



The Impact of Demographic Evolutions on the Pension System in Romania

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Abstract

The present research aims to conduct an in-depth analysis of the degradation of Romania's demographic situation, with a particular focus on the implications of the aging trend. The study aims to investigate how this demographic shift may lead, in the absence of reformation measures, to elevated levels of poverty, social exclusion, and dependency among the elderly population. The contributing factors to this phenomenon include migration patterns, negative natural population growth, and the increasing life expectancy of the population. These factors collectively result in a growing imbalance between the elderly and working-age populations. The repercussions of this demographic shift include heightened pension costs, increased public debt, exacerbated social inequalities, and a potential hinderance to economic growth.

Keywords: *demographic changes, pension system, pension adequacy, sustainability*

JEL Classification: H55, J11.

Introduction

Most countries now face the social, economic and financial effects of an aging population. Since 2020, the COVID-19 pandemic has exacerbated many of these issues. However, it is not only population aging and the effects of the coronavirus that pose challenges to pension systems around the world. The current economic environment - with low wage growth, rising inflation and low investment returns in many asset classes - has created additional financial pressures on pension systems. The pension system in Romania has been subject to numerous revisions and numerous reforms which have been attempted. However, the sustainability of the pension system and the insufficient income from pensions remain the fundamental problems of the pension system in Romania. Therefore, it is reasonable to examine the causes and possible solutions that could mitigate the devastating effects of unfavourable demographic trends, limited budgetary resources, and the lack of recognition of the need for independent savings for elderly people.

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Demographic aging is an essential factor to influence the financial sustainability of the national insurance and social assistance system, having long-term effects. In addition to the “classic” demographic aging (low birth rate, increase in average life expectancy), Romania is also faced with mobility for work and migration, which accentuates the aging of the labour force and decreases participation in insurance systems (due to the reduced portability of pensions).

The concept of demographic aging, or aging of the population, refers to the change in the structure by age groups, implying an increase in the share of the elderly population over 65, taken as a share in the total population, while the young ages, respectively children and adolescents, is decreasing. The aging of the population is a universal phenomenon, with a large and long-lasting extent, intensifying over time (Stanciu, 2020). In this context, it is necessary to promote policies to support an active, healthy and independent life for the population over 65 years old (Eberstadt, 1997).

Population aging is one of the most important and often discussed demographic phenomena (Gavrilov & Heuveline, 2003). Almost all economically developed countries are currently facing the consequences of demographic aging. The main reason for the aging of the population is not only the permanent increase in life expectancy, but also the decrease in fertility and the amplification of the migration phenomenon. All these aspects generate a serious threat to the financial sustainability of pension systems. As life expectancy has increased, the question of increasing the retirement age is raised more and more often. Currently, most states have a fixed retirement age (usually 65).

However, many studies suggest re-examining the fixed retirement age threshold. Ryder proposed that the retirement age should be set at a value where the remaining life expectancy is 10 years (Ryder, 1975). The idea of a flexible threshold for old age, depending on remaining life expectancy, was also suggested by Fuchs about ten years later (Fuchs, 1984). Other authors have proposed the idea of a retirement threshold as the age at which the remaining life expectancy is equal to 15 years (Siegel, 1993).

We also find the proposal to determine the retirement age so that the period in which people receive a pension represents a quarter of their total lifetime, which would stabilize the average pension time and significantly reduce the burden financial system of the pension system (Fiala & Langhamrová, 2021).

An attempt is being made to shift attention to new indicators of old age, instead of the traditional ones of retrospective determination of biological age, of the number of years lived, with prospective indicators of determining the number of expected years (remaining life expectancy) being preferred. This approach provides a better informative basis in the discussion of population aging (Sanderson & Scherbov, 2005 and 2013).

In the dynamics of population aging, a series of indicators must be taken into account, such as: a) the dependency ratio of elderly people, translated by the number of people at retirement age, compared to the number of active people aged 15-64; b) the aging index, or the ratio between the elderly people and children, translated by the number of people aged 65 and over, compared to 100 young individuals under the age of 15; c) migration; d) low birth rate; e) low mortality; f) increased life expectancy (Stănescu, 2018).

