Foreword

Comprising of more than 245 members, holders of the prestigious Chartered Financial Analyst (CFA®) designation, one of the key objectives of CFA Society Romania is to promote financial literacy for the ultimate benefit of the society.

Against this backdrop, CFA Society Romania launched in September 2019 a financial literacy project, Generation I, aiming to increase awareness about future challenges and recommend actions to be taken for ensuring retirement security.

This project came in the context of observed demographics trends – ageing population. In Romania, this trend is worsened by migration as our country has the second-largest migration rate in the world. The worsening demographics will pose a big sustainability challenge for the public, pay-as-you-go pension system, and consequently on the retirement security of the generations X and below.

An output of this project is the current paper, The Future of the Romanian Pension System, wrote by members of CFA Society Romania.

In this paper, we present the current setup of the Romanian pension system, our demographic trends, an assessment of the implied debt of the public, pay-as-you-go pension system. We also assess the efficiency of the current pension system in terms of providing a suitable income at retirement for an individual entering the labor market.

A section of the paper is dedicated to the sustainability challenges of the public pension systems, followed by ten principles for improving and increasing the efficiency of the pension system as a whole.

The paper concludes with a financial literacy section – ten principles to be followed by individuals during their active life for achieving a higher degree of financial independence regardless of age.

We are looking forward to a healthy and informed debate that can bring us closer to achieving financial independence at retirement for as many individuals as possible, for the ultimate benefit of the society.

Adrian Codirlasu, CFA, PhD
President
CFA Society Romania

Introduction

Retirement is a topical subject of discussion and we, CFA Society Romania, have drafted this study that aims at presenting solutions for ensuring a robust, well-structured retirement system that adequately responds to society's needs.

Financial security after retirement is of paramount importance to both individuals, as well as for the overall society. Thus, it is compulsory that the majority of countries to properly address social, economic and financial effects of population ageing.

Determining the best structure of a reliable retirement system represent a major challenge, being a topic that covers aspects from governmental policies to employers' practices, financial education, investors needs and so on.

In the future, major changes will be required concerning Romania's retirement system, because an important percentage of the population will retire, will not work any longer and will rely only on their savings, on incomes from other family members and/or on revenues from the government.

Considering this trend in population, we consider a few measures are necessary, that would respond to those challenges, so as the retirement system would be able to supply adequate incomes that may be sustainable in the long term and enjoy confidence from the population.

Within this study, we aim at responding to a few questions such as:

- Why this Study?
- Why did we choose this subject for this Study?

Our answers to those questions are as simple as that:

First, because we care!

Because CFA Society Romania includes more than 245 members, holders of the CFA® designation, practitioners in financial markets, with a high capacity of analysis and eager to dedicate their time and energy to the purpose of helping the Romanian society to better understand its contemporary challenges.

We drafted this Study because we have the necessary expertise and knowledge, but also because this subject is of great interest to us. Practitioners holders of the CFA® designation, alone or in partnership with other institutions or specialists from other areas have realized in time many studies, reports, white papers, analyzing various financial markets from many perspectives. Such an example is the study as realized by Mercer for CFA Institute called "An Ideal Retirement System".

CFA Society Romania is the organization member of CFA Institute and simultaneously the local society of investment professionals, whose main objective is helping the development of the financial market, implementing professional excellence and ethics in Romania's financial sector.

The current paper is part of a broader initiative of CFA Society Romania, that is the financial education campaign “Generation I”.
“Generation I”, the independent generation, is a concept developed by CFA Society Romania, based on the realities of Romanian pensioners.

Unfortunately, retirement age implies for the majority of the population the spectre of dependence on external factors: state policies, children, other sources of financial support. But that situation does not occur in everybody’s case, there are people around us that do not depend on others during retirement, without having substantial financial resources. However, they have cultivated a free spirit during most of their lives, an independent approach that allowed them to engage in various activities without being constrained by certain circumstances or conditions, and without them being pushed from behind. They are the ones administering their own financial resources, save, invest and keep continuously informed.

Through the “Generation I” campaign, CFA Society Romania does not address to an academically defined generation, based on demographic factors. Instead, as we see it, “Generation I” encompass all generations, indeed all people, no matter their age, to whom the main life value is independence in all its forms, including the financial one.

Our initiative has been launched in order to sustain in the popularization of the financial independence concept and we want to encourage as many people as possible to aspire to it, to wish to become part of the “Generation I”.

Financial independence is learned currently by auto-education and by trial and error. In Romania, financial education is still at its early stage, but steps are made in the right direction. Therefore, we do not have yet enough resources at people disposal, for them to achieve the required financial education as necessary to any person in a civilized society.

Members of “Generation I” to which we aspire, are those that make efforts on their own to learn how to manage their financial resources. They are the ones who ask specialists how and where to invest, in order to attain a constant excess income. They are those who learn by doing the value of their expense budget and their savings and apply small financial responsibility steps in their daily life.

Financial education can be learned, and it is one of the pillars of a healthy society and a fulfilled life. “Generation I” should know that we are not bound to live under the shadow of a dismal future, but rather we may do small efforts every day, in order to learn how to manage our own resources. Financial independence does not equate wealthiness and people should not be discouraged by the fact that they cannot attain it. We consider that by proper education and information people may learn how to live freely and independently at any stage of their lives and irrespective of their financial resources.

Chapter 1 – The current context

The retirement subject has been, still is and will remain an important one because of its major impact over the entire society and over people that depend on pension incomes.

The current topic is the most spirited, since major changes in the pensions system may have occurred in the latest period.

Herewith some major themes around the retirement subject, that distinguish currently:

Increase in public pensions: after two years with increases of 10% and 15% of the pension point, by 2020 this would have to increase by an additional 40%. That occurrence, while making our parents and grandparents happy, brings risks related to the financial stability of our country and puts pressure on the fiscal deficit and its financing. Moreover, allocating an increasingly higher part of budget revenues to pensions and salaries leaves too narrow a space for financing public investments, the health system, education, etc.

At the same time, alongside with another increase in pensions announced for the year 2021, current legislation also states a re-calculation of all pensions. This adjustment, while correcting some former discrepancies, brings further pressure over the state budget: following this adjustment, pensions may only increase. The current pressure over Romania's budget coming from pensions pushes the budget deficit to some 4.4% at end 2019, by large over the 3% target imposed by the Stability and Growth Pact. The perspective for the following years is of further worsening of deficits. Furthermore, following the above-mentioned measures, the percentage of public pensions expense will increase by more than 5% of GDP by the year 2022, making sustainability of the state budget more difficult and leaving a very narrow space to allocating funds to public investments for at least one economic cycle hence. Those budgetary constraints would have a negative impact on Romania's future economic growth.

The year 2019 has brought a few uncertainties regarding Pillar 2 of the pensions system. Although part of those major risks has been avoided in the last moment, still significant changes have been brought to the functioning of the pension funds management companies:

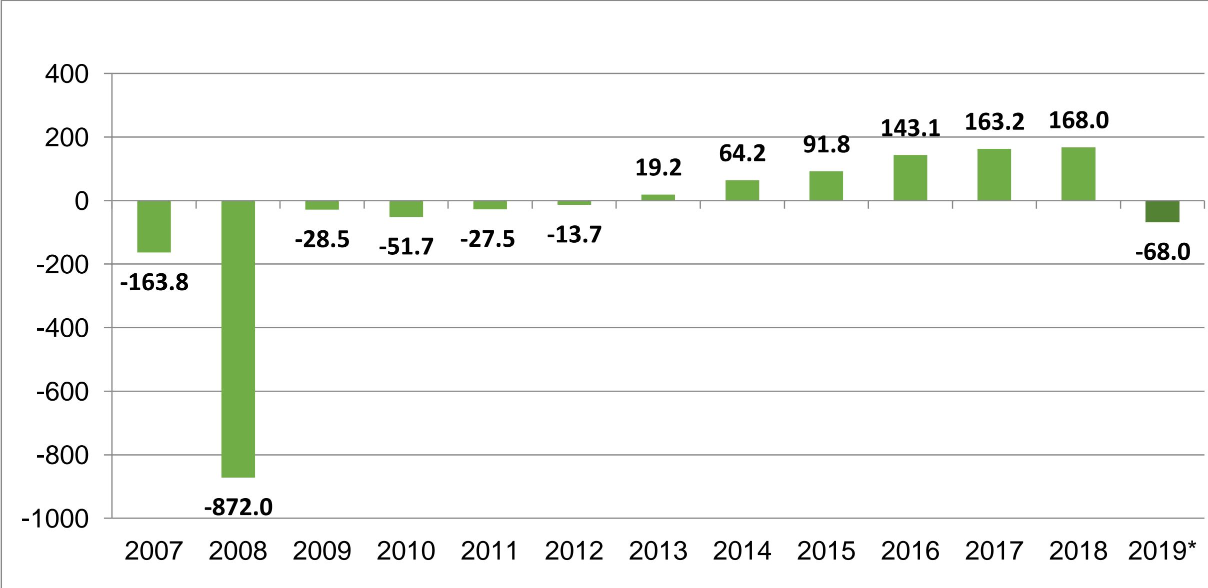
- Capital requirements have been increased, although the management activity by itself did not change, is the same as before, and risks associated with management did not increase. Managers need to upgrade their invested capital in those companies by more than 120%;
- Gross commissions have been reduced significantly, by more than 40%;
- Net revenues decreased by approximately 60% (caused by A.S.F. and C.N.P.P. taxes on contributions to the pension funds);
- At the same time, the legally binding expenses by legislation have increased (most of them through taxes to public authorities, for example, a new tax of 0.5% of collections need to be paid to C.N.P.P.).

