PROJECTIONS ON THE SUSTAINABILITY OF THE PENSION SYSTEM IN ROMANIA

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Abstract

The social pension system is a matter of particular complexity for any country and national authorities. National and international statistical and forecasting institutions, as well as research institutions, assume the complexity of the pension system as a major scientific and professional challenge for identifying social protection phenomena and designing a sustainable pension system.

In this context, the Institute of Financial Studies (ISF) in Bucharest takes over this rebellion of concerns, proposing a series of studies on the sustainability of the Romanian pension system. Fortunately, our intention is to support previous studies conducted by demographics and social protection teams, as well as projections freely provided by relevant bodies (Eurostat, US Census Bureau, INS, CNSP, CNPP, EFOR, etc.).

In this first ISF study we summarize, in the first part, the specialized literature, especially Romanian, with approaches to the specificities of pensions in Romania compared to the European countries, in the second part, the demographic evolution and tendencies in Romania, in the third part and fourth, the projections on the number of pensioners versus the number of taxpayers and, respectively, the projection of the financial balance of the pension system in Romania. Our study assumes, with appreciation, the updating of the many previous projections of the established institutions and the attempt to explain contextually demographic and social protection phenomena[2].

Introduction

For all countries, social protection is a national security issue that affects demographic policies, intergenerational relations, general government balance, public debt and, in general, macroeconomic balance. Population aging as a result of improving living conditions, falling employment, financial market volatility pose serious problems to the financial equilibrium of the pension system, wage replacement rates with pensions and identifies risks of unsustainability of the pension system.

The Europe 2020 strategy recommends reducing public debt, increasing employment and reforming social security systems. For the latter, it is advisable to increase the retirement age by increasing life expectancy, prolonging working life after retirement age, reducing differences in retirement between men and women, and limiting early retirement and special conditions. As an alternative to the public pension, it is encouraged to supplement it with private savings (Pillar II, III and IV).

Given the diversity of national pension systems, specific economic and social conditions, pension policy is the responsibility of each state both in terms of regulation and the sustainability of the pension system. At EU level, there is a concern to ensure a common set of social protection indicators and to develop the Europe 2020 strategy with recommendations to avoid the imbalance risks in the labor market, the pension system and wage replacement rates through pensions.

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1. Brief overview of studies on the structure and sustainability of the pension system

Foreign and Romanian literature is particularly comprehensive in terms of the architecture of modern pension systems, social benefits performance and financial sustainability. We propose to present only a few relevant studies of this vast scientific concern about the optimal pension system.

Since the late 1970s, EUROSTAT has developed the "European System of Integrated Social Protection Statistics (ESSPROS)" as a specific tool for statistical observation of social protection in the Member States of the European Union, namely definitions and classifications of information on beneficiaries pensions, as well as collecting data on the benefits of social protection. ESSPROS provides a comprehensive and consistent description of social protection in Member States on pension beneficiaries and other types of social protection, social benefits and funding, international comparability and harmonization with other statistics, in particular national accounts. Social benefits are transfers to households, in cash or in kind, for disability, sickness / medical care, old age, survivors, family / children, unemployment, housing and social exclusion. The 2016 edition of the Handbook and User Guide introduces additional statistical information on earnings and expenditure of social protection systems, pension beneficiaries and net social benefits in the EU.

Mercer and the CFA Institute have brought to public attention an interesting study on the "IDEAL PENSION SYSTEM", which presents 10 principles to establish best practices for the optimal structuring of pension systems (Mercer & CFA Institute, 2018):

1. Clear governmental targets for each pension pillar, minimum income, poverty alleviation of older people;
2. Minimum funding level of the general pension scheme, each eligible participant (person who has ever worked) with a pension account;
3. Attractive and effective participatory pension schemes for both pre-retirement and post-retirement periods;
4. The administration and investment costs of each pension plan must be made public and encouraged to compete;
5. Flexibility so that retirement can be done at different ages and in different ways, in specific personal and financial circumstances;
6. Contributions or withdrawals of capital during the years of retirement, without any negative effects in the pension system;
7. The accumulated benefits must be immediately accessible only under certain conditions, such as retirement, death or permanent invalidity;

8. Fair and sustainable fiscal facilities for funded pension schemes to encourage voluntary savings;

9. Corporate governance of pension funds must be independent of the government and not be under the control of employers;

10. Prudential regulation of pension funds and requirements for transparency in the communication and protection of participants in the pension system.