1. The evolution of the main demographic indicators

The deterioration of the demographic situation generates additional pressures on public spending and restricts, in the long term, economic growth. Although Romania is a

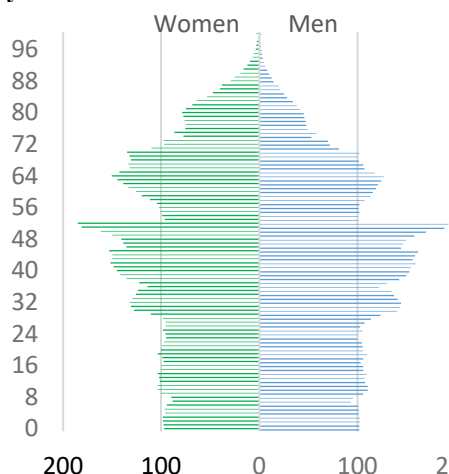
large country in terms of the number of inhabitants (7th place in the EU), the increased level of migration and the negative natural increase generate a decrease in population. At the same time, however, life expectancy increases and, consequently, the share of the elderly population increases, so that the ratio between the elderly and the active population is increasing. All these aspects translate into an increase in pension costs and public debt, a deepening of social inequalities and a slowdown in economic growth.

The increase in estimated pension expenses determined the reclassification of Romania, according to the Public Debt Sustainability Monitoring Report, as a high-risk member state over all time horizons analysed. This classification is also determined by the increase in expenses with the aging of the population; in Romania, there is a sharp change in the age pyramid.

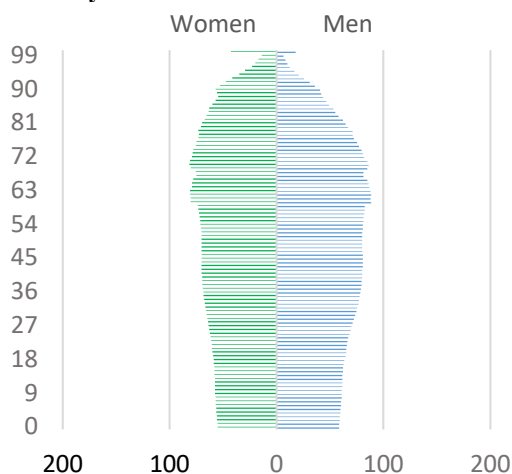
Figure 1.

Structure of Romania's population in year 2020-2090

Structure of Romania's population in year 2020



Structure of Romania's population in year 2090



(Source: Europop 2023)

Demographic changes will change the structure of Romania's population. The magnitude and speed of population aging depends on future trends in life expectancy, fertility and migration. In addition, future projections will be influenced by changes caused by the Covid-19 pandemic. The aging process will change the ratio of the population at retirement age to the working population, leading to changes in the age structure and implications for the labour market.

The ratio of people aged over 65 to those of working age (15 to 64 years) will increase, which means that in the coming years the public pension system will have less resources in relation to expenses. The results of the demographic forecast provided by Eurostat for Romania indicate a significant decrease in the population, with 4.43 million people less in 2100 compared to 2022. On the other hand, life expectancy at birth for men is estimated to increase by approximately 17 years over the entire projection period, from 70/9 in 2022 to 88/4 years in 2100. Life expectancy at birth is projected to increase by 14 years for women, from 78/6 years in 2022 to 92/ 5 years in 2100, indicating a slight convergence

of life expectancy between men and women. In the medium and long term, the evolution of the pension sector will be strongly influenced by the demographic perspectives given by the evolution of the birth rate and life expectancy and the inevitable process of population aging.

Table 1.

