming decades will be exacerbated by the presence of a phenomenon of a contingent nature: the gradual exit from the labour market by the large generation of the baby-boom generation of the 1950s and 1960s.

A large block of new pensioners will therefore increase the average European age in the coming years, while, in the longer term, the increase in life expectancy (given the trend in fertility rates) will be a structural factor.

According to projections published by Eurostat in 2022, the composition of the population will be more than 30 per cent people between the ages of 45 and 60 (with the highest concentration in the 55-59 age group) until in 2045 there will be more than 25 per cent of the population over 70 years of age (as opposed to 18 per cent today), as shown in Figure 23 below.

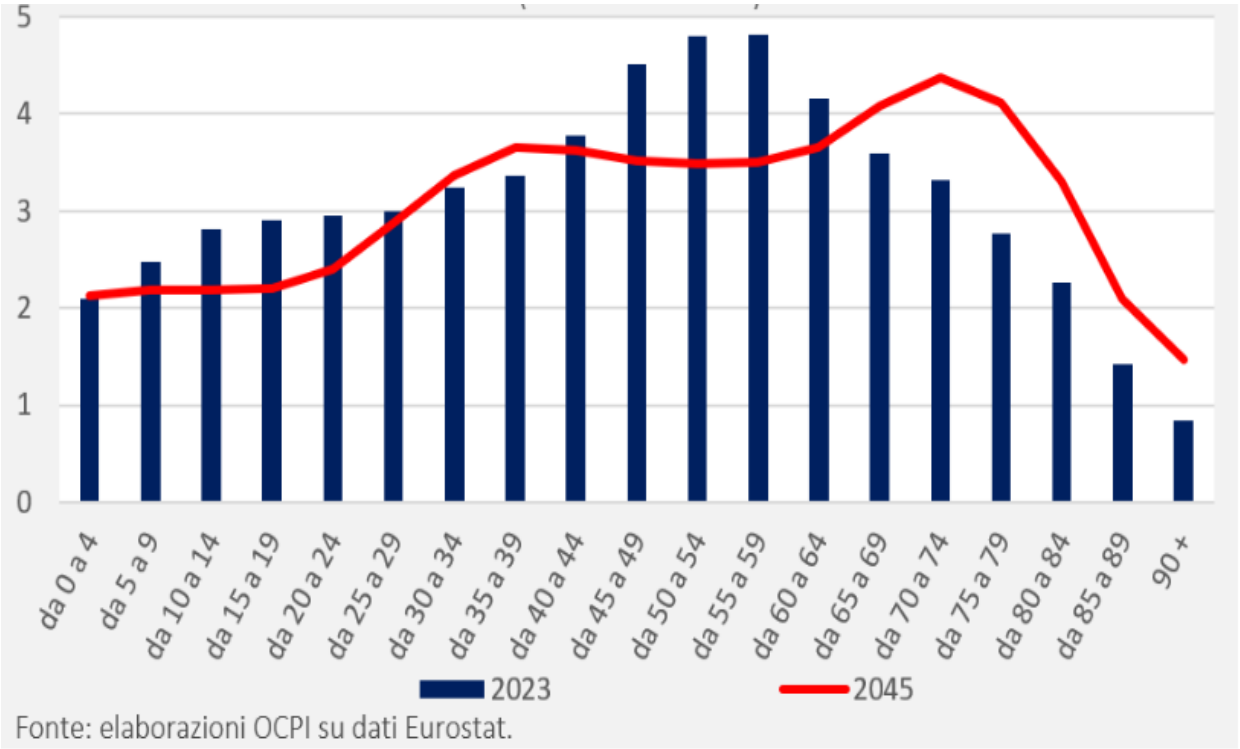


Figure 23 - Italian population composition 2023-2045

The 2022 - 2100 projections - made through *the structural dependency ratio*[64] - also clearly confirm the current generational imbalance, as this ratio is always above 50 per cent, reaching a peak of 89 per cent in 2085 (see Figure 24).

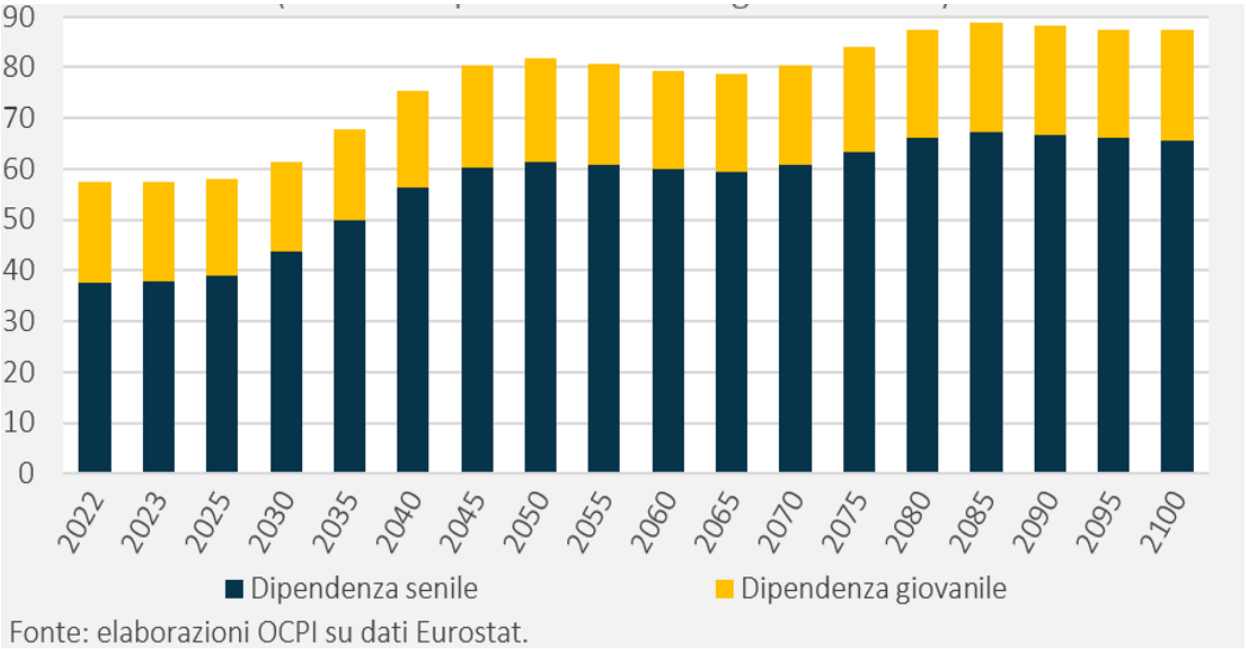


Figure 24 - Structural dependency ratio breakdown (number of inactive persons per 100 active persons)

It follows that the '*active*' population will be increasingly weighed down by the '*inactive*'; compared with the main European countries, Italy ranks first in terms of age dependency ratio.