The ideal structure of a pension system is a great challenge to government policies, employers' practices, individual investor education, and cultural differences. In this regard, the following statements are cited in this study (Mercer & CFA Institute, 2018):

• William Sharpe, Nobel Prize winner - Financial Thought - Past, Present, and Future: Pensions are "the most difficult issue I have faced so far - because it is a multidimensional problem" (CFA Institute, 2014)

• Robert Merton, Nobel Prize laureate - Retirement planning crisis: "Developed markets have made defined (retirement) pensions plans a much more challenging challenge, requiring" to rethink the way we involve the participants as well as how we invest money "" (Harvard Business Review, July 2014)

• CFA Institute - Global Market Sentiment Survey: "The most underestimated risk is the demographic aging trend of the population + the deficits associated with pension plans and the low level of savings for the years of retirement" (2015)

Tatyana Bogomolova, an analytical presentation of the PROST - Pension Reform Options Simulation Toolkit application, developed by the World Bank on the diagnosis and evaluation of pension reform reform options. The application performs long-term projections on the demographic, economic factors, the pension system policies / parameters, including the individual behavior of the potential pension beneficiary. The application allows analysis of the pension system as a whole, of all the main dimensions of pension policy, but also of an individual. The application also presents the financial sustainability of public pension systems (financial flows, government debts, implicit pension liabilities, financing gap) and the adequacy of expected benefits (at retirement, after retirement, by categories of pensioners), Bogomolova, 2010.

The National Institute of Statistics elaborated in 2017 the study on "Designing Romania's Territorial Population" until the horizon of 2050. The demographic decline phenomena are the ones we find in subsequent studies: reduced fertility rates, moderate growth life expectancy at birth and a negative balance of external migration. In designing the population of Romania up to 2050, the INS used three forecasting variants: medium, optimistic and pessimistic. The population decline will be between 3.6 million (optimistic variant) and 6.5 million (pessimistic variant, CNP, 2012).

For population prognosis, INS has used the Spectrum program developed by Avenir Health in collaboration with the United Nations Population Division, UNICEF, World Health Organization, and others. The program provides estimates of the population with regular residence in Romania, the number of mothers, the fertility rate and the number of live births with the usual residence in Romania, life expectancy at birth, the number of immigrants and emigrants according to the usual residence, the mortality rate for the persons with habitual residence in Romania, addiction rate, etc.

In September 2015, the National Pensions Commission (CNPP) makes a "Final report on the model of micro-simulation of the evolution of the public pension system in Romania", aiming at presenting the characteristics of simulation models for pension forecasts used within the EU. These are two types: standard models and micro-simulation models. For the aggregate projection of the sustainability of the public pension system, namely, projection of pension distribution and replacement rate within the population, CNPP used the simulation model called SimProVision, developed jointly by Deloitte Consultancy Romania. SimProVision is a Monte-Carlo type random simulation (pseudo) simulation model implemented within the Prophet Professional 8 actuator application (CNPP, 2015).

Under a series of economic assumptions (inflation rate, wage developments in the economy, salary increases correlated with the individual's career, etc.), behavior (distribution of marriages / divorces, distribution of births, etc.), legislative and demographic (projections of new entrants to the market current population statistics by age, sex, etc.), the model can report monthly, quarterly, semester and annually:

o Aggregate level
o Pension expenditures in BASS (state social insurance budget)
o Revenue to the BASS budget
o Balance of budget BASS (deficit / surplus)
o Debts or savings made by the BASS budget
o Expenditure on state budget allowances
o Cash Flows Pillar II
• At the individual level
o Net income of a person at the time of initial retirement;
o Revenue from old-age, invalidity and other pensions in total.
o Replacement rate of each person at the time of retirement;

The Expert Forum (EFOR), a group of experts in Bucharest that provides advice and ideas on specific political or economic issues, drew up in 2012 the White Paper on Pensions under the generic title "WHO SHOULD PAY CITIZENS 'PENSIONS IN 2030?" In which performs a detailed comparative analysis of pensions in Europe versus pensions in Romania and elaborates, with good expertise, seven scenarios of the evolution of the public pension system in Romania (1) in the 2012 legislative situation, (2) increasing the retirement age 3) indexation of pensions with inflation and separately, (4) indexation of pensions with average wage growth, respectively (5-7) keeping / reducing / increasing the mandatory contribution of 3.5% to Pillar II versus nationalization. All the results from complementary scenarios 2-7 are compared to those in the baseline scenario 1 of the pension value, replacement rate (pension revenue over previous earnings) and financial balance (EFOR, 2012).

As the conclusions of their study, we note:

• Trends in demographic aging, "over the next 50 years, Romania will reach the group of countries with the most aging population",
• lowering the occupancy rate below the current level,
• from 0.85 retirees / taxpayer in 2010, it will reach 1.5 pensioners / taxpayer in 2060,
• a huge deficit in the pension fund caused by both demographic factors and tax evasion and by the populist proposals and decisions for obtaining the vote of pensioners.