The significant decrease in commissions revenues and the increase in taxes paid to public authorities (A.S.F., C.N.P.P., F.D.G.S.P.P.) led to the absurd situation by which more than 70% of commissions paid by Romanians for the management of their private pensions went to the State, although private managers are the ones who actually manage the Pillar 2 pension funds, no other sector of the Romanian economy (not even the tobacco industry) being taxed that much.

Therefore, through the increase in costs and capital requirements, at the same time with the significant decrease in revenues, pension funds management might become an un-economic activity, jeopardizing the future of the private pensions sector in Romania.

It is noteworthy to mention that for the first time during the last 7 years, pension fund managers lose money.

Net financial profit of fund managers (RON mn)



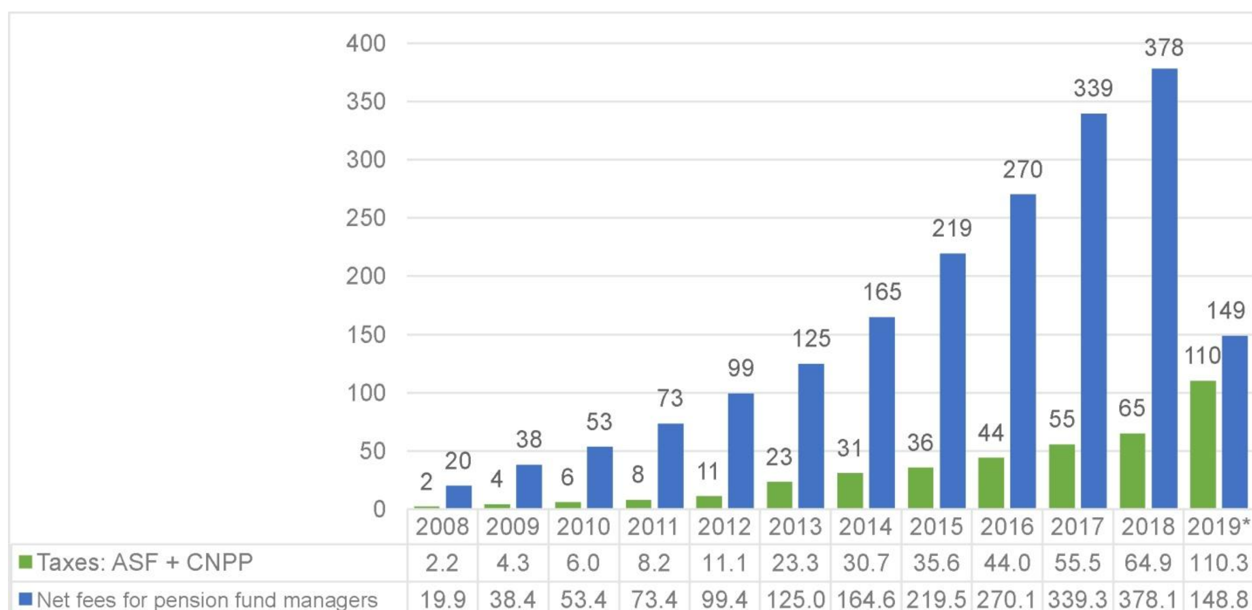
**annualized 6 months figure*

Sources: Ministry of Public Finance, Registry of Commerce, fund managers' websites

Corroborated, all those legal changes that took place at end-2018 and during 2019 pushed companies that manage private pension funds at loss. During the first half of 2019 and for the first time in the last 7 years, private pension funds managers recorded significant accumulated losses of RON 34 million (some EUR 7 million). This situation not only makes it unattractive for Pillar 2 pension funds managers to run their business, but also may lead to their decision to exit the market.

Private pension fund managers may decide to run off the business as their activity is not profitable or it brings significant financial and reputational risks. Another possibility is for managers to consolidate the market through mergers and acquisitions. Such a decision may lead to a decrease in market competitiveness in this industry through decreased competition leading in the long run to a disadvantaged position for the pension fund participants. It is worth to mention that the number of private pension fund managers decreased from 14 in 2008 when Pillar 2 has been launched to 7 in 2019.

Fund Managers, burdened by ASF and CNPP taxes (through OUG 114/2018), figures in RON mn.



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019*
Taxes: ASF + CNPP	2.2	4.3	6.0	8.2	11.1	23.3	30.7	35.6	44.0	55.5	64.9	110.3
Net fees for pension fund managers	19.9	38.4	53.4	73.4	99.4	125.0	164.6	219.5	270.1	339.3	378.1	148.8

**2019 estimate*

Source: CFA Society Romania computation

By analyzing the last year of activity of the Pillar 2 private pensions, provisions of the Government Ordinance (OUG) 114/2018 would lead to a de-facto nationalization of the private pension funds, through eliminating pension fund managers out of the market. This situation would have been determined by the combination of two measures that together created an extremely poisonous mix for the fund managers: a drastic reduction of private pension funds managers' incomes, and the exponential increase in capital requirements for the Pillar 2 pension fund managers.

Reduction of managers revenues happened through capping to 1% (from a maximum of 2.5%) the commission applied on monthly contributions as received by private pension funds. There is worth mentioning that the most part of those commissions are directed to state institutions: 0.5% goes to the National Public Pensions House (CNPP), a tax newly introduced, and 0.25% goes to the Financial Supervisory Authority (ASF). Therefore, the manager of Pillar 2 pension funds only gets 0.25% of the total commission. Furthermore, the maximum commission applied on assets under management has been significantly cut from 0.6% per year to 0.24% per year, as long as the return on assets under management is below the inflation rate, as it has been the case during the first half of 2019. Out of those commissions, fund managers cover their management expenses as well as transaction costs for management of the pension funds' portfolios.

Regarding the annual management commission, this is linked to the inflation rate level, a rate that has been very volatile during the latest years. With inflation rates going up, pension funds returns would decrease and accordingly, the annual management commission would decrease.

The reason for that to happen is that almost 70% of pension funds' portfolios are invested in fixed income instruments denominated in RON (especially in T-bills). When inflation rate goes up, the yield curve of those instruments would shift upwards (interest rates would go up), and

that would lead to a decrease in the price of those instruments. Accordingly, mark-to-market of the bonds portfolios held by pension funds would determine a loss in value only attributable to the inflation rate. It is important to mention here that pension funds cannot control and/ or influence inflation rate, this macro aggregate being mostly determined by the mix of fiscal and monetary policies of authorities, along with general economic trends. A solution for diminishing the inflation rate impact over the return of pension funds would be reducing their exposure on Romania's T-bills and international (and currency) diversification on fixed income instruments. This international diversification would bring an added return from currency exchange, taking into account the depreciation trend of Romanian national currency RON and the correlation between exchange rate evolution and the inflation differential.

The capital requirements have increased exponentially, according to OUG 114/2018 and they reached up to 10% of all contributions.

The mix of the two measures as described above would potentially make the activity of pension funds administrators non-viable from an economic standpoint, leading to their elimination from the market, possibly in a very short period.

Moreover, through a new Government Ordinance (OUG 38/2019) the government intended to prepare the ousting of pension fund managers from the market, through regulating a special administrator in case private pension fund managers leave the market – a public institution, the Fund for Private Pensions System Rights Guarantee (FGDSPP). Although the final draft of the OUG did not include such a provision, the Ordinance project as initially intended leaked in the public space, and the preoccupation of authorities regarding a market exit for fund managers has been revealed.

At the same time, through another Emergency Ordinance, the government made contributions to Pillar 2 of the pensions system optional. This regulation has though a very limited impact in shifting contributions from Pillar 2 to Pillar 1. Such a behavior from contributors was to be expected, since contributors who shifted to Pillar 1 received "pension points" in exchange. The value of such points is established by law; however, nobody may guarantee that such laws would be in place 20 or 30 years hence. Compared with Pillar 1, in the case of Pillar 2, contributors own fund units in their individual accounts. Those fund units are the property of the Pillar 2 private pension fund participant, they accrue returns for their owner and may be inherited as opposed to pension points from Pillar 1, which are lost if the participant decease.

During its 30 May 2019 government meeting, the government approved an emergency ordinance project through which capital requirements were reduced from up to 10% of all contributions to 8% of prior year's contributions. At the same time, incentives are proposed for further capital requirement reduction in case pension funds invest in public-private partnerships.

