THE DISTRIBUTION PHASE AND THE SHORT-TERM RISKS FOR THE UNIVERSAL PENSION FUNDS IN BULGARIA

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Abstract

The newly adopted legislation that regulates the pay-out phase for the universal pension funds in Bulgaria and the continuously rising minimum amount of the pension benefit due by the first pillar of the system started to distort the incentives for the insured individuals in a surprising way. Those with small amount of savings are more interested to stay within their pension fund than those who were able to accumulate bigger amount during the accumulation period. The current research is trying to put some light on this strange situation. The first part of the paper describes some specific moments from the new regulation that concern the distribution phase and the second part provides some estimates about individuals from different income groups and the probability of choosing to stay in their pension fund and not to transfer their savings into the first pillar of the system. The paper concludes with some recommendations about future reforms that could strengthen the pension system in the country.

Key words: *pension funds, distribution phase, investment results, risks*

JEL: *G11, G12, G22, G23*

1. The Pay-out phase for the universal pension funds in Bulgaria – specifics and short-term challenges

The universal pension funds in Bulgaria have been gradually entering the mature state of their development. After two decades of accumulating resources, they went into the distribution phase in the late 2021. The start of this new stage is marked with some new risks and challenges both for the pension funds and for the insured individuals. According to Blake (2006) insured individual bears a number of risks in the phase of distribution: interest – rate risk, inflation risk, income risk. Rocha and Vittas (2010) define some other risks, among them – longevity risk (the risk of outliving the accrued resources), investment risk, liquidity risk, bequest risk and bankruptcy risk. Asher and Nandy (2006) point also as a specific problem survivors' benefits and disability insurance since "life-time labour force participation of women is relatively low" in developing countries such as India. Szczepanski and Brzeczek (2013) mention also market liquidity risk regarding those countries with developing financial markets.

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All these risks, if realized, could affect adversely the amount of pension benefit granted to the insured individual. In case of mandatory insurance, as it is in Bulgaria, the State also bears specific responsibility. It must introduce right regulation and then constantly monitor pension funds to observe and keep the rules. In this sense, Pandurska (2018) rightly notes that after the reform made in 2015[2] many insured individuals have faced the dilemma whether to stay in their chosen pension fund or to transfer their accumulated resources into the first pillar of the system. That is a typical example of a normative change that raises the risks and concerns about the system, though the initial idea is to make the system more flexible and protect those insured individuals with minor savings. Daneva (2018) also stresses on the right regulation concerning the individuals' freedom of choice on the risk profile of the portfolio of managed assets. The so called multifund pension system has been discussed for many years in the country but still not introduced in practice. The reform made in Bulgaria in the early 2000's followed the example of several countries in Central Europe, mostly that of Hungary (1998) and Poland (1999). Gochev and Manov (2003) point that the new structure of the pension system should incentivise young generations to take care of their own future. Unfortunately two decades after the reform, pension insurance is not so popular among the new generations as it was expected. The fact that people are allowed to save for a supplementary pension benefit in a specially structured institutions is not enough to popularize this type of insurance. There are also some other drawbacks that should be taken into account when assessing the overall performance of second and third pillars of the pension systems. Zukowski (2013) acknowledged that a few countries that reformed their pension systems in the late 1990's scaled back to a certain extend their fully funded pillars. Hughes (2013) also notes that the example of Ireland of introducing fully funded personal pension accounts is not satisfying. In addition, Bielawska (2015) stresses on some difficulties that these types of systems have in many of the countries. In this sense are also the remarks of Casey (2013), Vostatek (2013) and Sebo and Virdzek (2013). However, despite the various obstacles in the accumulation period, Bulgarian fully funded universal pension funds reached the state of paying pension benefits to the insured individuals. But at this stage it is expected some new challenges to appear, and their right addressing would be crucial for the future of this type of pension schemes. The basic aim of the current paper is to identify and describe these new risks and challenges in the Bulgarian case, to evaluate them and to recommend certain policy changes that could made the funds viable in the middle term. The methods used in the research are mainly descriptive, comparative and statistical analysis.