      The proposals for optimal measures in the study aim at increasing the retirement age in proportion to raising the life expectancy to 65, improving the collection of contributions,

reducing evasion and eliminating payment exceptions, providing a friendly business environment, debureaucratization, predictable legislation and a political environment stable (EFOR, 2012).

The National Commission for Strategy and Prognosis (CNSP) also conducted a comprehensive study on "Long-term Demographic Evolution and Sustainability of the Pension System" in Romania. From the summary published by the CNSP we note that "the negative effects on the financial sustainability of the public pension system caused by the aging of the population are determined by three important factors: increasing the life expectancy of the population, decreasing the birth rate and, last but not least, increasing migration "(Şeitan, 2012).

In addition, in the case of Romania, "massive early retirement in the 1990s, through special legal regulations, ... relatively low legal retirement age, early retirement, special legal regulations and tolerance of retirement fraud on the grounds of invalidity". The financial and economic crisis, rising unemployment, diminishing economic growth, increasing public debt and financial market volatility are all the difficulties facing all EU Member States and significantly affect the sustainability of pension systems.

The authors of the study made a prognosis of the demographic evolution (birth rate, life expectancy and migration) and the pension system (the number of pensioners, average pension, dependency ratio of the public pension system and the replacement rate of earnings salary by retirement). The results of the forecast were obtained by using the World Bank's PROST (Pension Reform Options Simulation Toolkit) application, also used in over 80 countries (Şeitan, 2012).

Proposals to improve the sustainability of the pension system in Romania are similar to those of the EFOR's previous study (new regulations on early and disability pensions, retirement age, reduction of loss caused by errors, fraud and corruption in the pension system). In addition, we also find proposals to improve the administrative capacity of public and private pension institutions, as well as a public pension system, contributing to those working exclusively in the agricultural sector.

2.   Prognosis of Demographic Trends in Romania in the Horizon of the Years 2060

Any study on the sustainability of the pension system in Romania inevitably starts from at least three demographic problems that our country will face over the next 40 years:

  • Decrease of the total population;
  • Population aging;
  • Emigration that has been so far and will continue for about 30 years.

All this leads to major difficulties in public finances under the pressure of additional spending due to demographic change. Future public policies will have to "keep public debt at a reasonable level to cope with future increases in public spending due to demographic trends," (Dobre and co-authors, 2012).

2.1. Decrease of the total population

Starting from the current situation of the population, Eurostat makes projections of the evolution of the population of the EU countries, from 10 to 10 years, until the 2080s. As a result of the lower birth rate and of the consistent emigration, the current number of the population of Romania of 19.3 million inhabitants is projected to reach 15.7 million in 2060 and 14.5 million in 2080. At the same time, the average population of the European Union countries is slightly increasing from 18, 4 million, currently at 18.7 million in 2060 and 18.5 million in 2080 (Figure 1).
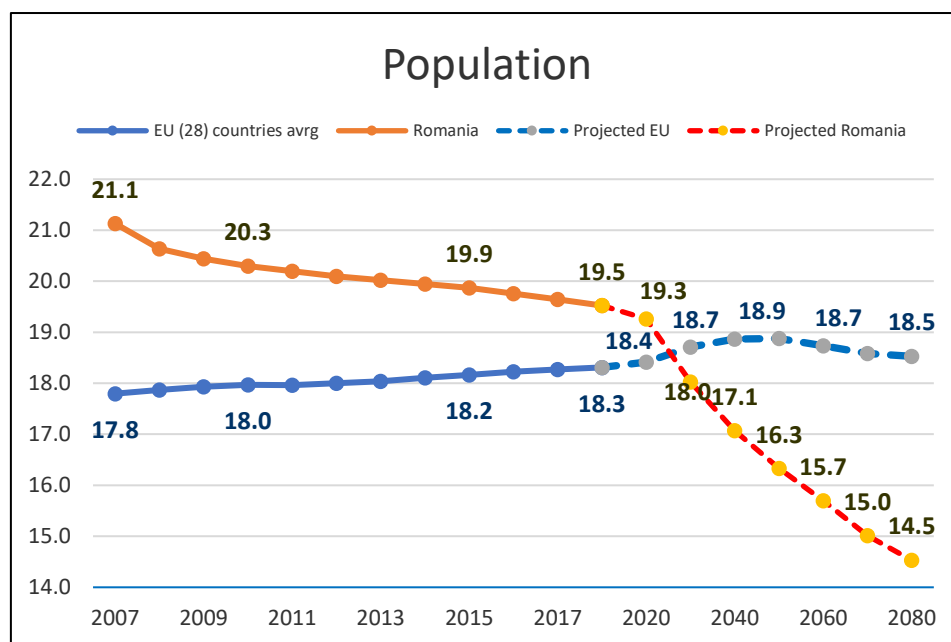

Figure no. 1. Evolution of the population of Romania, compared to the average of the EU countries, for the period 2007 - 2018 and the forecast for 2020 - 2080

Source: Eurostat, Population and social conditions and own calculations.

