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# The Multifund System – Is It an Option for Raising the Sustainability of The Bulgarian Pension System?

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**Abstract**

**Background:** Bulgarian universal pension funds have been operating for more than 20 years. They were established into Bulgarian pension system as supplementary elements whose basic aim was to strengthen the sustainability of the system in the long term. Following the recommendations of the World Bank (1994), the policymakers in the country introduced a fully funded defined contribution pension scheme where the investment risk is almost entirely borne by the insured individuals. Hence, low returns realized by pension companies during the accumulation phase detriment seriously the amounts of the pension benefits at the date of retirement. The second pillar pension funds are allowed to structure and manage only one portfolio of assets which could hardly suit the interests of both young and old scheme members. The investment horizon is crucial when it comes to the right mixture of assets in the investment portfolio.

**Purpose:** The purpose of the current study is to discuss some of the critical elements of multifund system as one of the tools for life cycle investing in pension insurance. The research is trying to shed some light on the important features that must be sorted out before introducing the scheme in practice.

**Methodology:** The methodology used throughout the paper embraces mostly comparative and descriptive analysis, but also deductive and systematic approaches were applied.

**Findings:** The basic findings of the research concern the way that must be addressed such issues as the number and structure of the managed portfolios, the distribution of those insured individuals that have not made an active choice about their preferred fund and the guaranteed mechanisms about the paid contributions.

**Practical Implications:** The article contributes to the ongoing debate about the exact structure and design of the multifunds as a possible elaboration of the universal pension funds in Bulgaria.

**Originality:** The research has a value for all those who work in the sphere of pension fund management and life cycle investing. By exposing the basic features and problematic elements of the multifunds, the research offers possible solutions for the establishment of a multifund system in Bulgaria.

**Paper type:** The article is a research paper. The first part compares the basic characteristics of multifunds in several countries already with such system. The second part recommends possible options for its introduction into Bulgarian practice.

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## INTRODUCTION

Long-term sustainability of the pension systems around the World has been discussed in many debates among policymakers, academics and ordinary people for many years. The unfavorable demographic trends caused by the declining fertility rates and raised life expectancy put under pressure almost every aspect of public finances, but the negative trends are most clearly seen within the pension systems. The national social security based primarily on pay-as-you-go principle where those who work today must contribute to finance the benefits of the current retirees has been forming sustainable deficits for the last years. Hence, almost every government in Europe has been undertaking reforms in this sphere in order to respond to this obvious negative trend. The adopted changes are both parametric and structural. The first group of reforms concern such processes as raising the pension age, increasing the number of working years for receiving full amount of pension benefit, removing variety of options for getting retired below the statutory pension age, etc. All these changes are undoubtedly important but not enough to put on a sustainable track the pension systems in the long term. Thus, a second group of reforms are gradually undertaken by many countries, mostly in Europe, whose basic focus is to relax part of the financial burden that currently falls on the pay-as-you-go part of the pension systems. The introduction of supportive elements based on a fully funded mechanism is a primary goal for many governments. The basic idea behind this type of reforms is clear – to incentivize and/or even oblige individuals to save additional funds during their professional careers so that to receive future pension benefit from saved resources and not from intergenerational transfer. The reforms of this kind were advocated by many official institutions: the World Bank (1994), OECD (2004, 2008), the European Commission (2010, 2012, 2021a, 2021b) etc. There were also a number of academic research papers especially in 1990's and early 2000's to propose reforms of similar character. For example, Davis (1995) describes the positive effects of fully funded pillars on the financial stability of a pension system that faces continuous population aging. Whitehouse (2007) also demonstrates that fully funded components into the pension systems could effectively support public pay-as-you-go structures and relax part of the financial burden in the mid and in the long term. Yermo (2012) also explores the effects of introducing fully funded components into pension insurance and takes the view that these additional structures may raise sustainability and improve adequacy of the system as a whole. Kirov (2010) and Daneva (2018) demonstrate how private pension systems contribute to the stability of the state pension systems and incentivize individuals to save additional funds for their future retirement income. Similar views also take Pandurska (2020), Manov and Gochev (2003). At the same time several countries in Central and Eastern Europe which reformed their pension systems by introducing fully funded pillars accomplished partial or full reversal reforms (Bielawska 2015). Some of the countries cancelled in full the insurance within the second pillar such as Hungary in 2011, others made steps to constrain the insurance in private pension funds. The most popular adverse reforms were related to reduction of the contribution rate, transfer of resources towards the first pillar of the system, delay of envisaged increase of the contribution rate, introduction of an option to leave the second pillar insurance, etc. The basic criticism about the private pension funds concerns the net return realized by the funds over the years and the possibility to ensure enough funds to finance benefit that satisfies insured individuals. Within the defined contribution pension schemes people face serious risks. For example, Blake (2006) enumerates several risks both in the accumulation and the distribution phase that directly affect the amount of the future benefit. Among them are interest rate risk, asset price risk, currency risk, longevity risk etc. Rocha and Vittas' work (2010) on the design of the payout phase in defined contribution pension schemes analyses such risks as liquidity risk, bequest risk, interest rate risk etc. Barembruch and Bielawska (2023) also show that investment performance is very important for attracting public support for the fully funded system in the long term. So on the one hand there is a common notion that private pension schemes are an important element of the pension systems that could relax part of the rising financial burden on them due to the obvious negative trend of population aging. On the other hand, there is a serious debate on how exactly to regulate these private structures to work efficiently and achieve results so that to protect the interests of the insured individuals in the best possible way. The situation becomes even more complicated if inflation is considered in the equation. The lost purchasing power of money is a very serious argument against any saving scheme whose rate of return is below the reported inflation. Emerging economies such as the economy of Bulgaria are expected to converge towards those of the western part of Europe, which means that, all other things been equal, the expected inflation may destroy the accumulated resources so that the received benefits to lag behind the expectations of the insured individuals. Antolin, Payet and Yermo (2010) pay attention to the importance of life-cycle investment strategies and conclude that this type of investment is beneficial for future retirees. Multifund system in pension insurance is one of the options in