However, whether as a result of the public-private partnership resulted listed bonds or shares, those financial instruments were available for purchase also under the existing legislation, without a capital requirement benefit, though. Whether instead the financial instruments were not listed – and such investments become available according to the newly issued ordinance – those are riskier instruments, that do not have public pricing. Such investments would lead to an atypical and counterintuitive situation, as opposed to financial theory: taking a higher risk for the Pillar 2 contributor would be rewarded by a lower capital requirement for the fund manager. So, in case of public-private partnerships, the law introduced a potential conflict of interests between contributors and fund manager.

Chapter 2 – Sustainability of the public pension system

In the year 2018, the National Statistics Institute (INS) has published its findings regarding "Accumulated pension benefits as of year-end 2015" in the context of an ageing population and European transparency rules.

Specifically, those figures show the present value of the state's public pensions future obligations, for both retired citizens and accumulated benefits of working individuals. Figures, as reported by INS are significant: the implicit state debt stemming from future pensions obligations was, as at end 2015 of 1,295 RON bn (approximately EUR 288 bn at the exchange rate effective in 2015), or approximately 182% of that year's GDP.

For our current analysis though, it is of relevance the evolution of the pension point during the latest years. We have therefore adjusted the figures as published by INS by the generous increments in public pensions for the following years, up to the year 2021. By adjusting the figures as published for 2015 with subsequent evolutions by applicable laws, the updated present value of the accumulated pension obligations is estimated at 2,821 RON bn as of end 2021 (approximately EUR 592 bn at present exchange rate), which represent some 250% of the estimated nominal GDP of the respective year.

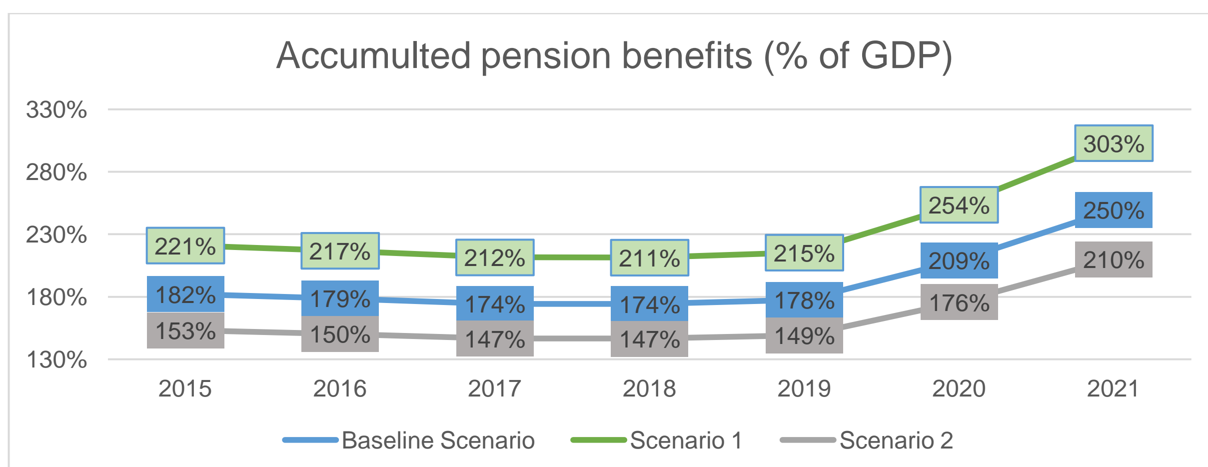
Accumulated pension benefits evolution 2015 (RON mn)

Year	Pension point value (RON)	Baseline scenario (RONmn)	Scenario S1	Scenario S2	GDP (RONmn)	Baseline Scenario (% of GDP)
2015	830.20	1,295,483.20	1,571,952.69	1,089,501.33	711,000.00	182%
2016	871.70	1,360,241.76	1,650,531.39	1,143,963.28	761,000.00	179%
2017	958.75	1,96,078.68	1,815,357.32	1,258,202.12	858,000.00	174%
2018	1,050.00	1,638,469.48	1,988,135.78	1,377,952.78	940,400.00	174%
2019	1,155.00	1,802,316.42	2,186,949.36	1,515,748.06	1,015,200.00	178%
2020	1,435.00	2,239,241.62	2,717,118.90	1,883,202.14	1,071,036.00	209%
2021	1,808.33	2,821,808.54	3,424,011.63	2,373,140.90	1,129,942.00	250%

Source: I.N.S., CFA Society Romania estimates for the years 2016-2021

In the chart below we present the value of accumulated pension benefits, as published by INS for the year-end 2015. Moreover, we compute the value of those same rights for the future by adjusting the figure as reported by INS with the evolution of the pension point that occurred in 2016-2019 and the increase to the pension point as announced for the future, according to existing legislation, for the period 2019-2021.

The data set includes a sensitivity analysis for the pension systems, which are not booked within the national accounts, by indicating to what degree the value of the pension benefits might change should the discount rate be lower or higher (+/-1%) than the one considered in the baseline scenario. All 3 scenarios start from the INS published figures and compute the implicit estimated liability for the years following to 2015 based on the above assumptions. Scenario S1 uses a 1% lower discount rate, hence the higher present value of liabilities, while Scenario S2 uses a higher discount rate, hence the lower present value of future state pensions obligations.



Source: I.N.S., CFA Society Romania calculations

Important to mention: our estimations do not include pensions recalculation and pension point system adjustments, a mechanism envisioned by the existing laws which might supplementary increase state's payment pressure for the years 2021-2022. Those provisions could increase the pensions rights accumulated value to **over 300% of GDP**!
As a comparison, Romania's public debt is currently at around 35% of GDP. Therefore, Romania has a rather low explicit public debt rate, however taking into account also the implicit obligations with the pension benefits of citizens (retired people pensions payments and future accumulated rights of employed people) we can see the actual dimension of the liabilities burden, which is significantly higher.
Below we present the estimated deficits of the National Public Pension House (CNPP):
Hypotheses used:

- Nominal GDP increases by 5.5% per year;
- The pension point increases only by the 3% inflation rate after the year 2021;
- Population decrease as estimated by INS, and the number of employees decrease in line with the diminishing in population;
- Population over 65 years of age increase as estimated by INS, while the number of retirees increases in line with population over 65.

Year	CNPP Deficit (% of GDP)	Population (mn, INSSE)	Population over 65 (mn, INSSE)	No of Retirees (mn, state+agri, CNPP)	Employees (mn)
2013	1.92%			5.25	
2014	2.05%			5.20	
2015	2.62%	19.80	3.41	5.15	
2016	2.07%	19.67	3.42	5.10	5.24
2017	1.58%	19.55	3.44	5.05	5.43
2018	0.50%	19.42	3.45	5.02	5.39
2019	0.60%	19.29	3.47	5.04	5.36
2020	**1.82%**	19.16	3.48	5.06	5.32
2021	**3.58%**	19.04	3.50	5.09	5.28
2030	1.45%	17.89	3.63	5.29	4.97
2040	1.31%	16.45	3.79	5.51	4.57
2050	1.18%	15.08	3.94	5.73	4.19
2060	1.05%	13.78	4.09	5.95	3.83
	Extrapolations, estimates of CFA Society Romania				

Sources: C.N.P.P, estimates of CFA Society Romania

Findings of our analysis show that:

- CNPP deficit explodes starting the year 2021;
- It might last up to a decade before deficit would return to 'normal' values of about 1% of GDP;
- Demographic trends are very worrisome: there will be increasing retirees and even fewer employees.

DEMOGRAPHICS: population pyramid, population decrease, increase in retirees number/ aging population

Projections from various institutions show that the descending demographic trend will continue.

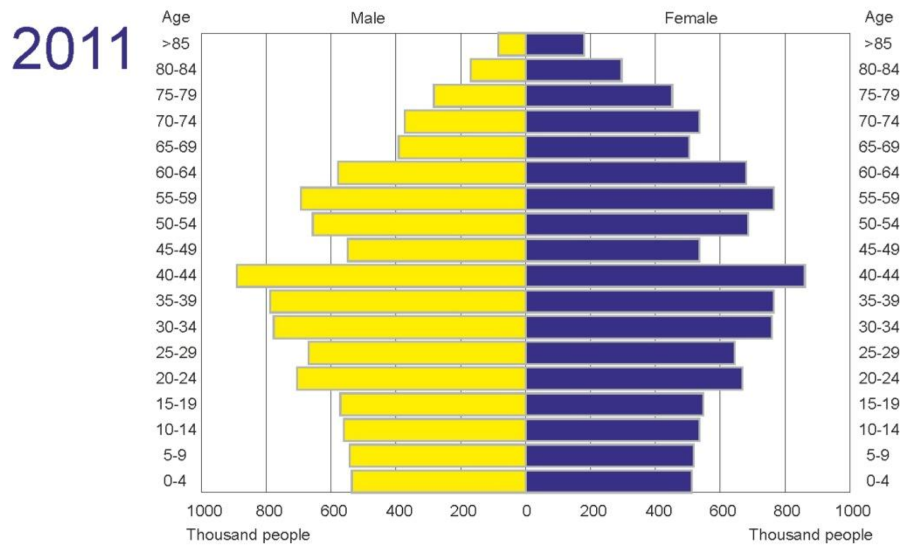
According to the forecast of the United Nations Organization, Romania's population will continue to reduce and will reach about 15.7 mn by the year 2050 from about 19.3 mn currently. Furthermore, the UN estimated in 2017 that the negative gain would reach 120 thousand people per year. Net migration of only 425 thousand people between 2015 and 2050 has been considered to that purpose.