The US Census Bureau forecast is annual and less downward than the one developed by Eurostat (10 to 10 years). Starting from this US Census Bureau prognosis, which allows us to make annual forecasts, we will extrapolate Eurostat estimates annually for each decade. The US Census Bureau forecast is only available until the 2050s, so our extrapolations were made up to 2060 (Figure 2).
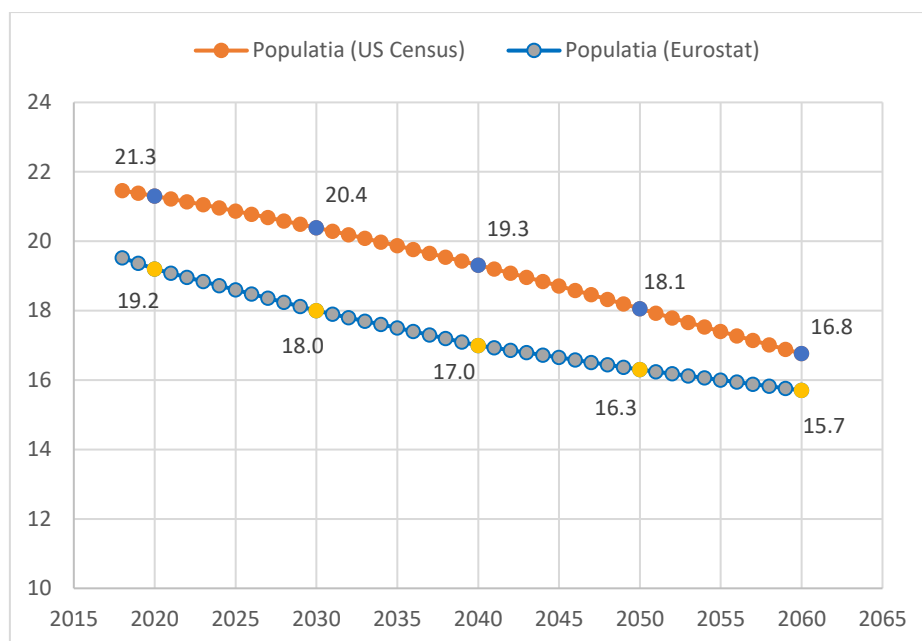
Figure no. 2. Forecast of the population of Romania for 2020-2060

Source: US Census Bureau, Demographic Overview - Custom Region - Romania, compared to

Source: Eurostat, Population and social conditions and own calculations.

Compared to Eurostat, the US Census forecast is about 1 to 2 million more optimistic. Unfortunately, both forecasts show a drastic decrease in the number of the population in our country.

2.2. Population aging

The US Census Bureau illustrates significantly the aging phenomenon of the Romanian population. On the structure of the 2018 population compared to 2050, the 50-year-old population is currently predominant (2%), with a markedly reduced share of 53 years of age (1%), an increase in weight to the age of 63 (1.4%) and is naturally followed by weight decreases to the age of 100 (Figure 3). By comparison, in the year 2050, the population of 62-63 years is predominant (1.7%) and 69-73 years (1.6%).