life-cycle investing which has been applied in practice in many countries with defined – contribution pension schemes. It has been discussed for many in years in Bulgaria but still does not function in practice. The possibility of structuring portfolios with different risk profiles is seen as a good opportunity to raise the realized yield and at the same time to control the risk exposure during the different stages of one's life. The Bulgarian universal pension funds entered the pay-out phase in 2021, and it became obvious once again that insured individuals need this option to maximize the value of their savings towards the date of retirement. The current article is trying to evaluate the basic features of multifund system and to make certain implications about its introduction into Bulgarian practice. The first part of the research is dedicated to the most important elements of the multifund system by considering the experience of several countries in Central and Eastern Europe that have introduced such pension structure. The second part concerns the basic issues that must be addressed in case of introducing the scheme within the Bulgarian pension funds. The paper concludes with some recommendations for future reforms within the pension system in the country.

## THE MULTIFUND SYSTEM – BASIC FEATURES AND CHARACTERISTICS

In the late 1990's, early 2000's, structural and parametric reforms were implemented in the pension systems of many Eastern and Central European countries. Following the adoption of the three-pillar insurance model, the policymakers introduced and established additional elements (pillars) that complemented and enriched the existing pay-as-you-go systems. These new elements made possible the supplement of the traditional model based on a pay-as-you-go principle within which pension costs are covered by contributions paid by the working population. The innovation was that the new pillars of the pension system were constructed on a fundamentally different principle – fully funded - where each person's contributions are accumulated into an individual account and have the potential to grow as they are invested in certain financial instruments. This principle, unlike the pay-as-you-go one is characterized with a robust link between the personal contributions and the pension benefit that insured individual is expected to receive after retirement.

The present study is focused on the multifunds in Croatia, Poland, Lithuania, Latvia and Estonia Then, an analysis is made on the possibilities for introducing the model of life-cycle investing into Bulgaria.

### Croatia

The multifund system is already in operation in Croatia. The pension system in the country has embraced a classic three-pillar insurance model since 2002. So far, the multifund system has been introduced into the second mandatory pillar, which is considered a step forward in an effort to optimize the risk and return for the different cohorts of insured individuals.

Pension companies have been authorised to manage three categories of funds (A, B and C), each with different insurance conditions, investment strategies and guaranteed returns. The three types of funds are constructed with a life-cycle perspective, with the aim of providing insured persons with a choice of investment portfolios with different degrees of risk and return.