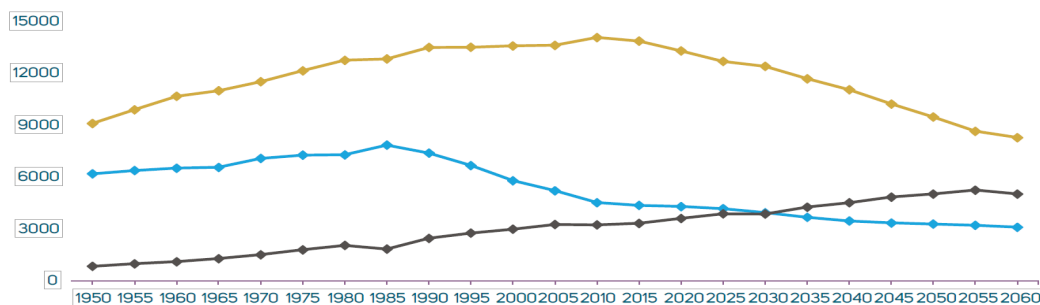
Demographic indicators

	2022	2023	2030	2050	2070	2090	2100
Fertility rate	1,81	1,80	1,80	1,78	1,77	1,77	1,77
Total population (million), of which:	19,04	19,03	18,22	16,44	15,04	14,57	14,61
Men	9,24	9,23	8,86	8,11	7,54	7,38	7,40
Women	9,80	9,80	9,36	8,33	7,50	7,20	7,21
Life expectancy at birth							
Men	70,9	71,4	73,7	79,0	83,3	86,9	88,4
Women	78,6	79,0	80,9	85	88,5	91,3	92,5
Life expectancy at age 65							
Men	14,2	14,6	16,0	19,2	22,0	24,4	25,4
Women	18,1	18,4	19,7	22,7	25,4	27,7	28,7

(Source: Europop 2023, our own calculations)

It is predicted that in 2030 the number of people over 65 will exceed that of people under 20.

Figure 2.

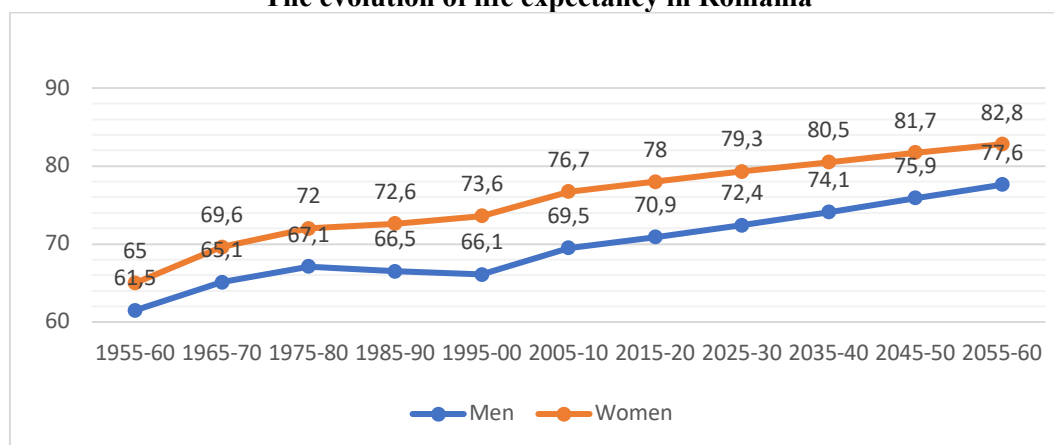
Number of people in different age segments, from 1950 to 2060 (thousands)

(Source: UN Population Statistics. Demographic projections of the European Union for the period 2014-2050)

In the last 60 years, the average life expectancy has increased significantly by about 14 years for women and 10 years for men.

In Romania, there is an accelerated decrease in the working-age population, compared to other EU member states, and this trend exerts a strong pressure on the economy. It is estimated that, by 2050, the number of people aged over 65 will increase greatly, representing 30% of the total population, while the working-age population (20-64 years) will decrease by over 10%.

Figure 3.

The evolution of life expectancy in Romania

(Source: UN population projections)

As such, the elderly people dependency ratio (the ratio of people aged 65+ to people of working age) will double over the next 30 years, reaching 55% in 2050 (the dependency ratio was 22% in 2014 and 33% in 2020).

Table 2.