The aging of the population is also reflected by the median of age 2018, 41.6 years compared to a median age of 51.5 years, in 2050, respectively by about 10 years. The median age is higher in women (43 versus 54 years) relative to that of men (40.2 versus 49.1).
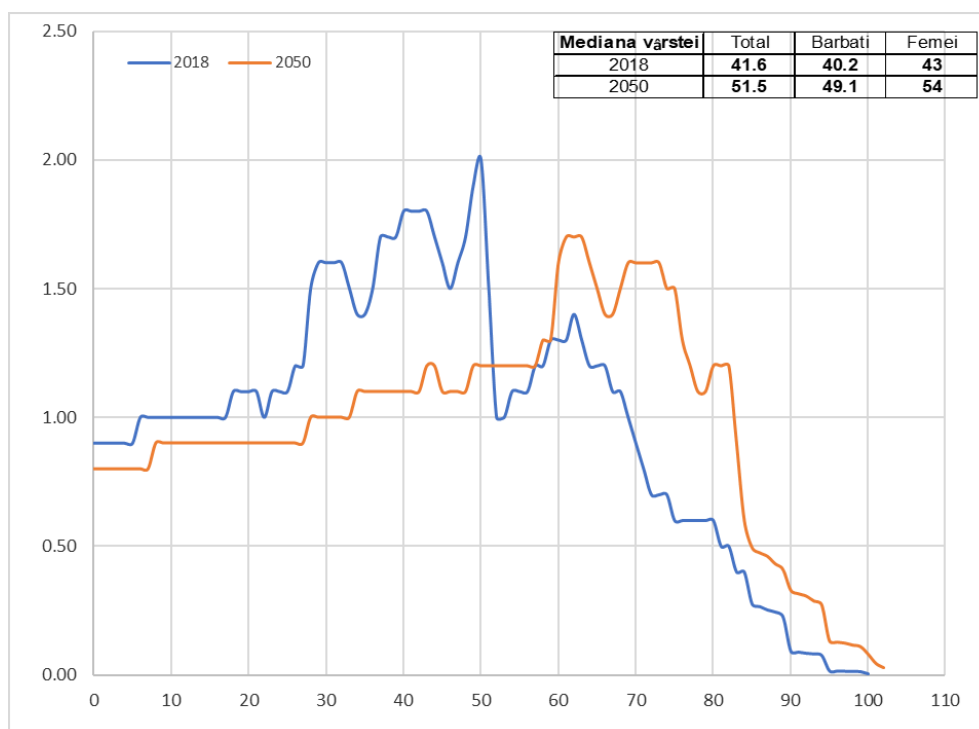
Figure no. 3. Evolution of the age structure of the Romanian population in 2018 compared to the year 2050

Source: US Census Bureau, Mid-Year Population by Single Year Age Groups - Custom Region - Romania and own calculations.

According to EUROSTAT projections, although we currently have the median age of the population lower than the median at EU level, future demographic conditions will lead to an aging population of Romania with a significantly higher median than the EU median (Table 2).

Table no. 2. EUROSTAT projections on the median age in Romania versus the European Union

	2015	2020	2030	2040	2050	2060	2070	2080
European Union - 28 countries	42.4	43.5	45.4	46.6	46.7	46.8	46.7	46.6
Romania	41.0	42.9	46.3	48.8	48.3	47.8	47.0	46.3

Source: Eurostat.ec.europa.eu, 2019

Natality in Romania dropped dramatically after the revolution well below the 2.1-foot rate for a woman, a rate that allows the natural renewal of generations. So, after a slight increase in 2009, to 1.66 children born alive by a woman, during life, we had decreases to 1.46 births in 2011 and 2014 but with a return to 1.64 births in 2016. The EU average is relatively constant of 1.6 newborns from 2008 to 2016, obviously this rate is below the natural growth threshold of 2.1 newborns.
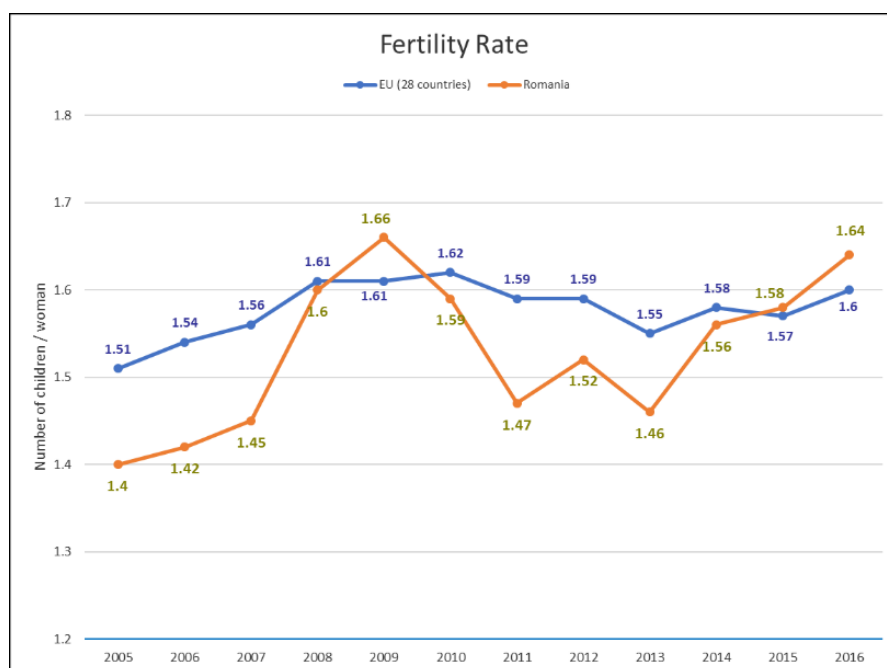
Figure. no. 4. Number of children born to a woman during life.

Source: Eurostat, Population and social conditions and own calculations.