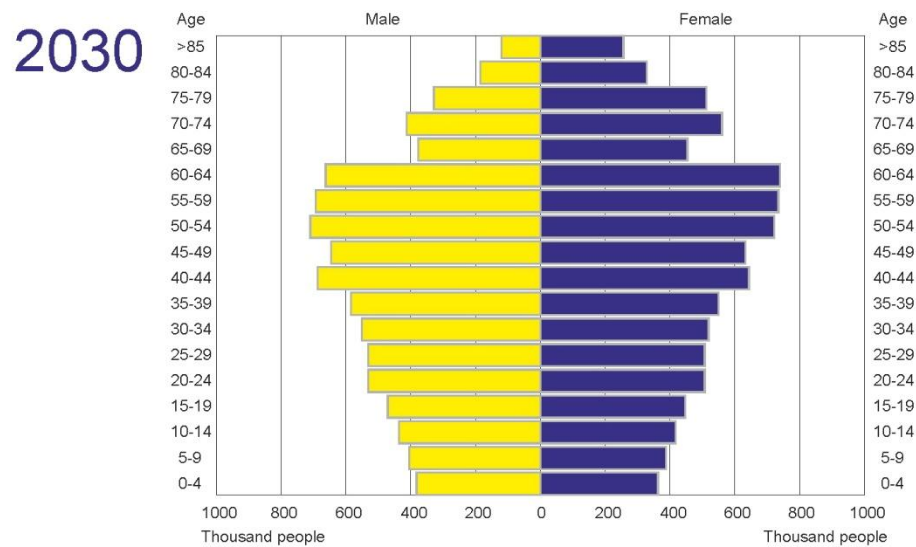
In turn, according to INS, Romania's population would reach 18 million by 2030, and between 12 and 14 million by 2060 (see the table below).

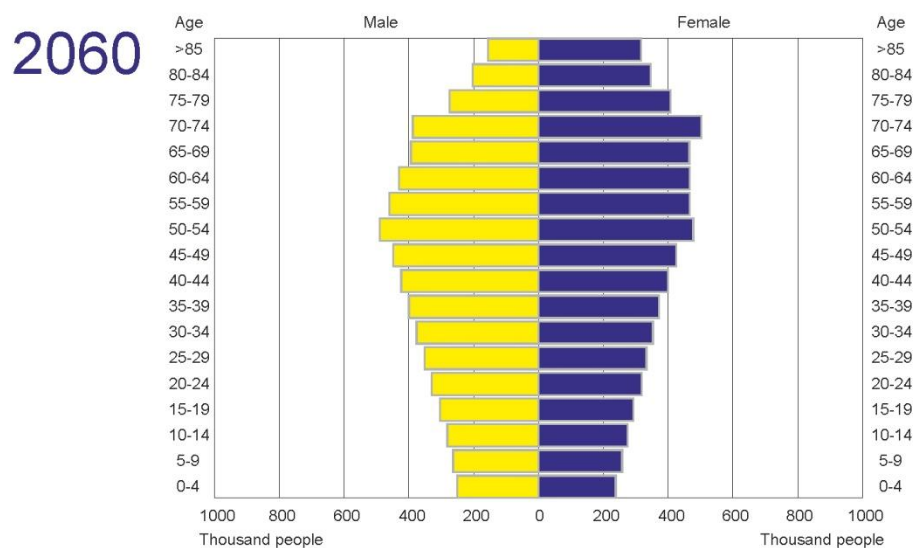
	2011		***2030***		***2060***	
	Thousands	*(%)*	*Thousands*	*(%)*	*Thousands*	*(%)*
			With external migration			
Total	20121.6	100.0	18047.0	100.0	12946.7	100.0
0-14 years	3189.6	15.9	2397.6	13.3	1567.8	12.1
15-64 years	13684.3	68.0	12099.1	67.0	7921.9	61.2
65 years and above	3247.7	16.1	3550.3	19.7	3457.0	26.7
			Without external migration			
Total	20121.6	100.0	18121.9	100.0	13232.7	100.0
0-14 years	3189.6	15.9	2441.0	13.5	1659.4	12.5
15-64 years	13684.3	68.0	12131.5	66.9	8116.1	61.3
65 years and above	3247.7	16.1	3549.4	19.6	3457.2	26.2

Source: National Institute for Statistics (INS)

The age pyramid by age groups confirms population ageing as below.







Source: Data from the National Institute of Statistics

Following this evolution, the dependency ratio increases from 47 (in the year 2011) to 63 (in the year 2060), measuring the rate of young and elder people per 100 adults.

The Eurostat estimate (Appendix 1) is more optimistic regarding population trends. According to Eurostat, Romania's population would reach 18 million by the year 2030, 16.3 million by the year 2050, 15.7 and 15 million in years 2060 and 2070, respectively. Those estimates from Eurostat are still more pessimistic regarding the total dependency rate. This rate would increase from 49.1 (in 2016) to over 80 (starting with 2050) young and elder people as per 100 adults.

Reasons for such findings are both the negative gain and migration. Romania recorded recently the second largest number of emigrants after Syria, a country confronting war.

Furthermore, during the period 2025 – 2035, a peak in retirements would occur, afferent to the 'baby boomers' generation.

While the population will decrease it will also age, bringing further negative consequences over the development of the economy and at the same time putting further pressure over the public pension system. Arguably this system would become unsustainable in the absence of a substantial increase in retirement age and/or increasing taxation. An example regarding increasing retirement age currently comes from Germany, where a debate for increasing it to 69 years is unfolding, though Germany is a net gainer of young and well-qualified immigrants.

Future developments in migration are difficult to anticipate, as they depend on the social and economic development of Romania (internal factors), as well as on immigration policies of the developed countries, which in turn will depend on their economies (external factors). Presumably many of the Romanians who left villages for a large city in Romania (internal migration from rural to urban areas), chose instead to leave directly to other countries. As a result, there is little hope to envisage in the short run a reduction in external emigration out of Romania.

An alternative solution for the sustainability of the social insurance system would be importing workforce from less developed countries, but this is highly dependent on the living standards Romania may offer to such immigrants. Currently, Romania does not have any competitive edge in this respect, and it directly competes with more developed countries (like Germany, France, Italy, Austria, Netherlands, etc.). Therefore, there are minimal chances in the short run to win the competition with those Western European countries.

Under those circumstances, we run a significant risk that the public pension system not being sustainable in its current format, specifically with the present retirement age, pension point increase plan, and social security contributions structure. Most probably, the best option would be changing the mix of the parameters as follows:

- Increase in retirement age. That is a trend that could be already observed internationally. This would probably be the first main option.

  and/or

- A smoother increase (or levelling) of the pension point. Generally speaking, at the international level, a public pension does only ensure a minimal income to retirees.

  and/or

- Increase in taxation for the active population (through social insurance contributions).

As a comparison, at the international level, during the period 1995 – 2017 have been implemented the following measures:

- 76 countries have increased the contribution to their public pensions system;

- 55 countries have increased their retirement age;
- 60 countries have reduced benefits to their current retirees.

As a conclusion to the issues mentioned above, ensuring financial independence at retirement involves to a great extent a personal effort – personal saving and investing in order to depend as little as possible on the public pensions system.

It is worthwhile mentioning that starting with generation X (people born in the period 1961 – 1980) when planning our savings it is prudent to consider that the public pension would be very low as compared with the financial needs of the individuals (and yes, in this respect, social insurance becomes in fact a means of taxation, not anymore a benefit for the contributor).

This situation is already observable internationally, including in the most developed countries: retirement age increases (and the decision attracts social unrest), or retirees continue working because their public pension proves insufficient to cover the current and health-related expenses (and Romania has a poor situation in this respect, too). As an example, re-employment of retirees is common among the US population (where the private pension system is optional).

In Romania, the current public pension system contribution tax amounts to 21.25% of gross salary (as of the year 2019). A simple computation, neglecting time value of money, leads to the assessment that an active person is taxed by 21.25% of its salary for 35 years and then their pension amounts to almost 45% of their salary. Under those hypotheses, a retired person gets back about 55 – 60% of their contribution.

Whether we include the time value of money effect, the amount received back (as a percentage of own contributions) is even lower. Moreover, in case of premature decease of the contributor, the money already paid to Pillar 1 remain in the property of the state, and the state has no obligation to inheritors (with the marginal exception of inheritance pension). Therefore, social insurance contributions actually become a tax on work, not a benefit to the contributor.