On average, in the European Union today there are about 3 people of working age for every person over 65, while in Italy there are 2.6 and it is estimated that this ratio will fall to 1.5 in 2100. (see Figure 24 above).

Examining, specifically, the Italian situation, the periodic report of the Ministry of Economy and Finance[65] observes that: "*as regards the dependency ratios, the current projection and the one previously used are coincident (Figure 25 letter a). The total dependency ratio, which relates the share of the young (under 15 years) and elderly (over 64 years) population to the active population, increases in the first part of the projection period until it reaches a maximum of about 87.3% around 2050. Thereafter, it decreases slightly, settling at around 83.7% in the last five*

[64] This measure reports how many individuals of non-working age (0-14 years and over 64 years) are per 100 of working age (15-64 years).

[65] *The medium- to long-term trend of the pension and social health system*, Report 24 of 2023, available at https://www.rgs.mef.gov.it/VERSIONE-I/attivita_istituzionali/monitoraggio/spesa_pensionistica/, see p. 29 et seq.

years" and again that *"this dynamic is strongly influenced by the evolution of the old-age dependency ratio, which increases as the baby-boom cohorts move from active to retirement age"*.

The report then points out that the youth dependency ratio is "*essentially stable throughout the forecast period*" and that the old-age ratio (Figure 25, letter b) provides a "*proxy for the degree of ageing of the* population"[66] growing rapidly until 2040 (from 183% in 2021 to 289% in 2040) for the same reasons as those highlighted with reference to the old-age dependency ratio.

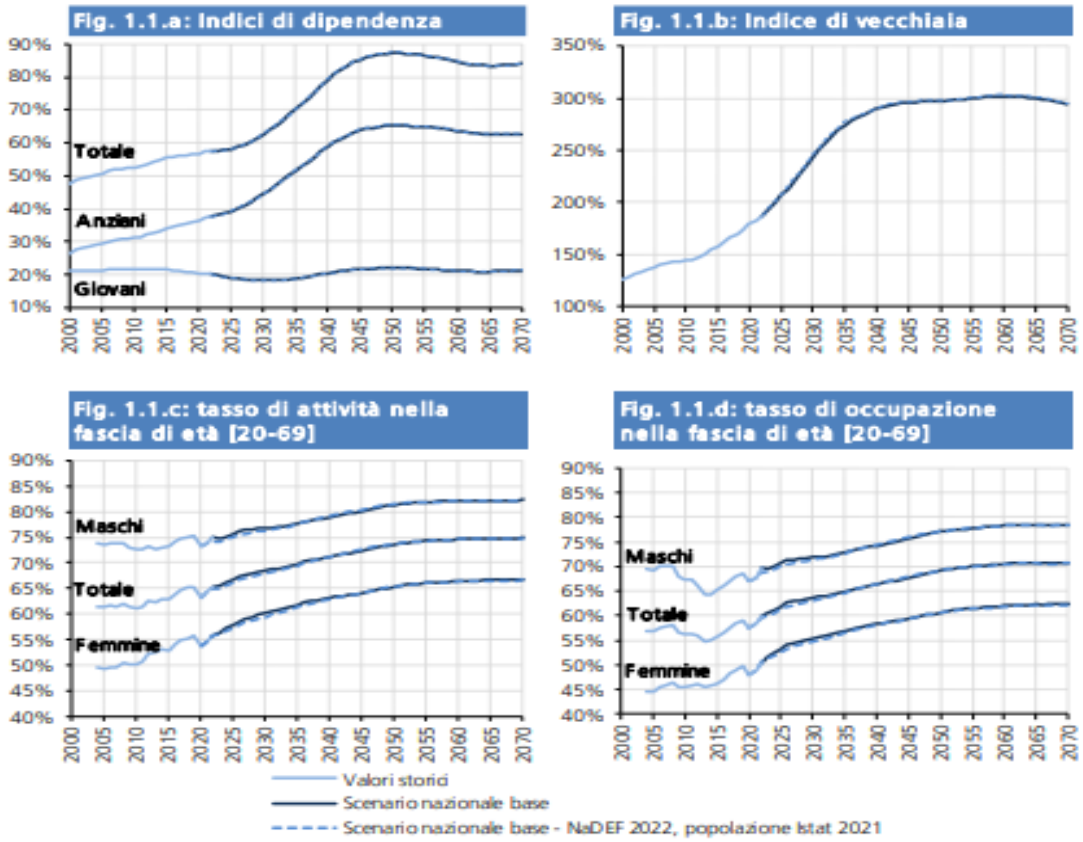


Figure 25 - Demographic and macroeconomic indicators - Comparison of national scenarios
Source MEF - Report 24 of 2023

It follows from the framework outlined above that pension systems, as a whole, are threatened by a strong solvency risk over the next two decades due to a rapidly increasing ageing population with consequent impacts on pension expenditure that will have to be spread over an ever decreasing number of active people

This emerges from the annual Pension Adequacy Report (PAR), published by the Social Protection Committee (SPC) and the European Commission in 2021, according to which '*demographic and*

[66] Ibid.

labour market developments bring into focus the rules that determine the allocation of risks and resources between different groups in society'[67] .

According to the report's conclusions, "*among the potential impacts of changes in the economy and the world of work is a decrease in the share of labour income, while wage trends do not necessarily follow productivity trends. This would put pressure on the financing of pension systems, which are largely based on labour contributions. As a consequence, Member States may have to reconsider the financing mechanism of their social protection systems and, in particular,* pension *systems*'[68] .