The highest risk fund is fund "A". The individuals who choose this investment category must have at least 10 years until retirement. The balanced fund category "B" allows participation of persons with 5 or more years until retirement, and the category "C", as the most conservative, is for persons with less than 5 years until retirement.

Croatian pension legislation[1] allows insured persons to change the risk profile of their fund once a year without a fee, as long as it is managed by the same pension company. It is also allowed to transfer the accumulated resources between the funds of the same category but managed by different companies. However, in this case the person pays an "exit fee". Persons who have not chosen the risk profile of their pension fund are allocated in accordance with the number of years until retirement. If pension age is 10 or more years away, individuals are distributed into Fund "A" - the most aggressive type of fund. If the period is 5 to 10 years, the insured are allocated into the balanced type of fund and in case of just 5 or less years until retirement they go into fund "C" - the conservative portfolio type.

The risk profile of each of the funds depends on the allowed investments in variable income instruments. The most aggressive type of fund can allocate up to 100% of the assets into corporate equities and units in collective investment vehicles. The balanced type of portfolio can have up to 80% invested in variable income instruments but at least 50% of the assets must be in government securities. The conservative portfolio type cannot have investments in equities and units in collective schemes.

An important feature in the existing regulation is that, regardless of which category of fund a person

[1] The Mandatory Pension Funds Act (2014)

is insured, he or she is guaranteed a minimum return based on the weighted average return[2], reduced by 12, 6 or 3 percentage points, for the A, B and C funds respectively. If the fund does not achieve the guaranteed return, the pension company must top-up the difference.

The investment regime of the three types of funds is strictly regulated both quantitatively and by eligible types of investment instruments.

**Table 1.** Investment regulations of the second pillar multifunds in Croatia

| Fund | Instrument | Limit |
|---|---|---|
| Conservative fund (C) | Government securities | Min.70% |
| | Corporate bonds | 10% |
| | Shares | 0% |
| | Collective investment schemes | 10% |
| | Alternative funds | 0% |
| | Bank deposits | 20% |
| | Bonds and shares issued by companies for infrastructure projects in Croatia | 35% |
| Balanced funds (B) | Government securities | Min.50% |
| | Corporate bonds | 30% |
| | Shares | 40% |
| | Collective investment schemes | 30% |
| | Alternative funds | 10% |
| | Bank deposits | 20% |
| | Bonds and shares issued by companies for infrastructure projects in Croatia | 35% |
| Aggressive funds (A) | Government securities | Min.30% |
| | Corporate bonds | 50% |
| | Shares | 65% |
| | Collective investment schemes | 30% |
| | Alternative funds | 15% |
| | Bank deposits | 20% |
| | Bonds and shares issued by companies for infrastructure projects in Croatia | 55% |

Source: Compulsory and Voluntary Pension Funds Act (2014)

**Poland**

In 1999 Poland introduced a three-pillar model of pension insurance, following that proposed by the World Bank. Subsequently, a number of additional reforms of the system have been undertaken, and nowadays the system has been transformed quite significantly.

The multifund system has only been implemented for the voluntary Employee Capital Plans (PPK[3]), which were introduced in 2019. The PPK is a long-term savings scheme in which employers, employees and the state participate with contributions for the benefit of the employees[4]. The funds are invested, and after the age of 60, the insured persons can use the amount in accordance with the conditions stipulated into the contract with the employer. Enrolment in the scheme is automatic for those aged between 18 and 55, but there is an option to opt out if the individual prefers so. Those aged 55 to 70 can also opt in, but on their own initiative.

The multifund mechanism for voluntary PPK plans is structured according to the life cycle stages of the insured person and the expected year of attainment of 60 years, which is the target date of the fund. For each insured person, depending on his age, an investment portfolio (fund) is constructed with a horizon of up to a certain year, in 5-year intervals - from 2025 to 2070. For example, the "2030 fund", because of the short investment horizon, is much lower risk as the shares in it cannot exceed 15 %, while for funds with a distant target date this share is much higher - up to 80 %.

[2] The benchmark is the weighted average return for each fund category over the last 3 years.