The beginning of the pay-out phase in Bulgaria has been accompanied by a very dynamic economic environment. The pandemic crisis, Russian invasion in Ukraine, energy crisis and high inflation are factors that affect seriously public finances and the pension system which accounts for almost a quarter of the public expenditures in Bulgaria. The second pillar

[2] In 2015 the insured individuals were given the option to transfer their accumulated resources from the second pillar pension fund into the pay-as-you-go part of the pension system.

of the pension system in the country was thought to be a supplementary part of the whole pension system thus making many of the decisions taken about pay-as-you-go part of the system strongly affect the fully funded part of it. Distribution phase of the pension funds concerns the payment of the benefit. The last depends strongly on the amount accumulated into one's individual account towards the date of retirement. However, the exact amount of the benefit is influenced by many factors, for example, the way, the technical interest rate is determined; whether individual's sex influences the pension amount (women live longer than men); whether accumulated resources are inherited if individual dies soon after he/she is granted the benefit etc., etc. These are details that had to be regulated by the new legislation and they are common to all defined contribution pension schemes that operate around the World. In Bulgaria, however, there is one specific element that concerns only the system in the country – it is the way the pension benefit due by the pay-as-you-go part of the system is reduced. That is an important factor because it has a potential to ruin the whole structure of the pension system if the amount taken from the benefit due by the state is higher than the one determined as a supplementary benefit by the universal pension fund. It's worth mentioning that the role of the universal pension funds in Bulgaria is considered to be twofold still from the very beginning of the pension reform made in the early 2000's. First, they are seen as institutions that provide additional payment towards insured individuals and in this way, they support the process of reaching replacement ratios more adequate to the preretirement income of the pensioners in the long term (Gochev, Manov 2003), (Kirov 2010). Second, they are assumed as structures that are expected to waive part of the financial burden laid on the pay-as-you-go pillar of the system[3] (World bank, 1994). The last has been experiencing constant deficits for decades mainly due to the deteriorating demographic structure and the aging of the population – two factors that are detrimental to the pay-as-you-go part of the system. The wish to gradually relax the financial condition of the first column of the system is in the base of the adopted controversial procedure of reducing the pension benefit to those individuals who have individual account into a pension fund. The initial regulation required the pension benefit due by the pay-as-you-go pillar to be reduced by a coefficient roughly equal to the ratio between the amount of the contribution due for the second and that for the first pillar of the system. That was a regulation considered by pension fund industry as quite unfair especially for the first cohort of retirees[4]. There are at least two reasons for this assertion. First, those who were born during the first half of 1960's were in their 40's in 2002, when universal pension funds started activity. This means that a significant part of their insurable period had been passed before they started to pay contributions into their pension fund. Second, the adopted procedure of estimating the ratio between the contribution

[3] The Social security code (the main normative act that regulates the whole pension system in Bulgaria) has determined the exact way of reducing the pension amount due by the first pillar of the system since its first issue in 1999

[4] The first cohort of retirees are women born in 1960

due for the second pillar of the system and that for the first one doesn't take into account the huge deficit of the state pension system.

Table 1. Budget of the State PAYG Pension Fund (thousands of euro)

Year	Revenue	Expenses	Deficit	Year	Revenue	Expenses	Deficit
2002	1 053 438	1 507 915	-30,14%	**2012**	1 500 770	3 564 282	-57,89%
2003	1 236 585	1 600 872	-22,76%	**2013**	1 692 897	3 850 580	-56,04%
2004	1 285 491	1 763 583	-27,11%	**2014**	1 723 721	3 974 404	-56,63%
2005	1 236 399	1 946 351	-36,48%	**2015**	1 780 841	4 095 209	-56,51%
2006	1 187 306	2 129 118	-44,23%	**2016**	1 941 680	4 271 086	-54,54%
2007	1 317 640	2 293 997	-42,56%	**2017**	2 230 717	4 382 906	-49,10%
2008	1 560 631	2 597 717	-39,92%	**2018**	2 610 417	4 657 449	-43,95%
2009	1 716 268	3 216 613	-46,64%	**2019**	2 980 829	4 934 954	-39.87%
2010	1 333 735	3 448 400	-61,32%	**2020**	3 052 245	5 296 494	-42.37%
2011	1 576 099	3 440 775	-54,19%	**2021**	3 611 917	6 557 836	-44.92%