[67] *2021 Pension adequacy report Current and future income adequacy in old age in the EU,* available at: https://ec.europa.eu/social/main.jsp , see p. 36

[68] Ibid. p. 36

2.3 Pension Reforms and Policy Measures

As far as the system of reforms/regulatory interventions is concerned, it should be noted that - both at national and EU level - a series of measures have been enacted over time to introduce, make sustainable and develop the complementary social security system.

At the national level, wishing to briefly review the main stages in the evolution of pension fund regulation, the main interventions since the 1990s should be analysed, as follows:

- Legislative Decree No. 503 of 1992, on the *Rules for the reorganisation of the social security system for private and public workers, implementing Delegated Law No. 421 of 1992*[69] ;
- Legislative Decree No 124 of 21 April 1993, better known as the *'Amato reform*', which introduced the first regulatory framework for collective complementary pension schemes, i.e. pension funds, into our legal system[70] ;
- Law No 335 of 8 August 1995, known as the '*Dini Reform*'[71] which made substantial changes to the social security system by determining the shift from the earnings-related method to the contribution-based method for calculating public pensions;
- Legislative Decree No. 47 of 12 April 2000[72] , on the reorganisation of the tax regulation of forms of supplementary pensions, both collective and individual;
- Law No. 243 of 2004, known as the *'Maroni Reform*'[73] which delegated the government to regulate forms of support for supplementary pension schemes by providing for the contribution of accruing severance pay (TFR);

[69] Recording *'Rules for the reorganization of the social security system for private and public workers' according to article 3 of law 23 october 1992, n. 421*, published on Official gazzette in GU n. 30 of dicembre 1992, S.O. n. 305

[70] Containing the '*Reform of the Compulsory and Complementary Pension System*', published in G.U. No 190 of 16 August 1995, S.O. n. 40)

[71] Containing the '*Reform of the Compulsory and Complementary Pension System'*, published in the Official Gazette, No 198, 25 August 1995, S.O. No 106.

[72] Recording the '*Reform of the fiscal discipline of complementary social security, pursuant to Article 3 of Law no. 133 of 13 May 1999, published* in G.U. no. 57 of 9 March 2000, S.O. no. 41.

[73] Recording *'Norme in materia pensionistica e deleghe al Governo nel settore della previdenza pubblica, per il sostegno alla previdenza complementare e all'occupazione stabile e per il riordino degli enti di previdenza ed assistenza obbligatoria*', published in G.U. n.222 of 21-09-2004.

- Legislative Decree No. 252 of 2005, implementing the Maroni enabling act, which brought about the so-called '*reform of the severance pay fund*' in the area of complementary pensions[74] .

An analysis of the above measures shows how the legislature - in acknowledging the progressive withdrawal of the State from the social security sector - has taken note of the need to compensate and supplement the public system, delegating the Government to issue a series of measures aimed at encouraging the establishment, on a voluntary collective/individual basis, of alternative forms of social security for the provision of supplementary pension benefits.

Specifically, Legislative Decree no. 503/1992, cited above, constitutes the first legislative intervention in the history of Italian social security with which the Italian pension system was rationalised based on: i) a minimum contribution period to qualify for old age pensions (35 years for all workers) with the simultaneous overcoming of the differentiation between civil servants and other categories of wage earners; ii) raising the minimum contribution requirement for old age pensions (from 55 to 60 for women and from 60 to 65 for men) with the relative increase in the minimum contribution requirement (from 15 to 20 years) .

The measure, however, that introduced the so-called *second pillar in* our legal system was - as said - the enactment of Legislative Decree No 124/1993, known as the *Amato reform*, which introduced and regulated pension funds by providing for two types: (i) '*closed*' of a contractual and associative nature; (ii) *'open*' of an individual nature, dictating the rules for their operation, methods of establishment, management of resources, and contribution/disbursement of final benefits.

The subsequent law, presented by the Dini government in 1995, then favoured the real establishment of pension funds by determining the switch from the retributive to the contributory method for calculating the basic pension.

For the purpose of this research, it is crucial to mention the Legislative Decree No. 47/00 which introduced the so-called *third pillar* (aimed at individuals who did not enjoy basic social security

[74] *Regulating the "*Regulation of supplementary pension schemes" published in G.U. no. 289 of 13 December 2005, no. 200, S.O ' published in G.U. no. 289 of 13 December 2005, S.O. no. 200

or who performed unpaid work in connection with family responsibilities) alongside collective supplementary pension schemes.

The tax regime of pension funds was then reformed by Legislative Decree No 252/05, which brought important simplifications in addition to the '*reform of the TFR as of 1 January 2007*'; according to this measure, (private) employees had to decide by 30 June 2007 or within six months of employment what to do with their accrued TFR: leave it in the company or put it in a pension fund.

Lastly, the provisions contained in Ministerial Decree No. 62 of 2007, setting forth the "*Regulation for the adjustment to the provisions of Legislative Decree No. 252 of 5 December 2005, on the subject of pre-existing forms of supplementary pension schemes as of the date of entry into force of Law No. 421 of 23 October 1992*", followed by the Covip implementing provision[75] on the implementation by pre-existing forms of pension schemes of the provisions of Ministerial Decree 62/2007, are valid.

The legislative framework at EU level, as regards supplementary pensions, has also undergone, over time, important completion and improvement interventions in line with the objectives of a well-functioning single market, social protection and social security of the European Union.