And in this case, the causes are multiple and complex. First of all, young women delay the marriage and the birth of the first child for reasons of professional and material positioning. At present, young Romanian women marry and become mothers after the age of 27 years to the 1990s when most women married and made their first child between the ages of 19 and 25. Unfortunately, in the coming years, women's age at first marriage and at first birth will increase to 30-34 years.

The marriage rate has fallen in Romania from 9.1 marriages per year to 1,000 people in 2007 (EU = 4.9) to 5.2 in 2011, then rose to 6.8 in 2016 (EU = 4.1) while divorce rates remained relatively constant of about 2 divorces per year per 1,000 people (EU ≈ 1.6).

Secondly, external migration is predominantly made up of women aged between 25 and 45 years. The fact that most of these migratory people are women of fertility age, and their newborns will remain in the destination countries, causes a major cause of the decrease of the population of Romania.

All these unfavorable demographic phenomena lead to elderly dependency rates (65 years and over / (15-64 years)) from 26.3% in 2016 to 56.7% in 2060 when labor force employability -64 years) drops from 8.1 million from 2016 to 5.2 million in 2060.

2.3.   Migration

The third cause of the drastic reduction of Romania's population is the emigration of the Romanians. The external migration of about 70,000 people annually is essentially determined by economic causes.

Exodus of Romanians records unprecedented situations placing our country in second place (after Syria); the exodus of citizens not caused by the war (fortunately, we are in peace), but by the lack of jobs, the lower salaries in the country, the restructuring in the national economy, the discouraging political climate, etc. Emigration has been favored by Romania's status as a member of the European Union and implicitly of the right to free movement within the EU. The year 2007 records a record of the exodus with over 450,000 Romanians in the developed European countries (Italy, Spain, Germany, England, etc.).

Table no. 3 Projection of the net migration flow of the Romanians 2016 - 2070

	Net migration ('000)				Net migration (% of population)				
	2016	2030	2060	2070	2016	2030	2060	2070	2016-70*
EU27	1241	937	793	697	0.3	0.2	0.2	0.2	11.2
RO	-64	-51	2	3	-0.3	-0.3	0	0	-7.2
IT	134	210	177	164	0.2	0.3	0.3	0.3	18.9
DE	750	268	175	143	0.9	0.3	0.2	0.2	16.7
ES	13	119	154	137	0	0.3	0.3	0.3	14.5
UK	244	220	121	107	0.4	0.3	0.2	0.1	11.8

* Note: Cumulative net migration as % of population in 2070.

Sursa: Eurostat, 2015-based population projections.

Table no. 3 illustrates the situation of migration in Romania, compared to the positive migration flows in the most important European countries of destination. According to the EUROSTAT forecast, the migration balance will gradually decrease until 2040, and then we will register a positive migration balance of foreign citizens in Romania (Figure 5).
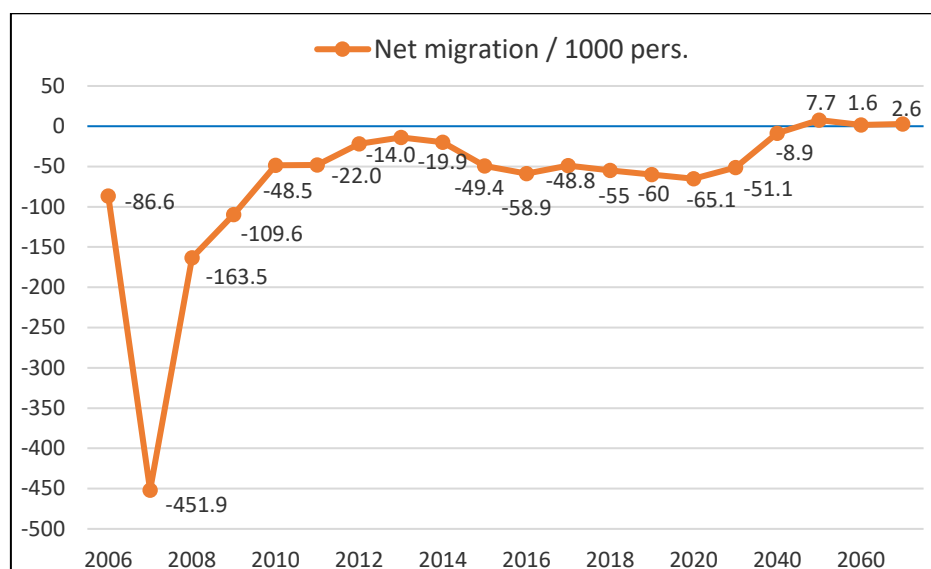
Figure. no. 5. Evolution in 2006-2018 and projection of the Romanian migration balance by 2060.