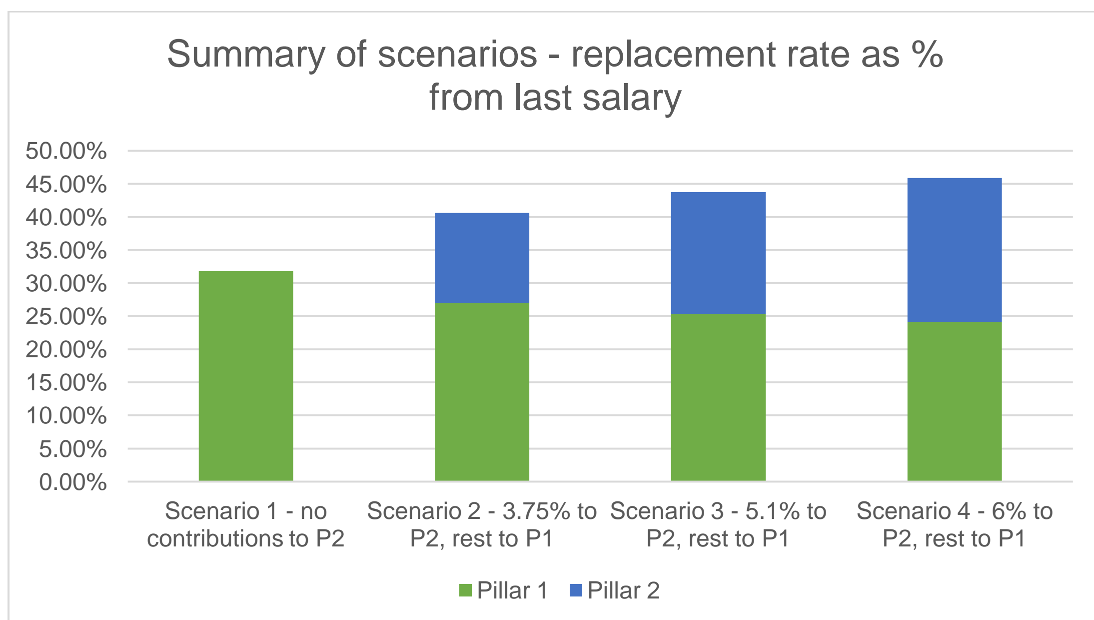
To that reason, of unsustainability in the medium term of the public pensions system, in 2008 has been introduced the private pensions system – Pillar 2, where the accumulated contributions (in individual accounts) are the rightful ownership of the contributor and are invested by the pension fund managers to the sole interest of the contributors. It is important to mention here that the returns of those funds have been significant since the very launching of the system. Moreover, the Pillar 2 accounts as being in the ownership of the contributor and in case of their death is automatically transmitted to their inheritors. Unfortunately, under the current legal configuration of the system, the percentage of salaries contributions to Pillar 2 has been reduced in order to cover for the budget deficit and it is currently too low to ensure the total financial independence of contributors at retirement.

Chapter 3 - Pillar 1 versus Pillar 2

Within this chapter, we will present an estimation of CFA Society Romania on the dimension of future pensions. We estimate what level of pensions could Romanians receive, under the conditions of certain hypotheses, from both Pillar 1 and Pillar 2, their replacement rates and the effect of increasing the contribution to Pillar 2 over the obtainable level of the private pension.

The computation hypotheses for a young fresh working person:

- Inflation rate: 3% per year
- Annual salary increase: inflation + 1%
- Contribution stage: 35 years (period 2019-2054)
- Pension payment: 16 years and 3 months (the average life expectancy at retirement for men and women at 65 years of age)
- The average annual return of Pillar II: inflation + 1%
- Taxes on salary: same as in present
- Evolution of the pension point: inflation, see Chapter 2 – demographic problems
- All computations use the average salary in the economy
- Investment return of P2 after retirement is considered 0%



Source: CFA Society Romania estimates

Summary of scenario results:

Scenarios summary (in 2019 prices)				
Indicator	Scenario 1 - no contributions to P2	Scenario 2 – 3.75% to P2, difference to P1	Scenario 3 – 5.1% to P2, diference to P1	Scenario 4 - 6% to P2, difference to P1
Latest net salary	4,012			
Accumulated benefits to the public system				
No. of points	1	0.85	0.80	0.76
Monthly public pension	1,275	1,084	1,015	969
Pension P1 % of final salary	31.78%	27.01%	25.30%	24.15%
Accumulated benefits to the private system - Pillar 2				
Accumulated balance P2		106,923	145,415	171,076.29
Monthly pension P2	0	544.97	741	872
Pension P2 % of final salary	0%	13.58%	18.47%	21.73%
Total pension (P1+P2)	**1,275**	**1,629**	**1,756**	**1,841**
Total pension % of last salary	**31.78%**	**40.60%**	**43.77%**	**45.89%**
% of total supplied from Pillar 2	**0.00%**	**33.46%**	**42.21%**	**47.36%**
Pension growth attributable to P2	**-**	**27.74%**	**37.73%**	**44.39%**

Source: CFA Society Romania estimates

Detailed scenarios results:

Scenario 1 - no contributions to P2; all contributions to P1	
Final gross salary (RON)	19,504
Final net salary (RON)	11,411
Final gross salary in today's money	6,857
Final net salary in today's money	4,012
Number of points P1:	1.00
Pension P1:	3,630
Pension P1 % of final net salary	31.81%
Pension P1 in today's money	1,275
Pension P1 % of final net salary in today's money	31.78%
Accumulated P2	0
Pension P2	0
Pension P2 % of final net salary	0%
Accumulated P2 in today's money	
Pension P2 in today's money	0
Pension P2 % of final net salary in today's money	0%

Total replacement rate - nominal	**31.81%**
Total replacement rate - real	**31.78%**

Source: CFA Society Romania estimates

Scenario 2 – 3.75% to P2; difference to P1	
Final gross salary (RON)	19,504
Final net salary (RON)	11,411
Final gross salary in today's money	6,857
Final net salary in today's money	4,012
Number of points P1:	0.85
Pension P1:	3,085.21
Pension P1 % of final net salary	27.04%
Pension P1 in today's money	1,084
Pension P1 % of final net salary in today's money	27.01%
Accumulated P2	304,122
Pension P2	1,550.06
Pension P2 % of final net salary	13.58%
Accumulated P2 in today's money	106,923
Pension P2 in today's money	544.97
Pension P2 % of final net salary in today's money	13.58%

Total replacement rate - nominal	**40.62%**
Total replacement rate - real	**40.60%**

Source: CFA Society Romania estimates

Scenario 3 – 5.1% to P2; difference to P1	
Final gross salary (RON)	19,504
Final net salary (RON)	11,411
Final gross salary in today's money	6,857
Final net salary in today's money	4,012
Number of points P1:	0.80
Pension P1:	2,889
Pension P1 % of final net salary	25.32%
Pension P1 in today's money	1,015
Pension P1 % of final net salary in today's money	25.30%
Accumulated P2	413,606
Pension P2	2,108
Pension P2 % of final net salary	18.47%
Accumulated P2 in today's money	145,415
Pension P2 in today's money	741
Pension P2 % of final net salary in today's money	18.47%

Total replacement rate - nominal **43.80%**
Total replacement rate - real **43.77%**
Source: CFA Society Romania estimates

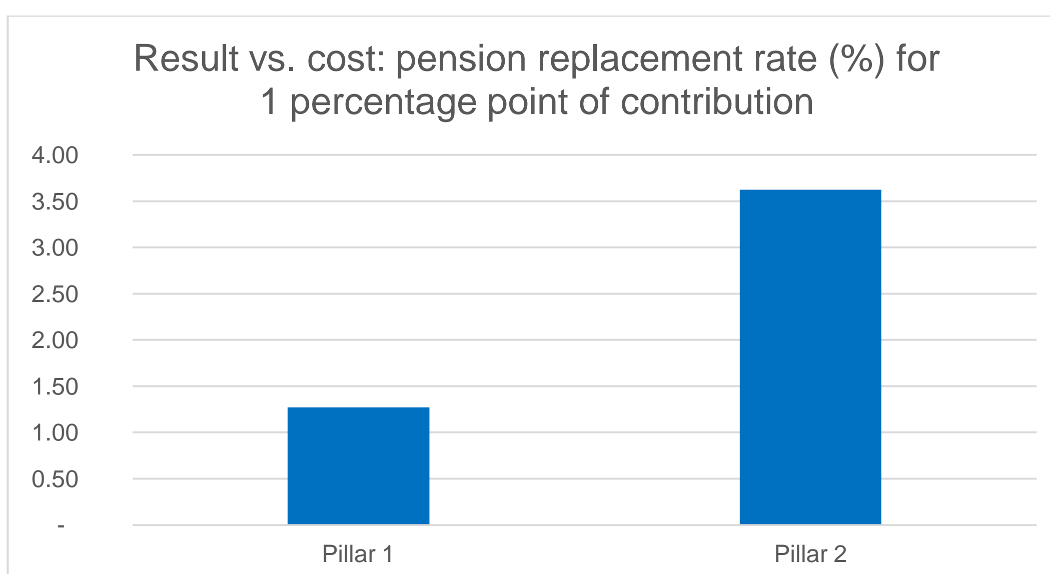
Scenario 4 - 6% to P2; difference to P1	
Final gross salary (RON)	19,504
Final net salary (RON)	11,411
Final gross salary in today's money	6,857
Final net salary in today's money	4,012
Number of points P1:	0.76
Pension P1:	2,759
Pension P1 % of final net salary	24.18%
Pension P1 in today's money	969
Pension P1 % of final net salary in today's money	24.15%
Accumulated P2	486,595
Pension P2	2,480
Pension P2 % of final net salary	21.73%
Accumulated P2 in today's money	171,076
Pension P2 in today's money	872
Pension P2 % of final net salary in today's money	21.73%