Trends in the demographic dependency ratio and the share of people aged over 65 in the total population

	2015	2020	2025	2030	2050
Demographic Dependency Ratio	0,61	0,66	0,71	0,72	0,94
Share of people aged over 65 and the total population (%)	17	19	21	21	28

(Source: EU population projections for the period 2014-2050)

2. The influence of demographic factors on the public pension system

Reducing the active segment of the population has the immediate effect of limiting economic growth prospects and decreasing per capita income. Effective solutions will need to be found to meet the needs of a large elderly population. This demographic aging trend can lead, in the absence of reform, to high rates of poverty, social exclusion and elderly people dependency.

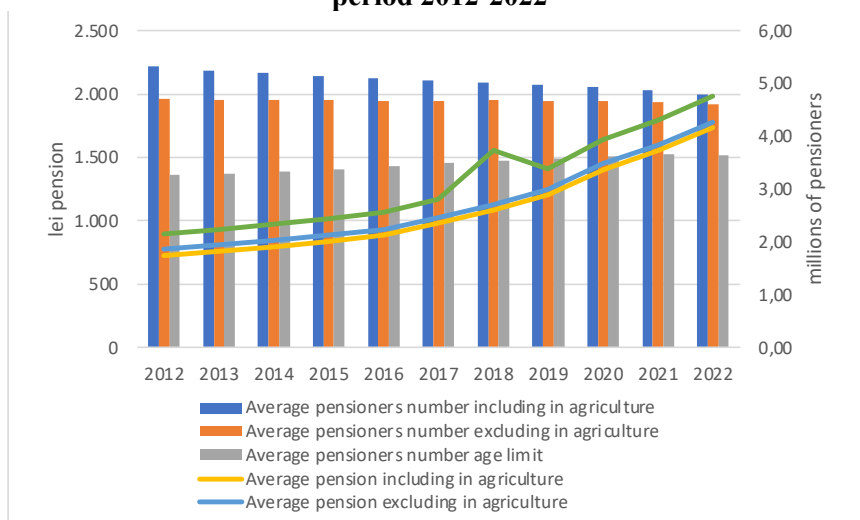
The public pension system in Romania is redistributive, based mainly on social solidarity and redistribution between generations. As a result, the characteristics of the employed population will be reflected in the public pension system, because the employed population ensures, through the social contributions paid to the social insurance budget, the income necessary to pay the pensions. Also, the level of income achieved by the active population has a major impact on the public pension system, because social security contributions are determined in relation to the level of income, i.e. the contributory capacity. The indicator of the length of active life determines the contributory period within the

pension system, and this, together with age, represents the eligibility criterion for access to benefits from the public pension system. Life expectancy is a very important indicator for characterizing the pension system, for approximating the period of professional activity carried out by a person, because this is also the contribution period in which the funds necessary to grant benefits are secured. Also, life expectancy allows estimating the average period for which benefits must be granted.

In the last 10 years, the number of people who benefit from an income in the form of a pension (for age limit, early pension, partial early pension, disability pension, survivor's pension, social aid, for periods worked in agriculture) has decreased from 5.3 million beneficiaries in 2012 to 4.8 million beneficiaries in 2022. This reduction can be explained by the reduction in the number of beneficiaries from the former farmers' pension system, but also by the decrease in the number of those who benefit from survivor's pension, early and partial early retirement, as well as disability benefits.

Figure 4.

The evolution of the average pension and the average number of pensioners in the period 2012-2022