Source: The 2018 Ageing Report: Economic & Budgetary Projections for the 28 EU Member States (2016-2070) and own calculations

It is estimated that we have about 5.85 million Romanians in the diaspora, many of them with temporary residence but intending to settle in the destination countries to preserve the social status, children's education and to promote better professional positions. More recently, we are also witnessing cases of returning to the country of those very well motivated to develop a niche or well-encouraged business for their research and education career.

3. Projections on the number of pensioners versus the number of contributors to the public pension system

As a result of demographic phenomena described above but also of labor market imbalances (low employment rates, preponderance of workers in the agricultural sector, non-legal work - estimated between 1.5 and 3 million), the number of contributors to the pension system is diminishing from 5.6 million in 2016 (slightly increasing in 2020 = 6.25 million) to 4.3 million in 2060 (Figure 6). In contradictory evolution, the number of pensioners will increase slightly, from 5.15 million in 2016 to 5.63 million in 2050 and 5.47 million in 2060, respectively.
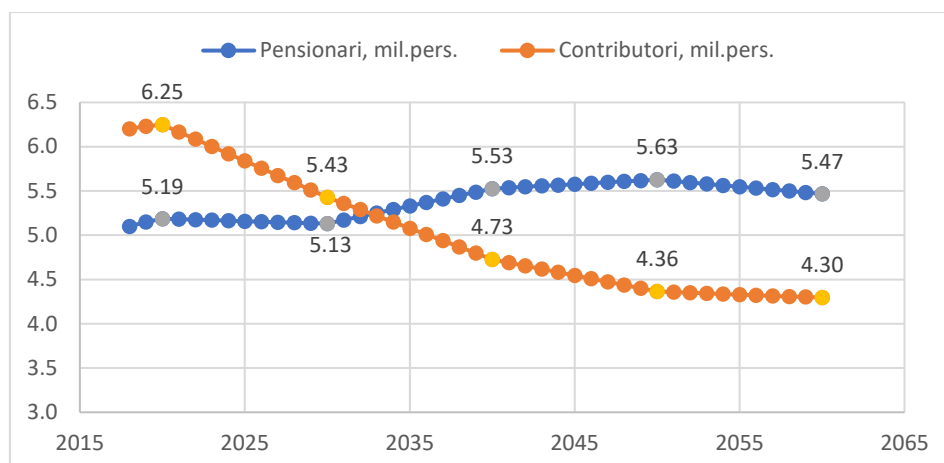
Figure. no. 6. The projection of the number of pensioners, respectively, of the number of taxpayers to the pension system in Romania

Source: The 2018 Ageing Report: Economic & Budgetary Projections for the 28 EU Member States (2016-2070)

The taxpayers / retirees ratio was higher in 2016 (1.09), but will become much subunit in 2050 (0.78) with slight improvements in 2060 (0.79) and 2070 respectively (0.88) respectively. The effective economic dependence rate for the elderly will increase from 32% in 2010 to 109% in 2060 (EFOR, 2012). However, starting with the payment of private pensions (Pillar II and III) there will be an improvement in the rate of economic dependency.

This unbalanced development will cause a deterioration in the financial balance of the Romanian pension system. The share of public pension expenditure in gross domestic product will grow from 7.3% in 2020 to 8.9% in 2060 with a slight reduction in 2030 (6.6%).

4.   Projections on the financial balance of the pension system

According to the data provided by the Ministry of Public Finance, "the deficit in the pension budget was 1.95% of GDP in 2016, 1.6% of GDP in 2017, 0.5% of GDP in 2018, for this year (2019) the pension budget will have a surplus of 0.2% of GDP. " According to our estimates of gross domestic product (real growth - between 3.4% and 1.3% and 3% respectively), the pension budget will remain in a relative surplus by 2022. After that year projects significant deficits, with a maximum of 87.9 billion lei in 2050, which is to be reduced to 70.7 billion lei in 2060.
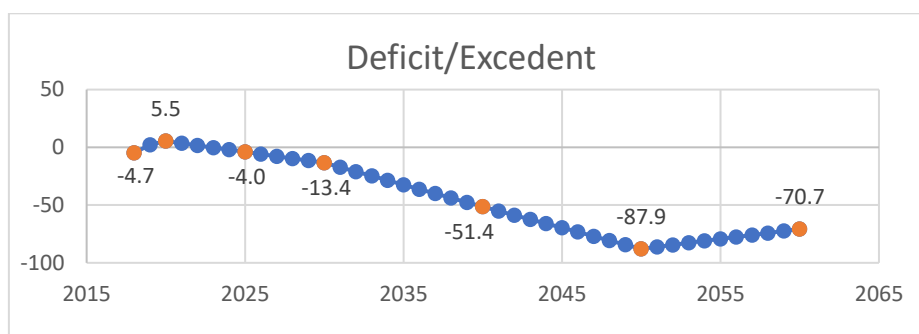
Figure no. 7. Projection of the financial balance of the Romanian pension system

. Source: The 2018 Aging Report: Economic and Budgetary Projections for the 28 EU Member States (2016-2070) and own calculations.