Total replacement rate - nominal **45.91%**
Total replacement rate - real **45.89%**
Source: CFA Society Romania estimates

Chapter 4 – Conclusions

Challenges for Romania's retirement system

- Scenarios in which contribution to Pillar 2 is maintained always bring higher pensions for the individual (as compared with the scenario when no Pillar 2 is in place);
- The higher the contribution allocated to Pillar 2, the higher the pension and replacement rate;
- Accumulated pension to Pillar 2 supplements consistently the public pension and eliminates the risk of dependency to demographic factors;
- The result measured as the replacement rate of salary by pension for each additional percentage point contribution is significantly higher for Pillar 2;

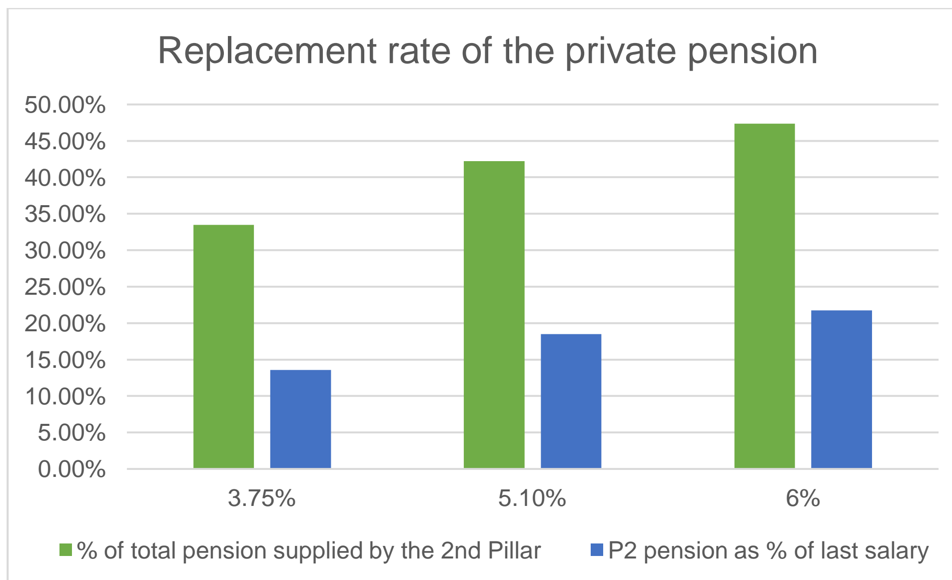


Source: CFA Society Romania estimates

- The percentage of contribution to Pillar 2 needs to be sized so as the increment of Pillar 2 pension to the total retirement revenue to be relevant:

Contribution of gross salary (%)	Pillar 2 pension of total pension	Pillar 2 pension of final salary
3.75%	33.46%	13.58%
5.10%	42.21%	18.47%
6.00%	47.36%	21.73%

Source: CFA Society Romania estimates



Source: CFA Society Romania estimates

Other relevant information:

- An adequate replacement rate (of the final salary through pension) is considered at about 70% (KPMG study, April 2018, “The importance and main benefits of life insurance and private pensions”; OECD recommendation);
- All scenarios considered in our study show replacement rates significantly lower than the 70% level;
- For the scenario implying contribution only to Pillar 1, the replacement rate is only 31.7%, meaning less than half of the necessary level;
- In scenario 4 (contribution to Pillar 2 of 6% as provisioned by legislation but unrealized yet) the replacement rate increases to 46%;
- OECD countries have contributions to similar systems like P2 of 5%-10% (the average of weakest 5 of the 25 OECD countries analyzed is of 5%, more information may be found in Mercer Study – “An Ideal Retirement System”, Appendix 2);
- The accumulated balance of P2 has the additional advantage that it may be inherited in case of decease. Pillar 1 pension is not inheritable.

Chapter 5 – The 10 principles of an ideal retirement system

To ensure the financial independence of elderly people it is necessary to establish a unitary framework, that must stipulate the role of the state in ensuring a minimum income for each citizen, but also flexibility and provide fiscal and investment facilities, so as the participation of contributors to be adequately stimulated. Furthermore, citizens need to be adequately educated to understand the importance of their participation to the retirement system, including all its components. It seems clear that the public pension system (Pillar 1) would not be able to ensure a decent standard of living in the long term for the elderly due to demographic reasons (ageing of population, migration, etc.) as manifest around the world or particular to Romania.

The financial burden to the state budget will become unsustainable in the near future. Therefore, making the active population aware regarding the necessity of timely accumulating financial resources through contributions to specialized pension funds becomes paramount. At the same time, it is important to mention that shifting from the full "pay-as-you-go" compulsory public pension system to a combined system that includes private pension funds (compulsory and optional) and the decrease of percentage in contributions to the state system mirrored by an equivalent increase in contributions to the other two pillars is a gradual process. In the first instance, this process would likely increase pressure on budget deficits coming from the public pensions system. However, the government needs to make every effort to continue and even accelerate this gradual shift, before those accumulated pressures have a major impact over the pensions paid and budget deficits. In so doing, authorities need to be aware of the 10 principles of an ideal retirement system, as they have been established internationally, within the study ordered by CFA Institute and drafted by Mercer in the year 2015: "An Ideal Retirement System". Herewith how Romania' retirement system is positioned currently regarding the 10 principles of financial independence:

1. The government must establish clear **objectives** for the whole retirement system, including the complementary roles of each pillar, and incorporate the provision of a minimum income to alleviate poverty amongst the aged population.

During the last years, we have seen in Romania a continuous attack on Pillar 2, and authorities have tried to directly compare the performances and utility of Pillar 1 (public pension) and Pillar 2. Therefore, the main objectives of the retirement system, including complementarity of the three pillars were not addressed correctly and transparently. On the contrary, it has been induced an ambiguity regarding the role of Pillars 2 and 3. The government aimed at maintaining its role as the (quasi)unique distributor of the social system compensations to the elderly, so that governing parties and politically elected local administrations maintain an important influence over this segment of voters.
For the Pillar 3, interest from individuals and regulatory institutions is still reduced, as the regulation afferent to this pillar is yet incomplete and not enough interest seems to be in place for its development.

2. A minimum level of **funding** should be made into a pension system for all workers with contributions by employers, employees and the self-employed, as well as for those of working age who are receiving certain forms of income replacement. In effect, this means every worker will have a retirement account with an entitlement to future benefits.

At this moment in Romania, only participants to Pillar 2 and Pillar 3 of the pension system have a personal retirement account, where their contributions to retirement are accumulated on a monthly basis. Pillar 1 functions on a "pay-as-you-go" principle, that is contributions paid through employers are dispatched directly to the state budget. From the same state budget account are paid public pensions for retirees. Therefore, Pillar 1 does not employ the characteristics of a fund where amounts are accumulated, instead, money paid by current active people pay for current retirees. Therefore, benefits received by any retiree depend on contributions made by workers at the respective moment in time and the supplementary financing from the state budget as needed, to cover for the deficit due to insufficient contributions. Consequently, retirees do not have the certainty of an accumulating account from which pensions are disbursed, but depend on annual budget allocations for Pillar 1 pension system.

3. There should be cost-effective and attractive **default** arrangements, both before and after retirement, for individuals who do not wish to make decisions.

Participants to the public pension system (Pillar 1) have currently a single participation option as stated in the pensions law and applicable to their specific situation. At the same time, participation to Pillar 2 is strictly regulated and there is no possibility to choose how to participate to the system. Participation to Pillar 2 is compulsory and non-differentiated, for all those to fulfil the required criteria as participants. Pillar 3 participation is voluntary and depends on the employer, but there are no options in place for the participant. Therefore, all eligible participants are treated according to a standard participation option, with no possibility to choose an alternative path.

4. The overall administration and investment **costs** of each pension arrangement should be disclosed with some competition present within the system to encourage fair pricing.

This principle is complied with by Pillar 2 compulsory pension funds and Pillar 3 optional pensions, in which cases there are more managers in place and implicitly a competitive market, total transparency of costs and investments performance, within the (rather strict) legal framework of applicable legislation. For Pillar 1 pensions, transparency criteria and competition are not fulfilled. Amounts collected are not cumulated in a special fund and are not invested; they are used to make payments for existing retirees and in the case excess funds are available, those amounts are transferred to the state budget for other usages.

5. The retirement system must have some **flexibility** as individuals live in a range of personal and financial circumstances. This flexibility includes recognizing that retirement will occur at different ages and in different ways across the population.