Source: National Social Security Institute, www.noi.bg

The figures of the above table show that the deficit of the state pension system is significant for each of the years between 2002 and 2021. The registered shortage is financed by a generous subsidy transferred from the state budget. This means that the "real" contribution for the first pillar of the system is several times higher than the one used for the estimation of the reduction coefficient. Before the start of the distribution phase in Bulgaria, the regulators took into account the first mentioned factor and they changed the legislation so that to reflect the shorter period of time for which women born in 1960's have been insured into a private pension fund but they didn't pay attention to the second mentioned one. However, the reduction coefficient was lowered from roughly 20% to a level of around 10%. That was a crucial change that made possible pension funds to enter the pay-out phase without turbulence. Those insured individuals without missing periods of paid contributions are motivated to stay in the pension fund and not to transfer their resources into the first pillar. The decision was important because it showed that pension funds can fulfill their rule if legislation treats them fairly. The proper regulation is of utmost importance if the state really wishes to encourage people to save and to rely on these savings during their retirement.

At the start of the distribution phase another much more complicated issue appeared on the surface. It is well known that one of the most important risk factors for the fully funded pension system is the rate of inflation. Keeping purchasing power of money is important for all types of pension schemes but it is expected that pay-as-you-go pension systems tend to manage this type of risk easier (Davis 1995). Fully funded pension schemes are supposed to realize yield higher than the reported inflation in order to increase the savings of the insured individuals in real terms. The start of the pay-out phase in Bulgaria coincided with globally unstable economic environment where inflation started to create troubles for policymakers after a

prolong period of extremely loose monetary policy followed by the main central banks (mostly Fed and ECB). At the same time, in Bulgaria, the unstable situation was fostered additionally by the political crisis which hit the country in 2021. The mixture of rising inflation and extremely volatile political environment provoked unprecedented rise in pension benefits in a period of couple of months. It's interesting to note that pension benefits that rose the most are those with the minimum amount.

Table 2. Minimum, average and maximum amount of length of service and old age pension benefit due by the state pay-as-you-go pension system

Period	**Min. amount of length of service and old age pension benefit (in levs)**	**Min. amount of length of service and old age pension benefit (in euro)**	**Rise:**
01.01.2021 – 24.12.2021	300	153.39	
25.12.2021 – 01.07.2022	370	189.18	18.92%
01.07.2022	467	238.77	20.77%
Period	**Average amount of length of service and old age pension benefit (in levs)[5]**	**Average amount of length of service and old age pension benefit (in euro)**	**Rise:**
01.01.2021 – 24.12.2021	486,50	248.74	
25.12.2021 – 01.07.2022	573.00	292.97	15.10%
01.07.2022	580.50	296.80	1.29%
Period	**Max. amount of length of service and old age pension benefit (in levs)**	**Max. amount of length of service and old age pension benefit (in euro)**	**Rise:**
01.01.2021 – 24.12.2021	1 440	736.26	
25.12.2021 – 01.07.2022	1 500	766.94	4%
01.07.2022	2 000	1 022.58	25%

Source: ww.noi.bg (National Social Security Institute), own calculations

The factors that influenced this significant increase of the first pillar pension benefits are: the rise of the minimum and maximum amount of the benefit and the serious increase of the weight of one year[6] of insurable period in the formula, used for estimating the exact amount of the benefits. The rise of the pension benefits due by the pay-as-you-go pillar of the pension system could have some unexpected consequences for the fully – funded part of it. Surprisingly it stimulates the insured with small accumulations to stay in their pension fund and those with

[5] The average amount of the pension benefit in 2022 is based on preliminary estimations

[6] The weight of each year of insurable period in the formula used for the estimation of the pay-as-you go benefits is raised from 1.2% to 1.35%

larger accumulations to flee and transfer their resources into the first pillar of the system. The basic reason for this is that the increase of the minimum amount is done mostly on populist grounds, provoked by the inflation rate, but far away from the level of contributions paid by the insured individuals throughout their working careers.