The main stages that have marked - from the 1990s to the present day - the complex process of defining the regulatory framework for supplementary pensions are represented by the following measures:

- February 1992: the ratification of the Maastricht Treaty[76] formalises the introduction of social issues among the prerogatives of the EU, as a natural reflection of the protection of the principle of free movement;
- December 1994*: The* European Commission presents the Communication *'An Internal Market for Pension Funds'*[77] *,* later annulled by a ruling of the European Court of Justice ;

[75] Covip Directives of 23 May 2007, disponibile all'indirizzo: https://www.covip.it/normativa/fondi-pensione/atti-generali-covip/deliberazione-del-23-maggio-2007

[76] *Treaty on European Union (TEU*), published in OJ *No C 191 of 29/07/1992*, available at: https://www.europarl.europa.eu/about-parliament/it/in-the-past/the-parliament-and-the-treaties/maastricht-treaty

77 "*Draft Report Commission Communication - Towards a Single Market for Supplementary Pensions - Results of the Consultation on the Green Paper on Supplementary Pensions in the Single Market"*, available at: https://www.europarl.europa.eu/meetdocs/committees/empl/20000223/384894_it.doc

- June 1997: the European Commission publishes the so-called "*Green Paper on Supplementary Pensions in the* Single *Market*"[78] , which is the first policy document aimed at launching a consultation process on measures to be implemented at European level for the full development of supplementary pensions. The Green Paper highlights the positive role of pension funds in the European context by stressing how their potential has remained untapped due to the overly strict constraints imposed by the rules on investments that can be made by pension funds and the loss of potential benefits resulting from the failure of individual national systems to comply with the free mobility of workers;
- June 1998: the Council of the Union adopts Directive 98/49/EC[79], aims to remove obstacles to the free movement of workers by ensuring the protection of acquired supplementary pension rights, with reference to both mandatory and voluntary schemes;
- May 1999: The Commission publishes a new Communication entitled '*Towards a Single Market for* Supplementary *Pensions*'[80] calling for a harmonised EU-wide regulatory framework for supplementary pensions, to be developed around three main axes:
    - the drafting of a proposal for a directive on regulation
    - occupational pension funds (second pillar);
    - the abolition of obstacles to professional mobility;
    - coordination of the tax systems of the different Member States.
- October 2000: *the* Commission issues the Directive on *Institutions for Occupational Pension Provision (*IORP)[81], with the aim of introducing regulation of the entire supplementary pension sector in order to guarantee those concerned;
- April 2014: the Council issues Directive 2014/50/EU[82] on minimum requirements for enhancing worker mobility between Member States by improving the acquisition and preservation of supplementary pension rights. The measure is an important step towards

[78] Available at: https://eur-lex.europa.eu/legal-content/IT/TXT/PDF/?uri=CELEX:51997DC0283&from=EN

[79] *Council Directive 98/49/EC of 29 June 1998 on safeguarding the supplementary pension rights of employed and self-employed persons moving within the Community*, published in *OJ No L 209 of 25/07/1998*, available at , *https://eur-lex.europa.eu/legal-content/IT/TXT/PDF/?uri=OJ:L:2022:098:FULL&from=EN*

[80] Available at: https://www.cerp.carloalberto.org/wp-content/uploads/2008/12/com_134_99.pdf

[81] *Directive 2003/41/EC of the European Parliament and of the Council of 3 June 2003 on the activities and supervision of institutions for occupational retirement provision, published* in the Official Journal of the European Union on 23.9.2003, available at: https://eur-lex.europa.eu/legal-content/IT/TXT/PDF/?uri=CELEX:32003L0041&from=LV

[82] Directive 2014/50/EU of *the European Parliament and of the Council of 16 April 2014 on minimum requirements for enhancing worker mobility between Member States by improving the acquisition and preservation of supplementary pension rights*, published in the EN Official Journal of the European Union of 30.4.2014, available at https://eur-lex.europa.eu/legal-content/IT/TXT/PDF/?uri=CELEX:32014L0050

achieving one of the fundamental objectives of the Union, namely the free movement of persons, of which Directive 98/49/EC is a first specific implementing measure.

- December 2016 the European Directive 2016/ - known as IORP II (*Institutions for Occupational Retirement Provision II*)[83] - *"on the activities and supervision of institutions for occupational retirement provision*" is issued, which reforms the so called IORP I, which implements a genuine reform of the supplementary pension system and, in particular, of the pension funds known at EU level as IORPs (Institutions for Occupational Retirement Provision)[84] , with the aim of:
    - ensure the capital security of pension funds through improved *governance and risk management* of member countries' pension funds in order to facilitate cross-border activity and transfers of pension forms;
    - ensure *transparency* and correct information to members and beneficiaries.

Following the entry into force of the aforementioned Directive[85] , therefore, the Italian Pension Funds have: i) modified the governance model to make it more efficient by ensuring that there are no conflicts of interest and that the Pension Fund is de facto managed by a single person; iii) made information on the Fund (including through the publication of financial statements) and on the individual positions of its members more transparent; iv) provided for an effective Risk Management system and the drafting of a written document on risk management policies.

Testifying to the relevance of the sector and its continuous evolution is the fact that in June 2022, the European Commission started work on the revision of Directive 2016/2341/EU (IORP II Directive), with a view to reviewing: (i) governance and prudential standards; (ii) cross-border activities and transfers; (iii) information to members and beneficiaries; (iv) transition from defined benefit to defined contribution; (v) sustainability in long-term investment decisions; and (vi) diversity and inclusiveness in relation to IORPs' management bodies.

[83] Directive 2016/2341/EU *of the European Parliament and of the Council of 14 December 2016 on the activities and supervision of institutions for occupational retirement provision (IORPs),* available at: https://eur-lex.europa.eu/legal-content/IT/TXT/PDF/

[84] Ibid.

[85] Implemented by Legislative Decree No. 147 of 13 December 2018, '*Implementation of Directive (EU) 2016/2341 of the European Parliament and of the Council of 14 December 2016*' published in the Official Gazette of 17 January 2019, No. 14

In order to enable the opinion to be issued by EIOPA[86] a working group was set up, in which COVIP experts also participated, which prepared a questionnaire to be addressed to the national authorities and a document containing proposed technical opinions .

The Commission submitted the above opinion (in March 2023) for public consultation with a consultation deadline of 25 May 2023.

Finally, in May 2022, the European Commission presented a proposal for a directive that aims to amend the regulation on the distance marketing of financial services to consumers, contained in Directive 2002/65/EC, which includes in the definition of financial services any service of a banking or insurance nature, including supplementary individual pension schemes[87] .

The aforementioned rules should be incorporated into Directive 2011/83/EU on consumer rights in a separate section devoted to contracts for financial services concluded at a distance.

The aim of the proposal - with a view to providing better consumer protection is to: i) modernise the provisions on the right to pre-contractual information by adapting them to the digital age; ii) better specify what information and how it should reach the consumer; iii) introduce measures to facilitate the exercise of the right of withdrawal; iv) lay down rules on explanations provided at a distance by means of online tools (robo-advice) and customer help (chat boxes).