[3] In Poland, these funds are known as Pracownicze Programy Kapitałowe (PPK)

[4] In certain cases, the State may pay a lump-sum of around €60 to encourage voluntary participation

**Table 2.** Investments of the voluntary capital plans with life-cycle investing in Poland

| Fund | Instrument | Limit[5] |
|---|---|---|
| Voluntary capital plans with life-cycle investing | Shares | 10%-80% |
| | Real Estate | 0 |
| | Bonds | 20%-100% |
| | Collective investment schemes | 15%-80% |
| | Bank deposits | 20%-100% |

Source: Act on Employee Capital Plans (2018) and own research

**Baltic States**

At the beginning of the 21st century, the Baltic trio - Lithuania, Latvia and Estonia undertook intensive structural reforms of the existing pension model based solely at that time on the public pay-as-you-go principle. All of them established complementary elements based on individual pension accounts within two new pillars - a supplementary mandatory pillar (second pillar) and a supplementary voluntary pillar (third pillar). Over the years, the model in each of the countries has undergone various modifications in line with the realities of the general economic and political developments.

Lithuania has introduced two main types of investment schemes (funds) in the second pillar - an asset preservation pension scheme and a life-cycle investment scheme. The main objective of the Asset preservation fund is to protect the value of accumulated assets and minimize the investment risk. This requires a strategy focused on investments in low-risk instruments such as bonds, non-equity securities, shares of collective investment undertakings, short-term deposits. The maximum allowed investment in equities is 20%. In case of a life-cycle pension fund, the investment strategy is adapted to the life cycle of the participants, aiming at an optimal balance between risky and less risky assets, depending on the remaining accumulation period. The allowed investment in variable income instruments is 100%. By selecting the second type of fund, participants have an opportunity to optimize their savings. The pension insurance company chooses investment strategy by taking into account their age and investment objectives, and applies different approaches to retirement savings depending on individual needs and risk preferences.

**Table 3.** Investments of the second pillar multifunds in Lithuania

| Fund | Shares | Real estate | Bonds | Collective Investment funds | Bank deposits | Other |
|---|---|---|---|---|---|---|
| Asset preservation pension fund | 20% | 0% | 100% | 10% - in funds investing in shares;<br>20% - in funds investing in corporate bonds<br>100% - in funds investing in government securities | 100% | - |
| Life-cycle fund | 100% | 0% | 100% | 100% | 100% | 20% - in funds other than collective investment funds |

Source: Pension Accumulation Law (2019) and own research

Latvia is no exception in terms of the path chosen to reform its pension system - in 1998-2001 it introduced a three-pillar model and subsequently enriched it with a multifund investment principle. Pension fund managers have significant freedom in establishing different types of funds with different risk profile. However, the practice shows that three types of investment funds can be distinguished: Conservative, Balanced and Aggressive. The conservative fund is focused on investments in bonds and money market instruments, the balanced one invests up to 15% in equities and a minimum of 50% in bonds and money market instruments, while the aggressive funds follow an investment approach where up to 100% of their investments can be in equities. Latvian legislation does not prescribe exact percentage limits for each of the funds. It has just common investment limits that must be followed but the exact constraints must be formulated into the prospectus of each of the funds. It should be noted also that Latvian legislation does not envisage any type of guarantee about minimum returns. This means that insured persons and pension administrators must be significantly more responsible during the investment process.

[5] The exact percentage depends on the number of years until retirement

**Table 4.** Investments of the second pillar multifunds in Latvia

| Fund | Instrument | Limit |
|---|---|---|
| Conservative fund | Shares | 0% |
| | Fixed income securities | 100% |
| Balanced funds | Shares | 15% |
| | Money market instruments | Min.50% |
| Active funds | Shares | 100% |
| | Bonds | 100% |
| | Money market instruments | 100% |

Source: own research

The pension insurance model in Estonia was transformed from a one-pillar into a three-pillar model in the period 1998-2003, when two additional pillars based on individual accounts - mandatory and voluntary - were introduced to support the pay-as-you-go system. The multifund mechanism was introduced by offering investment pension schemes with three different risk profiles depending on the structure of the investment portfolio - conservative, balanced and aggressive schemes. Then the system was transformed by introducing the so called conservative and non-conservative funds. The conservative funds must have at least 80% of their assets in bank deposits, securities with investment credit rating and money market instruments. The so called non-conservative funds are allowed to invest in variable income instruments as much as they wish. In addition, pension investment accounts opened with banks were introduced in 2021, where any person insured in the second pillar can transfer his/her funds into such an account and manage it independently.