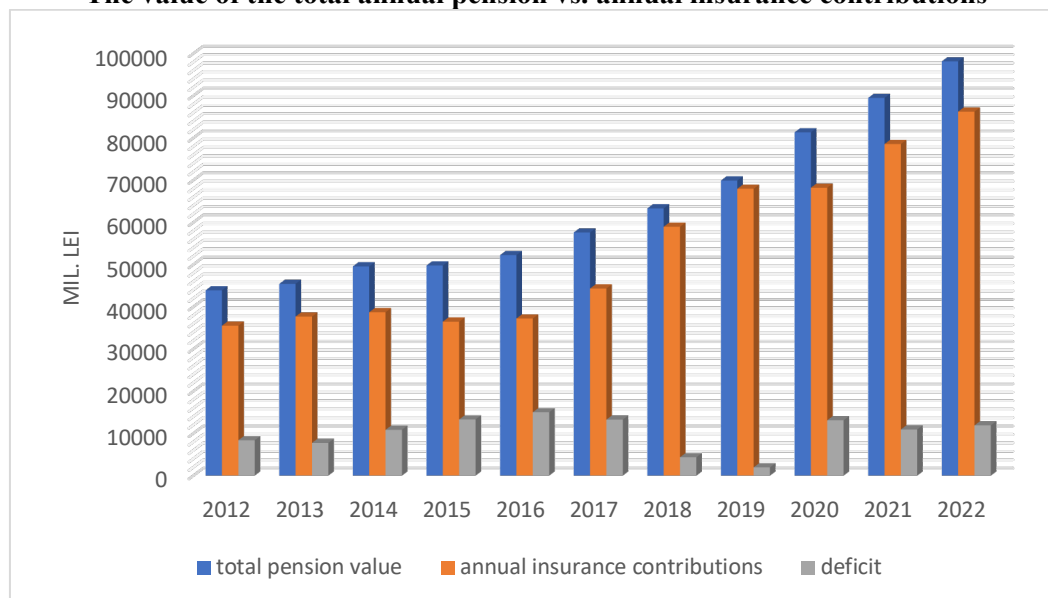
(Source: CNPP Pillar I statistical indicators - processed data)

Some of these declines in various categories of pension benefits were offset by the increase in the number of old-age pensioners due to demographic developments and the maintenance of the retirement age limit. The number of these beneficiaries increased during the analysed period from 3.26 million people in 2012 to 3.64 million people in 2022.

These changes in the structure of the number of people who benefit from a certain form of pension, together with the increase in the value of the pension point, led to a doubling of the total value of annual pensions from 44 billion lei in 2012 to 98 billion lei in 2022, respectively the average pension from 778 lei/month in 2012 to 1775 lei/month in 2022.

And returns from insurance contributions have had a significant increase in the last 10 years, from 36 million lei in 2012 to 86 million lei in 2022, especially as a result of the increase in the average gross salary. However, although both insurance contributions for pensions and the value of annual pensions have doubled, a significant deficit has remained between the two indicators.

Figure 5.

The value of the total annual pension vs. annual insurance contributions

(Source: CNPP (Pillar I statistical indicators), Ministry of Finance (Budget execution information) - processed data)

As a result of demographic developments and permanent increases in pensions, the public pension system registers a significant deficit. For the year 2022, the deficit of the pension budget is about 12 billion lei. Practically, the revenues related to the social insurance budget, coming from social insurance contributions, cover less than two thirds of public pension expenses, the rest being financed from the general budget which, in turn, operates with a deficit covered by borrowed sources.

Even in the conditions where the total pension expenses have induced a major pressure on the national budget, the pension expenditure per beneficiary is among the lowest in the European Union. The monthly average in Romania in September 2023 was 2,008 lei, less than half of the average net salary in the economy. In the case of Romanian pensioners, the public pension is the main income after retirement, but, unfortunately, it does not ensure an adequate level of income, neither now nor in the next period.

At an average gross salary for the economy at the beginning of 2022 of 6,095 lei which generates a contribution to the insurance budget of 1,295 lei monthly (6,095 lei x 21.25%), Romania would still need 6,257,331 people to earn the average gross salary to have a balanced social insurance budget, without a deficit (Nica et al., 2022). The reality is that Romania's active population is decreasing, and these millions of people who could contribute to the social security budget to balance it and allow the income level to rise in the form of pensions do not appear in the demographic projections. On the contrary, according to the projections, if in 2020 Romania has a population aged between 24 and 64 of 10.5 million people, in 2050 this population could decrease to 7.8 million people.

Following demographic developments, the dependency ratio will change from 47, in 2011, to 63, in 2060, elderly people per 100 adults. On the other hand, migration

influences growth negatively, Romania being the country that registers the second largest migration (after Syria). In the period 2025-2035, the number of pensioners will increase as a result of the so-called “decrees generation”. As such, the population will not only diminish, but also age, which will have adverse consequences for economic development and generate additional pressure on the public pension system. It will become unsustainable in the absence of changes to the retirement age and/or an increase in taxation. A reform of the public pension system is required, because there is a significant risk that it cannot be sustained in its current form, i.e. under the current conditions regarding the retirement age, social security contributions, indexation of the pension point. The removal of these shortcomings of the public pension system can best be done through a combination of the three parameters specified previously, namely:

- raising the retirement age,
- slow growth or maintaining the pension point,
- increasing taxation for the active population (increasing social security contributions).