[86] *The* European Insurance and Occupational Pensions Authority, see https://www.eiopa.europa.eu/.

[87] *Report for the year 2022 COVIP*, available at https://www.covip.it/la-covip-e-la-sua-attivita/pubblicazioni-statistiche/relazioni-annuali/relazione-annuale-2022, *see* p. 202

2.4 Developmental scenarios, public expenditure and the replacement rate of compulsory pension provision by supplementary pension provision

The complex process of legislative reforms that have affected the national pension system has mitigated, in the medium to long term - compared to other European States - the potential effects deriving from the demographic transaction on public expenditure; so much emerges, both at international level, from the scenarios or forecasts and forecasts. of the European Commission (20 21-Ageing Report), and [88] at national level, from that published by the General Accounting Office of the State (2023 - The medium-long term trends of the pension and social-health system).[89]

From both analyses, focused on the medium-long term impact of pension expenditure on GDP, it emerges, in fact, that "*the process of reform of the Italian pension system in recent decades has contributed and still contributes significantly to counteracting the current effects and those expected in the years to come of the demographic transition on public spending*". [90]

Analyzing specifically the various projections elaborated by the General State Accounting Office (RGS) and those of the *Working Group on Aeging Populations and Sustainability* (AWG) of the Economic Policy Committee (EPC - WGA) substantially coinciding trends emerge, which show[91]: a first phase (which culminates around 2020 in the RGS scenario and 2027 in the EPC-WGA scenario) of widening pension expenditure relative to GDP and a subsequent phase, in the final part of the time horizon (2060), of progressive decrease, according to the trend shown below in Figures 25 and 26.

[88] This scenario includes, in the forecast phase, the projections of the Eurostat population based on 2019;

[89] This scenario with reference to the population, incorporates the Istat data updated to 1 January 2023, as well as the new demographic forecasts based on 2021 published by Istat in August 2022

[90] cf. Pag. 84 et seq. in *The medium- to long-term trend of the pension system and social health, Report No 24 of 2023,* available at:https://www.rgs.mef.gov.it/VERSIONE-I/attivita_istituzionali/monitoraggio/spesa_pensionistica/.

[91] Defined at European level by the Policy Committee's Working Group on Ageing Economic of the Ecofin Council (Economic policy Committee – Working group on Aeging, EPC-WGA)

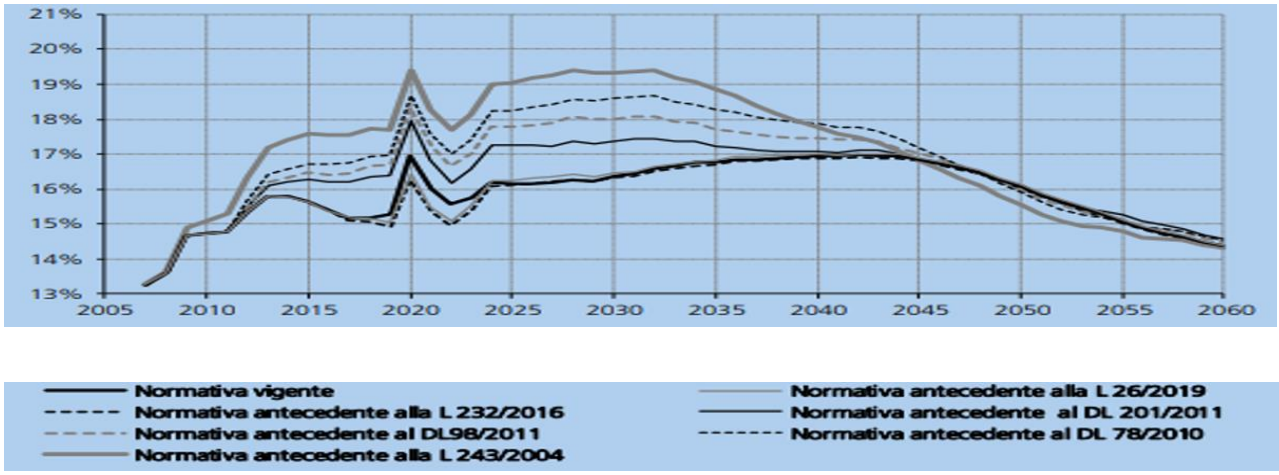


Figure 25 – Public expenditure on pensions as % of GDP National scenario under different regulatory assumptions
Source State Accounting Report n.24/2023

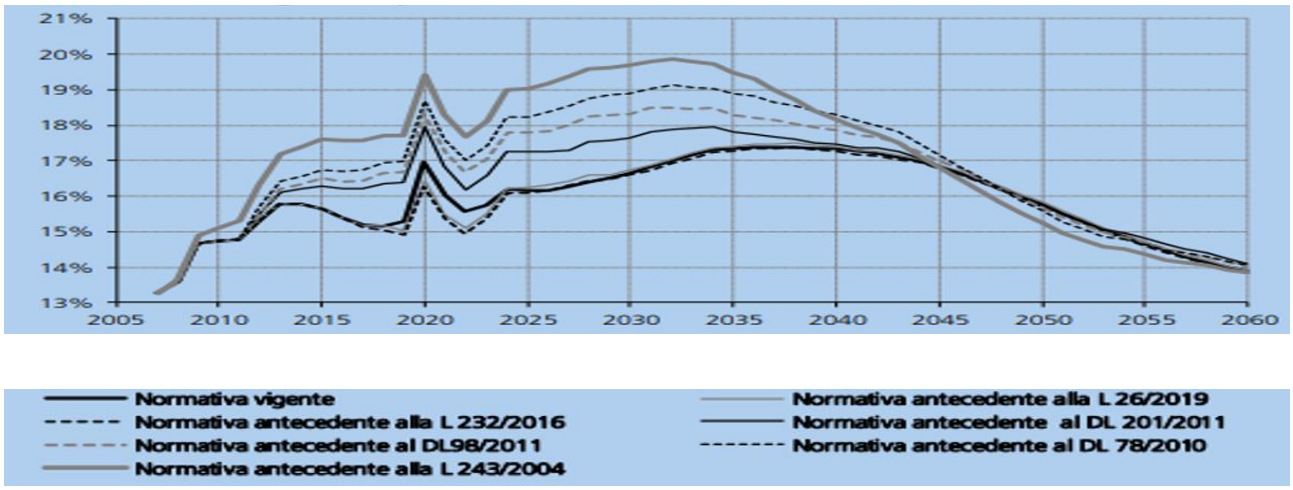


Figure 26 Government pension expenditure as % of GDP EPC-WGA baseline scenario under different regulatory assumptions
Source State Accounting Report n.24/2023

This progression - which is mainly affected by the effects of the demographic transition in progress, the pension reforms introduced in our legal system most recently with Legislative Decree 4/2019 and the 2019/2023 Budget Laws and the different productivity growth - is initially attributable to the increase in the ratio of pensions paid / employed and, subsequently, the reversal of this ratio, thanks to the disappearance of the *baby boom* generations and the adjustment of minimum retirement requirements to life expectancy.