2. The Choice between fully funded and pay-as-you go pension system in Bulgaria – short-term incentives for individuals from different income groups

The choice between fully funded part of the system and the pay-as-you-go one is very serious for all individuals whose retirement is coming close. The choice must be made at least 5 years before reaching pension age and it depends strongly on the amount of the pension benefit due by the first and by the second pillar. Under the current normative rules, it is possible the combined pension benefits due by both pillars to be in smaller amount than benefit granted only from the first pillar. In this case, the insured individual must have transferred the accumulated resources from the pension fund into the pay-as-you go pillar.

If estimated on the adopted pension formula, the amount of the benefit for individual who has contributed on the minimum amount of insurable income throughout his/her whole working life cannot exceed 262 levs per month (133.96 euro per month). The exact assumptions are shown in the next table:

Table 3: Estimated pension amount of individual who have contributed on the minimum insurable income[7]

Start of working career	**01.01.1985**
End of working career	**31.12.2021**
Insurable period	**36 years**
Weight of each year in insurable period for estimating the benefit	**1.35%**
Individual coefficient	**0.46**
Reduced individual coefficient	**0.417**
Weighted average national insurable income for the last 12 months before retirement	**1 161.23 levs**
Pension amount	**261.97 levs**
Reduced pension amount	**235.54 levs**
Difference between full pension amount and reduced pension amount	**26.43 levs**

[7] The example concerns the retirement of a woman born after 31.12.1959 and completely corresponds to the adopted normative rules laid in the Social Security Code.

Source: own calculations

The estimated pension amount shows that it is not even closer to the minimum amount approved by the government in 2022 and valid since 01.07.2022. (467 levs) The difference with the full pension amount is 205.03 levs (78.26% higher than the amount corresponding to the paid contributions). The difference with the reduced pension amount is 231.46 levs (98.27% higher than the amount corresponding to the paid contributions). These individuals have strong motivation to stay into the pension fund because their first pillar pension amount cannot be granted in amount of less than 467 levs. In this case the pension received from the second pillar is not expected to fulfil any difference caused by a reduction of the amount of pay-as-you-go part of the benefit. It is going to be a pure bonus for these individuals. On the other hand, individuals who have contributed on the maximum level of insurable income[8] during their whole working period have strong incentive to cancel their insurance into the second pillar and to transfer their accumulated resources into the pay-as-you-go part of the system.

Table 4: Estimated pension amount of individual who have contributed on the maximum insurable income

Start of working career	**01.01.1985**
End of working career	**31.12.2021**
Insurable period	**36 years**
Weight of each year in insurable period for estimating the benefit	**1.35%**
Individual coefficient	**3.46**
Reduced individual coefficient	**3.08**
Weighted average national insurable income for the last 12 months before retirement	**1 161.23 levs**
Pension amount	**1 949.98 levs**
Reduced pension amount	**1 738.33 levs**
Difference between full pension amount and reduced pension amount	**211.65 levs**

Source: own calculations

The figures in the table above show that individuals who have contributed on the maximum amount of the approved insurable income must be granted at least 211.65 levs by their pension

[8] In Bulgaria, there is maximum amount of insurable income which is approved every year with the adoption of the Social security budget act. 3 400 levs (at around 1 700 euro) per month is the maximum amount in 2022

fund to stay in it. The calculations for the different pension funds indicate that depending on the realized yield throughout the years the pension amount varies between 126.96 levs and 149.71 levs. The significant increase of pay-as-you-go benefit is caused by both the rise of the weight of one year of insurable period (from 1.20% to 1.35%) and the increase of the maximum amount of the benefit due by the state (from 1 440 levs to 2 000 levs). These normative rule changes raise once again the question of how exactly to estimate the reduction coefficient for the benefits due by the first pillar of the system. The deficit of the state pension system is expected to rise significantly in 2022 and to exceed 50%. The pay-as-you-go scheme cannot afford such increase of pension benefits if it relies solely on the contributions paid by the current workers. It's fairly to admit that the resources collected via the general taxation and transferred into the state pension system must be taken into account when estimating the amount of reduction. If there is no change in the normative rules about this specific coefficient, pension funds are going to lose the individuals with the highest accumulations into their accounts.
The situation is quite the same for individuals who have contributed on the average amount of insurable income throughout their working careers.