The flexibility of the pension system is limited to the provisions of the pensions law, meaning the computation methodology of the public pension based on the pension point, as a function of the level of contribution and contribution period. Accommodation to specific circumstances and particular financial needs of each participant has not been envisaged by the current legislative framework.

6. The benefits provided from the system during retirement should have an **income focus** but permit some capital payments or withdrawals during retirement, but without adversely affecting overall adequacy.

The current legal framework state for public pension benefits only monthly incomes, to which the beneficiary or in some special conditions (inheritance pension) their inheritors are entitled. Pillar 2 and Pillar 3 pension systems might include also contributions and withdrawals of capital, but in the strict legislative framework currently in place, those provisions are inexistent.

7. Contributions (or accrued benefits) at the required minimum level must have **immediate vesting and portability**. These accrued benefits should only be accessible under certain conditions, such as retirement, death or permanent disability.

This type of provisions is largely included in the legislation of Pillar 2 and Pillar 3 pension funds, but they do not apply to the current structure of public pensions (Pillar 1) except for restricted manners and in special cases (for example, inheritance pension or disability pension). A unified approach of using contributions and of cases when such contributions are vesting would be advisable, in order to offer all contributors an equal treatment according to the law.

8. The government should provide **taxation support** to the funded pension system in an equitable and sustainable way, thereby providing incentives for voluntary savings and compensating individuals for the lack of access to their pension savings.

Pillar 1 and Pillar 2 pension plans display a compulsory character, therefore fiscal facilities offered to investments under Pillar 2 pension funds only comply with the best practices at European Union and at an international level, without being savings incentives by themselves. Fiscal facilities offered to both employees and employers in Pillar 3 pension funds were insufficient to stimulate a massive use of this optional savings system. It would therefore be advisable the existence of a coordinated information effort, stability in the legal framework regarding fiscal facilities offered, and further stimulation of the Pillar 3 optional pension system. In this regard, the annual EUR 400 fiscal incentive available to employers and EUR 400 to employees should be increased, in order to encourage savings by workers with average and above average incomes. The EUR 33 monthly fiscal incentive is clearly too low for those workers. Lately, authorities tended to hint participants on the primary role of Pillar 1 pension (public pension) and to marginalize the other two pillars at both legislative level, and public debate.

9. The **governance** of pension plans should be independent from the government and any employer control.

This principle is observed by private pension fund managers, who administer pension funds under Pillar 2 and Pillar 3. For the public pension system, management of amounts received as contributions and paid to retirees, and drafting the legal framework of the entire pensions system administration (including all three pillars), the leading regulatory and administrative function belongs to the Ministry of Labor and Social Justice. Therefore, the management system is political and owned by the government.

10. The pension system should be subject to **appropriate regulation** including prudential regulation of pension plans, communication requirements and some protection for pension scheme members.

This principle is mostly observed and is in line with EU norms regarding the pensions sector. However, there are still missing spots in legislation – especially regarding distribution of rights after retirement for Pillar 2 and Pillar 3 pensions – and some restrictions and limitations in investment opportunities and other technical aspects, which deviate from best practices at European level. Regarding the distribution/ payment part of pensions, it is necessary for drafting and approval of the Law of payment of private pensions, which would regulate payments after retirement. Currently, such payments are made as either a bulk payment or in equal installments for a maximum of 5 years. Legislation should offer pension providers and retirees wider freedom in choosing their type of pension payment (as annuity or perpetuity).

Another relevant aspect is that current legislation differentiates among participants from the standpoint of payment option taxation. If the bulk payment is chosen whether that amount is higher than the minimum tax-exempt amount, income tax is payable on the respective amount; whether the installments option is chosen, no income tax is paid for pension revenues.

What can you do!

Firstly, it is important to understand that our financial independence at retirement depends on our actions (saving and investing) that we take during our active working years. A prudent approach, for a person of generation X (born approximately between years 1961 – 1980) or younger in planning their saving is starting from the hypothesis that at retirement the public pension, whether it would exist at all, would likely only ensure minimum subsistence conditions for the individual. Moreover, they would likely receive that payment at a much elder age than currently. Therefore, when planning for consumption and savings patterns, a prudent approach is simply ignoring public pension income and concentrate on alternative income sources.

CFA Society Romania, within its financial education campaign "Generation I", the financial independent generation, has identified a set of 10 rules that each of us might understand and actively apply, whether pursuing their financial independence:

1. Tell me how you spend your money so I could tell you who you are: expenses tracking

Whether we monitor on a monthly basis how we expend our financial resources or in other words, when we keep track of our expenses, we would notice some interesting things. For example, how much we spend on things we don't actually need, or how much we could allocate to our real priorities. Keep track of your bills, use a monthly report of your banking transactions, every little expense counts! Without clear evidence of those expenses, it is difficult to get a birds' eye picture of why we spend too much money.

2. Choose actively where you allocate your resources: monthly expense budget

After we have established how much we really need to spend and how much is wasted, the next step is drafting a monthly expense budget. Experiment using a few formats, from the classic budget drafted on your agenda – our grandparents' way of budgeting – up to electronic formats from the Internet. At that point, you wish to have a birds' eye on the main areas where your money is spent.

3. Be prepared for tough times: save part of your income every month

At this point we know how much we spend and how much it is necessary to spend; we also know that saving, like all our life, is not smooth. Part of your income should be allocated to saving. There are numerous banking, investments and insurance products specially created for this purpose. Talk to your bank's representatives or advisor in order to find the most appropriate solution.

4. Purpose of saving: stop and ask yourself "what for?"

When speaking about resources, nothing should be random. For what do we save? When we reached the correct answer, we would also understand where and how much to allocate, in line with our priorities and our short and long-term objectives.

5. Use what others have already mastered: dedicated saving instruments

Specialists have already developed countless saving products. You just need to get informed, and a specialist may help you further identify quicker the financial instruments appropriate to you.

6. Technology as an independent resource: savings automation

You don’t have to dedicate precious time every day to saving. Search properly and use those applications that help you automate the process. Those applications would help you monitor the evolution of your resources easier.

7. Invest wisely: portfolio diversification

Investments, however certain they might look, may surprise us. That doesn’t mean we should not invest, on the contrary. Investment portfolio diversification (instruments, currency, economic sectors or even countries) offers more chances for having multiple revenue sources that balance each other to avoid major disequilibrium, whether one of it collapses.

8. Take on risks, but remain prudent!

Evaluate carefully and test whether you need to take risks and when you should better stay prudent. The secret is to be constantly informed, updated with the latest economic evolutions. As the economy performs cyclically, those stages when you need to risk by investing and those when you would better stay prudent swing. When you decide to risk, talk to a specialist and he will help you with the best decision for you.

9. It is essential to know where to search: continuous information from professional sources is key

Education is a continuous process. What is valid today, might change tomorrow. Therefore, it is essential to construct a database of professional sources, that you constantly improve and use to inform yourself. Read professionals’ opinions, search competent opinions, look for accurate information sources.

10. The most important investment: timely re-valuation of your needs and priorities

Your most important investment is in yourself. Even whether you chose external sources to deposit your financial resources, revaluate from time to time your priorities: what moment of your life are you in? You may need a larger house, maybe you want to start a new business. Depending on those priorities, your needs also change, and your savings and investments need adjustments accordingly.

You can obtain more information from specialists, by accessing the website:

www.generatiaindependenta.ro

Appendix 1

Romania	EC (DG ECFIN) - EPC (AWG) 2018 projections							
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0.4	1.54	1.72	1.81	1.85	1.87	1.88	1.89
Life expectancy at birth								
males	11.8	71.8	72.9	75.4	77.8	79.9	81.8	83.6
females	9.4	78.9	79.9	81.8	83.6	85.3	86.9	88.3
Life expectancy at 65								
males	7.2	14.8	15.4	16.8	18.2	19.5	20.8	22.0
females	6.9	18.2	18.8	20.2	21.5	22.8	24.0	25.1
Net migration (thousand)	66.4	-63.8	-65.1	-51.1	-8.9	7.7	1.6	2.6
Net migration as % of population	0.3	-0.3	-0.3	-0.3	-0.1	0.0	0.0	0.0
Population (million)	-4.7	19.7	19.2	18.0	17.0	16.3	15.7	15.0
Children population (0-14) as % of total population	0.1	15.3	15.2	14.9	14.6	14.8	15.2	15.5
Prime age population (25-54) as % of total population	-9.4	42.7	42.7	37.6	33.8	32.5	32.9	33.3
Working age population (15-64) as % of total population	-11.8	67.1	65.4	63.2	58.6	55.2	54.1	55.3
Elderly population (65 and over) as % of total population	11.6	17.6	19.4	21.9	26.8	29.9	30.7	29.2
Very elderly population (80 and over) as % of total population	9.2	4.3	4.8	5.9	8.4	9.9	12.6	13.5
Very elderly population (80 and over) as % of elderly population	21.8	24.4	24.9	26.8	31.2	33.2	41.2	46.2
Very elderly population (80 and over) as % of working age population	18.0	6.4	7.4	9.3	14.3	18.0	23.3	24.4
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1.8	3.5	3.4	2.1	1.3	1.3	1.3	1.3
Employment 15-74 (growth rate)	-0.8	0.1	-0.2	-1.4	-1.1	-0.8	-0.4	-0.3
Labour input : hours worked (growth rate)	-0.8	-0.1	-0.4	-1.4	-1.1	-0.8	-0.4	-0.3
Labour productivity per hour (growth rate)	2.6	3.6	3.8	3.5	2.4	2.1	1.8	1.5
TFP (growth rate)	1.7	2.8	2.6	2.2	1.6	1.3	1.2	1.0
Capital deepening (contribution to labour productivity growth)	0.9	0.8	1.1	1.3	0.9	0.7	0.6	0.5
Potential GDP per capita (growth rate)	2.3	4.2	4.1	2.8	1.8	1.7	1.8	1.7
Potential GDP per worker (growth rate)	2.6	3.4	3.7	3.5	2.5	2.1	1.8	1.5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-4,906	13,193	12,563	11,356	9,983	9,003	8,480	8,287
Population growth (working age:15-64)	0.8	-1.1	-1.3	-0.8	-1.3	-0.8	-0.3	-0.3
Population (20-74) (in thousands)	-4,902	14,006	13,694	12,435	11,536	10,431	9,593	9,104
Population growth (20-74)	0.5	-0.7	-0.5	-1.1	-0.4	-1.0	-0.7	-0.2
Labour force 15-64 (thousands)	-3,262	8,650	8,377	7,439	6,412	5,824	5,547	5,387
Labour force 20-74 (thousands)	-3,255	8,808	8,531	7,623	6,705	6,074	5,746	5,552
Participation rate (20-74)	-1.9	62.9	62.3	61.3	58.1	58.2	59.9	61.0
Participation rate (15-64)	-0.6	65.6	66.7	65.5	64.2	64.7	65.4	65.0
young (15-24)	0.9	28.2	29.1	30.0	29.0	29.2	29.1	29.1
prime-age (25-54)	-0.6	81.9	81.5	81.0	81.1	81.5	81.4	81.3
older (55-64)	6.7	44.0	47.5	51.5	49.9	49.7	51.4	50.7
Participation rate (20-74) - FEMALES	-2.5	53.2	52.0	50.6	47.6	48.0	49.8	50.7
Participation rate (15-64) - FEMALES	-1.8	56.1	56.6	54.9	53.2	53.9	54.7	54.4
young (15-24)	1.1	21.9	22.9	23.6	23.0	23.1	23.0	23.1
prime-age (25-54)	-2.5	72.3	71.3	69.5	69.2	69.9	69.8	69.8
older (55-64)	3.9	34.2	36.0	40.8	37.9	36.9	38.6	38.1
Participation rate (20-74) - MALES	-1.5	72.8	72.8	72.1	68.6	68.4	70.0	71.3
Participation rate (15-64) - MALES	0.8	74.8	76.5	75.8	75.0	75.3	76.0	75.6
young (15-24)	1.1	34.1	35.1	36.2	35.1	35.3	35.1	35.2
prime-age (25-54)	1.9	91.0	91.2	91.9	92.5	92.9	92.9	92.9
older (55-64)	8.2	54.9	59.9	62.2	61.8	61.9	63.8	63.1
Average effective exit age (TOTAL) (1)	0.1	63.2	63.2	63.3	63.3	63.3	63.3	63.3
Men	0.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0
Women	0.2	62.4	62.4	62.6	62.6	62.6	62.6	62.6
Employment rate (15-64)	-0.6	61.6	63.3	61.5	60.3	60.7	61.4	61.0
Employment rate (20-74)	-1.8	59.4	59.4	57.9	55.0	55.1	56.6	57.6
Employment rate (15-74)	-2.0	55.7	55.9	54.6	51.7	51.7	52.9	53.7
Unemployment rate (15-64)	0.1	6.1	5.1	6.2	6.2	6.2	6.2	6.2
Unemployment rate (20-74)	-0.1	5.5	4.6	5.6	5.4	5.4	5.5	5.5
Unemployment rate (15-74)	0.0	5.9	4.9	5.9	5.8	5.8	5.9	5.9
Employment (20-74) (in millions)	-3.1	8.3	8.1	7.2	6.3	5.7	5.4	5.2
Employment (15-64) (in millions)	-3.1	8.1	7.9	7.0	6.0	5.5	5.2	5.1
share of young (15-24)	1.4	6%	6%	6%	7%	7%	7%	7%
share of prime-age (25-54)	-4.2	80%	80%	74%	73%	75%	76%	76%
share of older (55-64)	2.8	14%	13%	20%	20%	18%	16%	17%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	0.6	20.0	18.4	24.2	24.8	23.1	20.3	20.6
Old-age dependency ratio 15-64 (3)	26.6	26.3	29.6	34.7	45.7	54.2	56.7	52.8
Old-age dependency ratio 20-64 (3)	29.8	28.6	32.2	37.6	50.1	59.6	62.6	58.4
Total dependency ratio (4)	31.7	49.1	52.8	58.2	70.6	81.1	84.7	80.8
Total economic dependency ratio (5)	48.0	134.0	133.4	147.2	165.6	180.6	184.9	182.0
Economic old-age dependency ratio (15-64) (6)	42.4	39.1	43.3	52.3	69.3	83.0	86.7	81.5
Economic old-age dependency ratio (15-74) (7)	39.8	37.8	41.8	50.3	65.0	78.0	82.1	77.6

Romania	EC (DG ECFIN) - EPC (AWG) 2018 projections							
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	0.7	8.0	7.3	6.6	7.7	8.7	8.9	8.7
Of which : Old-age and early pensions	0.7	5.9	5.4	4.9	5.9	6.7	6.9	6.7
Disability pensions	0.0	0.6	0.6	0.7	0.7	0.7	0.6	0.6
Survivors pensions	0.2	0.4	0.4	0.4	0.5	0.6	0.6	0.6
Other	-0.2	1.0	0.8	0.6	0.7	0.7	0.8	0.8
Earnings-related pensions (old age and early pensions), gross	0.7	5.9	5.4	4.9	5.8	6.7	6.9	6.6
Private occupational pensions, gross	:	:	:	:	:	:	:	:
Private individual pensions, gross	1.1	0.0	0.0	0.2	0.5	0.8	1.0	1.1
New pensions, gross (Old-age and early pensions)	0.0	0.2	0.1	0.1	0.2	0.2	0.1	0.1
Public pensions, net	0.9	7.7	7.2	6.6	7.6	8.6	8.8	8.6
Public pensions, contributions	0.3	5.6	5.8	5.4	5.2	5.3	5.5	5.9
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	2.6	96.3%	98.9%	98.9%	98.9%	98.9%	98.9%	98.9%
Pensioners (Public, in 1000 persons)	-48	5,152	5,186	5,131	5,527	5,627	5,467	5,104
Public pensioners aged 65+ (1000 persons)	424	3,537	3,640	3,593	4,007	4,307	4,315	3,961
Share of pensioners below age 65 as % of all pensioners (Public)	-8.9	31%	30%	30%	28%	23%	21%	22%
Benefit ratio % (Public pensions)	-9.5	35.5	31.9	26.6	25.8	25.8	25.9	26.0
Gross replacement rate at retirement % (Old-age earnings-related)	-0.7	30.2	31.6	31.5	29.9	30.4	30.2	29.5
Average accrual rates % (new pensions, earnings related)	:	:	:	:	:	:	:	:
Average contributory period, years (new pensions, earnings-related)	1.5	31.0	31.2	32.1	31.5	32.3	32.8	32.5
Contributors (Public pensions, in 1000 persons)	-1,086	5,591	6,249	5,429	4,728	4,364	4,295	4,506
Support ratio (contributors/100 pensioners, Public pensions)	-20	109	121	106	86	78	79	88

Appendix 2

In 2014, „Melbourne Mercer Global Pension Index” has compared the retirement revenue systems of 25 countries around the world based on an Index. In each country, the value of the Index has been determined based on a set of 50 questions divided by sub-indices: adequacy, sustainability and integrity.

The table below compares some of the characteristics outlined in the „Ten Principles of an Ideal Retirement System” with real data for the best five retirement systems and an average score for the weakest systems of the 2014 report regarding that Index.

Country	Coverage[1]	Assets[2]	Financing through contributions[3]
1 Denmark	83.7%	173.2%	12.0%
2 Australia	68.5%	96.7%	9.5%
3 Netherlands	88.0%	155.4%	8.0%
4 Finland	74.2%	88.0%	4.7%
5 Switzerland	70.5%	113.7%	9.0%
Average of weakest five systems[4]	22.1%	22.3%	5.0%
Romania[5]	80.9%	5.06%	3.75%

Notes

1. What proportion of the active population participates to private pension funds?

2. What is the level of pension funds assets as a percentage of GDP?

3. What is the minimum compulsory contributions level from pensions, as a percentage of revenues?

4. Results from China, India, Indonesia, Japan and Korea.

5. Data from A.S.F. and I.N.S. for year-end 2018.