The evidence provided by the General Accounting Office of the State also analyzes the adequacy / sustainability of the pension benefits of our system by analyzing the *replacement rate (*gross[92] and net[93]*)* of the compulsory pension system, also taking into account the additional contribution to the income of the elderly deriving from the supplementary pension.

In general, the study conducted by the Accounting Department shows how the gradual application of the contribution calculation system, the periodic revision of the transformation coefficients and the increase in the minimum requirement to access retirement can affect the temporal evolution of replacement rates.

It is possible to estimate, in fact, that an employee belonging to the private sector (without a dependent spouse) who in 2010 should have obtained a pension equal to 82.7% of the last salary, in 2060, with the same contribution requirements, will suffer a reduction of this percentage up to 67.3%.

A similar reduction (albeit to a more significant extent) will be suffered by a self-employed worker (without a dependent spouse) in response to the lower calculation rates provided for by the contributory system, for which it will go from 93% in 2010 to 68% in 2060, suffering a contraction of about 25%, as shown below in figure 27.

[92] It expresses the ratio between the annual amount of the first pension instalment and the annual amount of the last salary (or income from work) , therefore cannot be considered an indicator of performance adequacy

[93] Calculated by expressing both pension and salary net of tax

	2010	2020	2030	2040	2050	2060	2070
				Anzianità contributiva: 38 anni			
Ipotesi base[2]	82,7	81,5	76,4	68,1	67,6	67,3	67,2
(età)	*(65+4m)[2]*	*(67)*	*(67+4m)*	*(65+5m)*	*(66+3m)*	*(66+11m)*	*(67+7m)*
				Anzianità contributiva parametrata all'età			
Vecchiaia	77,3	79,2	75,2	74,7	75,5	76,3	77,3
(età/anz.)	*(65+4m/35+4m)[3]*	*(67/37)*	*(67+4m/37+4m)*	*(68+5m/38+5m)*	*(69+3m/39+3m)*	*(69+11m/39+11m)*	*(70+7m/40+7m)*
				Anzianità contributiva parametrata all'età - Assunti dall'1/1/1996			
Pensionamento anticipato[4]	-	-	64,2	64,3	65,2	65,7	66,7
(età/anz.)	-	-	*(64+4m/34+4m)*	*(65+5m/35+5m)*	*(66+3m/36+3m)*	*(66+11m/36+11m)*	*(67+7m/37+7m)*
				Canale anzianità contributiva - Età d'ingresso 19 anni			
Pensionamento anticipato - Femmine	86,2	82,1	74,6	71,1	71,0	71,4	72,1
(età/anz.)	*(60/41)*	*(61+1m/42+1m)*	*(61+5m/42+5m)*	*(62+6m/43+6m)*	*(63+4m/44+4m)*	*(64/45)*	*(64+8m/45+8m)*
Pensionamento anticipato - Maschi	86,2	91,2	77,8	74,3	74,1	74,5	75,2
(età/anz.)	*(60/41)*	*(62+1m/43+1m)*	*(62+5m/43+5m)*	*(63+6m/44+6m)*	*(64+4m/45+4m)*	*(65/46)*	*(65+8m/46+8m)*

Tab. 6.3.b: autonomi - Senza coniuge a carico

	2010	2020	2030	2040	2050	2060	2070
				Anzianità contributiva: 38 anni			
Ipotesi base[2]	93,0	77,2	68,0	65,9	67,9	68,0	68,0
(età)	*(65+7m)[2]*	*(67)*	*(67+4m)*	*(68+5m)*	*(69+3m)*	*(69+11m)*	*(70+7m)*
				Anzianità contributiva parametrata all'età			
Vecchiaia	87,7	74,4	66,5	65,9	69,4	70,6	71,5
(età/anz.)	*(65+7m/35+7m)[3]*	*(67/37)*	*(67+4m/37+4m)*	*(68+5m/38+5m)*	*(69+3m/39+3m)*	*(69+11m/39+11m)*	*(70+7m/40+7m)*
				Anzianità contributiva parametrata all'età - Assunti dall'1/1/1996			
Pensionamento anticipato[5]	-	-	55,8	58,1	60,6	61,3	62,2
(età/anz.)	-	-	*(64+4m/34+4m)*	*(65+5m/35+5m)*	*(66+3m/36+3m)*	*(66+11m/36+11m)*	*(67+7m/37+7m)*
				Canale anzianità contributiva - Età d'ingresso 19 anni			
Pensionamento anticipato - Femmine	97,0	82,1	69,6	62,7	64,6	66,3	66,9
(età/anz.)	*(60+6m/41+6m)*	*(61+1m/42+1m)*	*(61+5m/42+5m)*	*(62+6m/43+6m)*	*(63+4m/44+4m)*	*(64/45)*	*(64+8m/45+8m)*
Pensionamento anticipato - Maschi	97,0	104,1	72,9	65,3	67,0	68,9	69,7
(età/anz.)	*(60+6m/41+6m)*	*(62+1m/43+1m)*	*(62+5m/43+5m)*	*(63+6m/44+6m)*	*(64+4m/45+4m)*	*(65/46)*	*(65+8m/46+8m)*

(1) La dinamica della retribuzione/reddito individuale è stata ipotizzata pari al tasso di variazione nominale della retribuzione lorda per unità di lavoro dipendente, per il periodo storico, e pari al tasso medio di variazione della produttività per occupato, per il periodo 2024-2070. Per il 2023, i valori del tasso di inflazione, del PIL e della retribuzione lorda per unità di lavoro dipendente, utilizzata come retribuzione di riferimento, sono desunti dal quadro macroeconomico elaborato per il DEF 2023.