All these measures are already implemented or are being implemented in many states. For example, between 1995 and 2017, 76 countries increased public pension contributions, 60 countries decreased pensioner benefits, and 55 countries increased the retirement age.

We appreciate that the public pension is and will be very small in relation to financial needs and, as such, to ensure financial independence at retirement age, the most rational behaviour would be personal saving and investment, so that future retirees depend as little as possible on the public pension system. And here comes the discussion of the opportunities offered by the private pension system.

European states face a double challenge, which is determined by the need to maintain both the adequacy of pensions and the fiscal sustainability of pension budgets. As a rule, the adequacy of pensions is assessed with the income replacement rate, i.e. the ratio between the benefits paid in the form of public pensions and the income earned before retirement. An income replacement rate of 70% is considered sufficient to maintain a standard of living similar to that enjoyed before retirement. The difficulty of public pension systems in ensuring an adequate income replacement rate has been determined in recent decades by the continuous aging of the population. Moreover, pension budgets have been affected by the financial crisis, the prolonged economic recession that followed, the covid pandemic, the war in Ukraine and, as such, pension systems need to be reformed in the sense of raising the retirement age, i.e. increasing contribution period, restricting access to early retirement and ensuring a fair correlation between contributions paid and post-retirement benefits. But, demographic pressure continues to grow, further eroding the ability of pay-as-you-go pension systems to provide adequate income replacement rates and sustainable pension budgets.

The adequacy of pensions in Romania has been on a downward trend in recent years, compared to an improvement in the level of well-being indicators among the working-age population. The levels of poverty and material deprivation of the elderly (65+) increased compared to 2015 and remain high compared to EU averages, despite the adoption of successive measures aimed at increasing pensions in recent years. However, labour income replacement is at a satisfactory level compared to the EU average. Working life expectancy is currently lower than the EU average and with large gender disparities. Equalizing the retirement age for men and women, together with encouraging employment and extending

work beyond retirement age, would increase the prospect of longer working lives.

Conclusions

Demographic changes draw attention to the public pension system, to the problem of attracting the resources necessary to pay benefits to an increasing number of beneficiaries. For this purpose, active aging must be encouraged, which means: a long and healthy life, increasing the degree of employment, improving medical care services, reducing the degree of dependency of the elderly, contributing to optional pensions, taking out life insurance, saving financial resources during life (Beju, 2007). The acceleration of the aging of the population implies the rethinking of socio-economic policies with the restriction of access to early retirement, the increase of the retirement age and the granting of incentives for prolonging economic activity.

In the context of repeated economic crises and the aging of the population, the capacity of the public sector to provide a minimum level of pension based on a redistributive system is significantly eroded. Hence, the need for the public scheme to be supplemented by privately administered schemes, pre-financed through mandatory or optional contributions, which contribute to the financial security of the beneficiaries, but also bring benefits to the economy as a whole:

- reduces poverty through the additional incomes ensured in old age, but also in case of disability or death of the primary beneficiaries;
- improve the stability and efficiency of the mandatory pension system and develop efficient optional systems, which allows the efficiency of the pension system in general;
- stimulates long-term saving.

The existence of the private pension system ensures the equalization of consumption over time, stimulating people to save more during their active life and to use the savings thus constituted in old age, thus contributing to the reduction of macroeconomic shocks and to the stability of the economy.

The rate of income replacement by the public pension is decreasing, as is the long-term financial sustainability of the pay-as-you-go system, which is why all states consider private pensions as a complementary alternative (Bernhard & Mareike 2011).

In order to avoid a possible collapse, the current pension system must be rethought, based on an impact study regarding the new measures and rebuilt taking into account the current structure of the population. A solution comes from the development of the segment of optional private pensions to ensure financial comfort at retirement age. At the same time, it is necessary to support healthy, active and independent aging.

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