Table 5: Estimated pension amount of individual who have contributed on average insurable income

Start of working career	**01.01.1985**
End of working career	**31.12.2021**
Insurable period	**36 years**
Weight of each year in insurable period for estimating the benefit	**1.35%**
Individual coefficient	**1.00**
Reduced individual coefficient	**0.897**
Weighted average national insurable income for the last 12 months before retirement	**1 161.23 levs**
Pension amount	**564.36 levs**
Reduced pension amount	**506.35 levs**
Difference between full pension amount and reduced pension amount	**58.01 levs**

Source: own calculations

The figures in the table above show that after the last changes in the pension legislation, second pillar pension funds have been put in quite unfavorable position. The estimated difference

expected to be covered by them is 58.01 levs. The various pension funds, depending on the yield realized throughout the accumulation period, can offer benefits in the range between 40.27 levs and 47.37 levs. So, it is really crucial pension legislation to be changed in a way that fully reflects the proportions of the paid contributions for the first and for the second pillar. Otherwise, insured individuals have strong incentive to abandon the fully funded part of the system and in this way to lose part of their benefits. The problem has a moral aspect too. Those insured that are within the low-income group of the society receive 205.03 levs per month more than they would have if the benefit were estimated in accordance with the paid contributions. At the same time they are not obligated to transfer their accumulated resources into the first pillar. For a period of 17.87 years (the average life expectancy after retirement in Bulgaria) and 2% technical interest rate per year the total amount granted by the state is 36 942.21 levs. One could easily speculate on this gift by asserting that these are money accumulated by individuals in high income group of the society who have transferred their resources into the state pension system. Depending on the yield realized by the various pension funds, the amount accumulated by an individual who has contributed on the highest possible insurable income throughout the accumulation period ranges between 26 398.63 levs and 29 656.51 levs. The issue with the regulation that creates right incentives for the insured individuals appears on the surface once again. The fundamental question is: does Bulgarian pension system need fully funded component at all? For the first cohort of retirees the amount accumulated into their individual account is comparatively small. This is mostly due to three basic factors: first, the accumulation period is at about half of that, what would be for individuals who started to contribute from the first day of their working careers; second, both the contribution rate and insurable income were significantly lower at the beginning of 2000's than they are in the last years (the contribution rate initially was 2% and it was raised to 5% in 2007, the average insurable income in 2002 was 259.75 levs, in 2021 it was 1 169.23 levs - 450% higher); third, the yield realized by pension funds on average was adversely influenced by two things: very conservative investment limits at the beginning of their activity and extremely low interest rates introduced and supported by the main central banks after the Global financial crisis of 2008 and the pandemic crisis of 2020. The influence of these tree factors is expected to gradually diminish in the next years. First, for the new retirees the insurable period in the second pillar is going to be longer with each consecutive year. Second, the income on which contributions are due is not expected to reach the low levels of 2002, although the pace of increase would be slower. And last, but not the least, interest rates could hardly go into a negative territory once again, something unseen in the monetary history and contrary to the economic logic. So, under certain normal circumstances, the accumulations into individual accounts are supposed to increase in the next years and the second pillar pension funds are expected to provide significantly higher benefits than they currently can. At the same time the financial health of the pay-as-you-go part of the pension system is expected to deteriorate even further. Bulgarian population is among the

fastest aging populations in Europe. Old age dependency ratio is continuously increasing mostly due to comparatively low birth rates, rising life expectancy and emigration rates that exceed immigration ones.