(2) Con riferimento al D.L. 4/2019, per il periodo 2019-2021, è prevista la possibilità di andare in pensionamento con un requisito di età pari ad almeno 62 anni ed un requisito di anzianità non inferiore a 38 anni. Sulla base di questi requisiti il tasso di sostituzione netto che si ottiene è pari al 72,9% , nel caso di un lavoratore dipendente e al 73,4%, nel caso di un lavoratore autonomo.

(3) Per le donne è possibile andare in pensione 5 anni prima.

(4) E' consentito solo ai lavoratori assunti dall'1/1/1996 (regime contributivo) ed è vincolato ad un importo di pensione non inferiore a circa 1.200 euro mensili nel 2012 (2,8 volte l'assegno sociale nello stesso anno) indicizzato con la media quinquennale del PIL.

(5) E' consentito solo ai lavoratori assunti dall'1/1/1996 (regime contributivo). Dato il più basso livello di aliquota contributiva rispetto al lavoro dipendente, l'accesso al pensionamento anticipato richiede redditi da lavoro significativamente superiori alla retribuzione media per unità di lavoro dipendente, al fine di soddisfare il requisito pensionistico minimo. Considerando, inoltre, che il reddito medio imponibile di un lavoratore autonomo risulta notevolmente inferiore alla retribuzione lorda per unità di lavoro dipendente, ne consegue che l'accesso al pensionamento anticipato con un requisito di età fino a 3 anni inferiore a quello di vecchiaia rappresenta, per tale categoria di lavoratori, un' eventualità poco probabile. Tuttavia, ai fini del calcolo del tasso di sostituzione netto, si è ipotizzato, in deroga al criterio generale, un livello di reddito da lavoro sufficiente a garantire il superamento della soglia di importo richiesta.

Figure 27 Net replacement rates of mandatory pension provision under the base assumption and with minimum requirements. National baseline scenario (values in %)

Source State Accounting Report n.24/2023

It is therefore clear that the containment of pension income, provided by the mandatory social security system (both for employees and self-employed) determines the inevitable recourse to its compensation offered by the supplementary pension able to guarantee a decent and adequate standard of living during the retirement phase.

The projections developed by the RGS show how the introduction of supplementary pension provision changes the future trend of replacement rates.

In 2070, the gross replacement rate *rose from 58.6% to 66.2% (for private employees) and from 47.3% to 55.8% (for the self-employed), an increase of 7.6% and 8.5% respectively. Comparing the values of 2010 and 2070, there is a decrease of 7.4% for private employees and 16.4% for the self-employed. With compulsory social security alone, the reductions would have been 15% and 24.8% respectively". A similar effect is had on net replacement rates. In 2070, private employees*

reached a value of 77.7% compared to 67.2% for compulsory pension provision alone. For self-employed work the corresponding values are 85.6% and 68%"[94] (cf. Figure 28 *).*

	2010	2020[2]	2030	2040	2050	2060	2070
Previdenza obbligatoria (Hp. base)							
				Tassi di sostituzione lordi			
Dipendenti privati	73,6	71,7	68,2	59,4	59,0	58,6	58,6
Autonomi	72,1	54,9	47,3	45,5	47,1	47,3	47,3
				Tassi di sostituzione netti			
Dipendenti privati - Senza coniuge a carico	82,7	81,5	76,4	68,1	67,6	67,3	67,2
Autonomi - Senza coniuge a carico	93,0	77,2	68,0	65,9	67,9	68,0	68,0
Previdenza obbligatoria e complementare[3] (Hp. base)							
				Tassi di sostituzione lordi			
Dipendenti privati	73,6	77,1	75,8	68,5	67,7	66,1	66,2
Autonomi	72,1	60,2	54,9	55,6	56,8	55,5	55,8
				Tassi di sostituzione netti[4]			
Dipendenti privati - Senza coniuge a carico	82,7	88,4	86,5	80,5	79,7	77,5	77,7
Autonomi - Senza coniuge a carico	100,8	89,1	83,7	86,2	87,6	85,2	85,6

(1) La dinamica della retribuzione/reddito individuale è stata ipotizzata pari al tasso di variazione nominale della retribuzione lorda per unità di lavoro dipendente, per il periodo storico, e pari al tasso medio di variazione della produttività per occupato, per il periodo 2024-2070. Per il 2023, i valori del tasso di inflazione, del PIL e della retribuzione lorda per unità di lavoro dipendente, utilizzata come retribuzione di riferimento, sono desunti dal quadro macroeconomico elaborato per il DEF 2023. La normativa fiscale di riferimento è quella vigente.

(2) Con riferimento al D.L. 4/2019, per il periodo 2019-2021, è prevista la possibilità di andare in pensionamento con un requisito di età pari ad almeno 62 anni ed un requisito di anzianità non inferiore a 38 anni. Sulla base di questi requisiti il tasso di sostituzione lordo e netto della previdenza obbligatorio che si ottiene è pari, rispettivamente, a 66,0% e a 75,8%, nel caso di un lavoratore dipendente e a 51,4% e a 73,2%, nel caso di un lavoratore autonomo. Considerando anche la previdenza complementare, il tasso di sostituzione lordo e netto che si ottiene è pari, rispettivamente, a 71,1% e a 82,3%, nel caso di un lavoratore dipendente e a 56,2% e a 84%, nel caso di un lavoratore autonomo.

(3) In riferimento alla Legge 124/2017, l'aliquota contributiva della previdenza complementare è stata posta pari al 50% dell'aliquota di accantonamento del TFR. Il tasso di rendimento reale dei fondi pensione è pari al 3%, al lordo delle spese amministrative e dell'imposizione fiscale. Le spese amministrative sono assunte pari a 0,5 punti percentuali del tasso di rendimento. L'aliquota fiscale è pari al 20% del tasso di rendimento nominale al netto delle spese amministrative.