**Table 5.** Investments of the second pillar multifunds in Estonia

| Fund | Instrument | Limit |
|---|---|---|
| Conservative fund | Bank deposits, securities with investment credit rating and money market instruments | Min. 80% |
| Non conservative fund | Shares | 100% |
| | Real estate | 40% (max. 10% in 1 property) |
| | Bonds | 100% (max. 10% in one state) |
| | Collective investment funds | 100% |
| | Bank deposits | 100% |

Source: Investments Funds Act (2016) and own research

The examined countries have some similarities but also differences in their approaches towards the multifund system. The research made shows that all of the countries have at least 3 different types of funds. But the Baltic countries and Poland have introduced life cycle funds where insured individuals are divided into age groups and for each age group there is a specific fund. The age groups are formed by including individuals born in intervals from 5 to 7 years. For example in Lithuania the age groups are the following: 1996-2002; 1989-1995; 1982-1988; 1975-1981; 1968-1974; 1961-1967; 1954-1960. This makes 7 different pension funds with different risk profile, although the funds destined for those born between 1975 and 2002 have almost identical share of variable income instruments which makes them quite similar in terms of risk level. In Croatia the funds are just three and the normative rules are clear to what extent different funds may use variable income instruments as investment vehicles. The Baltic countries used to have similar legislation but after the reforms implemented in the last few years, they introduced life cycle funds where insured individuals are by default transferred into a fund which is considered as the most appropriate for their age. The reasons behind this type of reform lies primarily on the assumption that insured individuals in most of the cases do not act rational. They do not to choose the right fund by taking into account the investment horizon ahead and do not optimize the value of their savings towards the date of retirement. For example, young individuals tend to choose conservative portfolio types thus reducing the possibility to realize higher return in the long term and the old individuals take unnecessary high risks in the last few years before retirement trying to increase the value of their funds by risking significant decline of their assets without any good reason. So, the exact design and structure of the multifund system is quite important. It must serve adequately to the expectations and the needs of the insured individuals but at the same time it must protect them from taking unnecessary risks during the different stages of their lives. The right structure of the second pillar pension funds must take into account the changing investment horizon, the expected yield from the different asset classes, the expected inflation and the possibilities to introduce specific guarantees for the insured individuals who are the primary holders of the investment risk.

## OPTIONS FOR INTRODUCING THE MULTIFUNDS IN BULGARIA – THE BASIC CHALLENGES AND RISKS

Bulgarian pension system is a three pillar structure with mandatory first and second pillar and voluntary third one. The second pillar was introduced in the early 2000's as a fulfillment of the recommendations of the World Bank and the third pillar – the voluntary pension funds started a few years earlier, but their detailed regulations were adopted in the early 2000's so that to supplement efficiently the first two pillars of the system. The second and third pillar operate defined contribution schemes, structured on a fully funded principle. Still from the very beginning, the adopted rules allowed pension fund managers to construct and manage only one portfolio of assets. The investment regulations were very strict stipulating not only the asset classes but also the proportions of each asset class allowed to be used as investment vehicles. The pension fund managers were not only forbidden to structure different portfolios of assets but also, they were obliged to keep so conservative investment strategies that in the beginning they used to invest almost all their assets into government securities. These very strict investment rules were gradually relaxed during the next years. However, there were at least three reasons for such conservative investment regulations which were the basic obstacles for introducing multifund system during the following years. First, the lack of suitable domestic financial assets due to the undeveloped stock exchange. It is interesting to note that the illiquidity of the market could lead both to withdrawal from it and to entry to it. The last could be motivated by the possibility to control the changes in the asset prices especially in periods of strong market volatility at the external stock exchanges. Second, regulators with no experience of monitoring and controlling institutions of such type. In many cases, they may, at least, tolerate investment behavior not in the best interest of the insured individuals. Third, a society accustomed to receiving pension benefits only by the state has no interest in exerting external pressure on pension fund managers to keep best management practices. All these three arguments must be taken seriously into consideration when elaborating multifunds and their introduction in practice. However, multifund system has proved itself as a good option when considering life-cycle type of investment. The possibility to structure portfolios with different risk profile assumes and addresses the simple fact that insured individuals face different types of risk during their lives. The young people who enter for the first time the labor market and have an investment period of around 40 years are exposed to very different type of risk from those who are in their 60's and have just few years until retirement. When investment risk almost entirely falls on the insured individual, he/she should have investment behavior that raises the possibility of accumulating the greatest possible amount of assets at the end of the investment period, i.e. towards the date of retirement. It must be admitted that there is no guarantee that even if an individual has such behavior during the whole accumulation period, he/she would achieve such maximization. In reality, there are many external factors that may influence asset prices in an adverse direction without any opportunity to react effectively.