In spite of a moderate future economic growth, this unfavorable evolution of the financial balance of the Romanian pension system is due exclusively to unbalanced demographic trends (declining population, aging, reduction of workforce, increase in pensioners) as previously mentioned . All this will lead to a sharp reduction in the number and amount of contributions to the pension system.

Spending on public pensions has grown steadily as a result of economic growth (fierce growth), the increase in elderly life expectancy (by about 7 years - from 15 to 20 years for men and from 18 to 25 years at women), but also for electoral capital gains (unsustainable growth). All of this will account for increased deficits in the social insurance budget with coverage from the state budget and with a sustained impact on investment financing. In addition to this, the policy of granting special pensions to certain categories of persons in the public system (former MPs, judges, prosecutors, auxiliary staff of courts and prosecutor's offices, former employees of the Diplomatic Corps, Court of Accounts and Civil Aviation) is added[3].

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[3] At the end of 2018 there were 9.171 special pension beneficiaries (HotNews.ro, Jan. 2019)
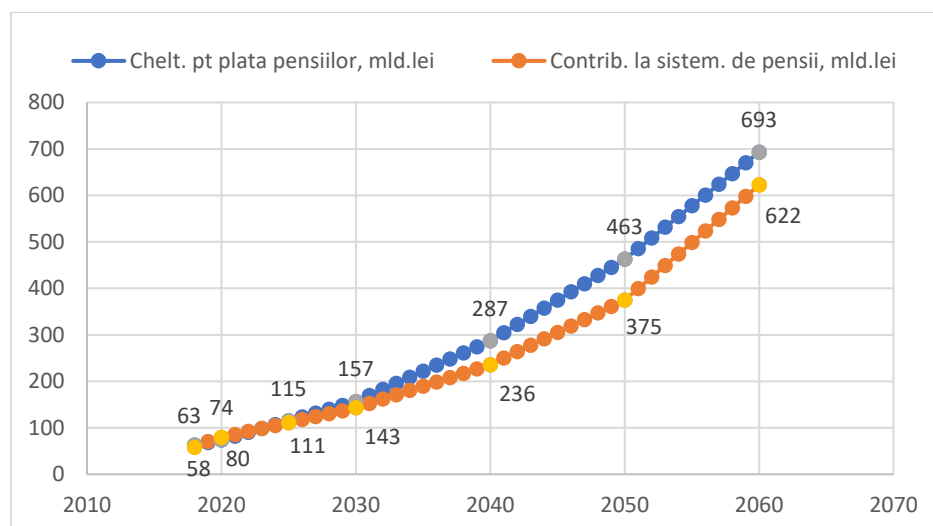
Figure no. 8. Projection of the expenditures for payment of public pensions and contributions to the pension system in Romania

Source: The 2018 Aging Report: Economic and Budgetary Projections for the 28 EU Member States (2016-2070)

Revenue from the pension system is formed from employees' contributions (25% of the gross salary) of which 15% (3.75% / 25%) are paid to Pillar II. The budget deficit is covered by the state budget. "The total revenues of the state social security budget for 2018 are reduced by the amount of ROL 7,315,105 thousand, amount related to Pension Pillar II. In order to fully support the expenditures to be financed from this budget, in the year 2018, a subsidy of ROL 7,409 billion will be allocated from the state budget, "says the 2018 draft budget statement, (Agerpres, 2017).

Conclusions

Romania currently has a population concentration on the active age groups, respectively a median age of the population less than the European average, with the potential for accelerated economic growth coupled with a reduced pressure on the total dependence rate (persons over 65 years of age and children between 1 and 14 years of age). In the long run, however, the pension system will be affected by structural demographic imbalances, the labor market, the social security contributions system, populist pre-election political decisions.

Among the measures for the optimization of the pension policy we associate the proposals of both the European Union and the Romanian specialists in the field, namely:

• increasing the retirement age but also prolonging working life beyond the retirement age,
• encouraging the supplementation of the public pension with private savings income,
• Ensure a healthy business environment to encourage new jobs and reduce undeclared work,

• increasing the collection of social security contributions, reducing evasion and waivers,
• pension policy should be centered on the sustainable equilibrium of the pension budget and abstain from populist election decisions,
• ensuring a stable and predictable legal framework, including a stable political environment.

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