(4) Il passaggio al tasso di sostituzione netto tiene conto della deducibilità prevista per la contribuzione alla previdenza complementare. Per i lavoratori autonomi, la contribuzione alla previdenza complementare risulta interamente deducibile dal reddito imponibile. Per i lavoratori dipendenti, invece, la contribuzione si riferisce all'accantonamento della quota di TFR, non incluso nella retribuzione lorda.

Figure 28 Net replacement rates of compulsory and supplementary pension provision gross and net of contributory tax effect. National baseline scenario (values in %)

Source State Accounting Report n.24/2023

The above makes clear the fact that the replacement rate actually achieved by each individual worker will depend more and more on personal choices regarding the construction of his own pension portfolio, represented largely by the public pension, inevitably accompanied by the complementary or supplementary one.

[94] See p. 94 *The medium-long term trend of the pension and social health system, report no. 24 of 2023,* available at the address : https://www.rgs.mef.gov.it/VERSIONE-I/attivita_istituzionali/monitoraggio/spesa_pensionistica/

Conclusion

The ageing of the population - combined with the progressive halving of the fertility rate - now represents a long-term trend that has strongly affected the 'structure' of modern industrialised societies, creating a social imbalance between the number of elderly people (growing) and the reduction of those of working age.

This has made not only evident, but also urgent, a unified and cohesive response by all states, especially at the European level, aimed at ensuring the 'financial sustainability' of the various social security instruments and the 'adequacy of pensions' for individual contributors called upon to face, in the first person, the challenges posed by the current economic-demographic crisis.

The development of alternative forms of social security to the public pillar, such as pension funds, is at the attention of policy makers.

The recent revision of the IORP II Directive - in terms of governance and prudent management of pension resources - together with the issuance of Regulation (EU) 2019/1238 with which it was introduced - also in Italy through the transposition decree Legislative Decree no. 114 of 3 August 2022 - a new form of pension provision equal for all European states that is the same for all European countries. 114 of 3 August 2022 - a new form of social security that is the same for all European states, alongside the one already provided for by each system: the 'Pan-European Personal Pension Products' (so-called Pepp), represent just a few examples of the attention that the legislator - also supranational - has shown towards the system.

Further action has been strongly encouraged at European level by the think-tank Bruegel to close the gap in access to pensions for the self-employed. Indeed, the analysis shows that, few Member States have implemented appropriate measures to ensure greater social security protection.

Improving access to pension schemes also for this category of workers - who very often work longer and receive a smaller pension than the average employee - by eliminating inequality between market segments should in fact be a primary objective of the European legislator, in line with the recommendations of the European Council.

This emerges from the report 'Better pensions for the European Union's self-employed' published in March 2022.

Thus, the national level, the sector's regulatory authority (COVIP), in the opening speech of its President, on the occasion of the presentation of the Report for the year 2022, while highlighting the 'overall resilience of the complementary pension system' - in which the number of members/contributors has grown and returns (assessed in the medium-long term) have remained positive on average, and substantially in line with the revaluation rates of the TFR - highlights the need to address and resolve certain structural problems of the system.

Indeed, a strong 'dualism' persists, especially in Italy, which in fact prejudices 'less strong figures' (women and young people, workers in the South of the country), with pension funds counting among their members mainly 'men, of mature age, resident in the North of the country, in reasonably solid companies and able to provide continuity of funding flows'.

Moreover, the high level of contributions to the first pension pillar in our country (measured in terms of compulsory contribution rates for social security purposes applied on employee pay), still 'plays a greater role and dimension' than in European countries, thus limiting the expansion of the system.

In the long-term consideration, these elements are compounded by the need to mitigate the impacts of profound demographic changes. Our country is characterised - as mentioned - by one of the fastest ageing processes in the world, destined to significantly affect both growth prospects in terms of overall output and pension systems.

It is precisely the youngest who risk being penalised the most by the pension system, finding themselves forced on the one hand to bear the full burden - given the high old-age dependency ratio - and on the other being the category of workers who find it hardest to participate in pension funds.

"In the face of these structural trends, which are not favourable to the prospects for the development of supplementary pensions,' the report therefore highlighted the need for 'interventions that the policymaker can take into consideration'.

In this regard, 'regulatory stability' was reiterated as a primary need for the system's development, given the particular nature of the social security system which, as is known, 'looks to typically long horizons' and presents 'characters of partial irreversibility', highlighting, on the contrary, how 'regulatory volatility' risks 'discouraging accessions, lowering contributions and more generally reducing the degree of trust in the system as a whole'.

They then presented a series of possible interventions - also of a political nature - capable of further improving the resilience/sustainability of the system as a whole by guaranteeing the next evolution of the complementary social security system.

In the first place, the modification of tax incentives has been proposed with a view to guaranteeing the inclusion of 'weaker groups of workers and to achieve greater intergenerational equity'; in fact, a re-modulation of the current incentives has been hypothesised according to the income of individual members, foreseeing a supplementary intervention by the State 'to support the pension positions of certain categories, in particular the youngest'.

And again - given the diffusion of discontinuous career paths - the possibility of introducing a multi-year (and no longer annual) contribution deductibility limit was taken into consideration to avoid penalising those groups of workers who are not able to continuously allocate their contributions to the pension fund.

Moreover, reflecting the recent evolution of the system and in line with OECD recommendations, it was suggested that the 'default line for silent members be revised, basing it on the life-cycle approach' so as to exploit 'the long time horizon of pension investment through an initial higher exposure to equities, characterised by greater volatility but also by higher expected returns, and a progressive reduction of this exposure as retirement approaches'.

In order to implement, then, not only knowledge but also 'conscious investment choices' especially by the younger generations, information and pension education campaigns should be carried out.

Ultimately, the importance was stressed, within an evolutionary perspective of the complementary system, of putting in place useful initiatives to favour 'pension benefits that at least in part contribute differently to the mere disbursement of accumulated capital and to the mitigation of longevity risk', for example by means of scheduled fixed-digit disbursements, or deferred annuities starting only at a very advanced age.

From what has been pointed out it therefore seems fundamental to continue not to turn our attention away from pension funds, which play a fundamental role in the financial markets, stabilising, as much as possible, their turbulence by paying particular attention to the choices made in times of generalised financial crises because, as the American philosopher and poet Henry David Thoreau wrote, 'solidarity is the only investment that never fails'.

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