Table 6: Bulgarian population old-age dependency ratio for the period 2012 – 2021 (%)

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
27.8	28.5	29.3	30.2	31.1	31.8	32.5	33.2	33.8	34.1

Source: Statistics | Eurostat (europa.eu)

The negative trend in population dynamics is obvious and there is no sign of forthcoming significant improvement. The pay-as-you-go pension system will continue to struggle with constant deficits in foreseeable future and the burden on public finances is expected to rise further in next years. But there is one even more serious problem with the pay-as-you-go structure of the pension system in Bulgaria. It is related to the constant attempts of the existing political parties to buy votes through it. Organized in this way, the pension system is a kind of a hostage in the hands of politicians. It is not a pure coincidence that the biggest rise in pension benefits for decades took place in the years of strong political turbulence and three successive rounds of elections. Each ruling party, no matter how long the period for which it exerts its power, has been trying to convince pensioners to vote by generous promises for pension increases. The consequences of this policy are increasing state budget deficits that could disrupt public finances especially in an environment of currency board monetary system where the fiscal discipline is of utmost importance.

Table:7 State budget deficits as a % of GDP for the period 2015-2021 in Bulgaria[9]

2015	2016	2017	2018	2019	2020	2021
-1.9	0.3	1.6	1.7	2.1	-4.0	-4.1

Source: www.nsi.bg

The reported deficit is not due only to the increased pension benefits but surely, they play an important role for it. From this point of view, the answer to the question, whether fully funded second pillar of the pension system must be supported in future, is “yes”. The capital pension scheme is a supplementary part of the pension system, and it must continue to exist, not least because it gives unvaluable insight of how much the pay-as-you-go system has deviated from sound finances and how much it costs to the taxpayers including to the pensioners themselves. At the same time, second pillar needs some further reforms that would strengthen it and would raise the probability pension funds to provide benefits in correspondence with individuals’ expectations. First, it is urgent to change the procedure, currently used for reducing the benefits

[9] “+” means surplus, “-“ is for deficit

due by the first pillar of the system. The pension formula must take into account not just the ratio between the contribution paid for the first and for the second pillar but also the subsidy transferred from the state budget. This would remove the hesitation among insured individuals whether to stay in the second pillar or to transfer their resources into the first one. Second, it is crucial to allow universal pension funds to structure portfolios of assets with different risk profile. The Global financial crisis in 2008, the pandemic crisis and the turbulence on the financial markets caused by the Russian invasion in Ukraine are events that caused financial asset values to drop significantly for a short period of time. The recovery processes could continue for a prolong period of time which could ruin the trust of the insured individuals towards the funded pension system. This is much more true for those individuals who are very close to their retirement. They must be allowed to transfer at least part of their resources into conservative type of portfolio some years before reaching pension age. Third, the insured individuals must be allowed to transfer their resources into the first pillar of the system until the date of retirement, not until 5 years before reaching pension age. This would make system more flexible and insured individuals would be confident that they would not be put in disadvantage just because of improper choice.

Conclusion

Bulgarian universal pension funds entered distribution phase in 2021. After months of discussions on the exact normative rules, pension fund industry and the Financial supervisory commission reached an agreement on how exactly to start pay-out phase. However, months after beginning, it became clear that some future reforms are needed to strengthen additionally the funded component of the pension system in the country. The first and second pillar of the system are interrelated and populist decisions concerning pay-as-you-go column strongly affect the capital part of the pensions too. The wish of many politicians to trigger positive feelings among voters, make them neglect the financial health of public finances and approve expenses that deteriorate seriously the balance of the state budget. The funded component of the pension system needs a support in a form of regulations that create right incentives among insured individuals. Additional savings in a country with continuously worsening demographic structure can soften the expected hit on the public finances in the next decades. The pension system in Bulgaria even now absorbs almost a quarter of the resources collected via social security contributions and taxes. The situation is expected to deteriorate further in the next years. Strong funded pillar can raise the probability for the future generation retirees to receive pension benefits adequate to their pre-retirement income. However, some future research is needed to show how exactly this could be realized in the middle and in the long term.

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