So, when deciding to implement multifund system, the policymakers must address effectively the exact number of the different asset portfolios and their exposure to the different asset classes. The practice of the different countries shows that portfolios may vary from just two (as is the case in Slovakia[6]) to seven and more (in Baltic countries). Their most important distinguishing feature among the different portfolio types is the share of variable income instruments allowed for investment. Variable income instruments could be corporate equities, units into mutual funds or some other type of collective investment schemes. The basic characteristic here is that income is not fixed, and it depends on the financial performance of the company or the scheme. So, in Bulgarian case, a variant with three different portfolios of assets can be considered as optimal. The reasons for this are the following: first, if an option of just two portfolios is assumed, it would not suit adequately all insured individuals. For example, if structured portfolios are conservative and aggressive, the system will miss the balanced portfolio in which many individuals may feel comfortable. If the system has just balanced and conservative portfolio types, then the aggressive type will be out of choice, although this may be the best variant for those with the longest investment horizon. In case of scenario without conservative portfolio those individuals who are close to retirement would be exposed to unnecessary high risk. On the other hand, if portfolio types are more than three, the management costs are expected to increase without any meaningful benefits for the insured individuals. The three portfolio types are also easy to explain by revealing their most significant advantages and disadvantages to the insured. Some of the analyzed countries in the previous chapter of the study, although having chosen the structure of more than three portfolio of assets, the actual investment strategies followed can also be grouped into three – conservative, balanced and aggressive as some of the established portfolios have quite identical share of variable income instruments.

The second important issue that must be sorted out concerns the exact construction of the different

[6] Since 2012 pension companies in Slovakia have been obliged to structure conservative and aggressive portfolios but with the option to structure as many other different portfolios as they wish.

portfolio types and their exposure towards variable income instruments. What should be the maximum limit and whether to have minimum threshold for this type of assets in the different portfolios? The practice in different countries is different and each of the variants has positive and negative features. The maximum limit is worth being high enough (between 80% and 100%) for the aggressive portfolio type since it is supposed to be the investment vehicle for those insured with the longest investment horizon. The historical performance of equity markets shows that yield realized on them is higher than the one achieved on bond markets but at the same time the volatility may also be significant (Brealey et al. 2007). However, in the long term it is important for the insured individuals to have this option thus raising the probability of realizing yield that exceeds the inflation rate.

The next important issue concerns the minimum amount of investments in variable income instruments. The adoption of minimum threshold aims to make clear difference between the portfolio types. For example, the conservative portfolios may include no investments in equities, but all other portfolios should have at least some minimum percentage in them that must be observed by all market participants. The balanced portfolios may have 20%-30% minimum and the aggressive ones may have 50%-60% at the lowest level. The idea here is straightforward – the level of risk in portfolios of one and the same type, managed by different pension funds should be approximately equal. If pension funds are allowed to structure three portfolio types, they must make a clear difference among them so that the insured individuals understand unambiguously where their savings are going. If there is no such rule the people in one pension scheme that have chosen balanced level of risk may find themselves in more volatile environment than some other persons that have preferred an aggressive portfolio type but managed by another pension company. The adoption of a minimum level of equity investments would guarantee that there would be no pension company that misleads insured individuals by structuring portfolios whose exposure to that asset type is lower than expected. Thus, seriously damaging the yield in the long term. On the other hand, regulation without minimum threshold for variable income instruments would allow pension managers to be more flexible in their investment decisions. This could be important in volatile environment in which an obvious crisis is coming. Under this scenario it would not be reasonable to stick to a high portion of equities when their values are expected to significantly drop in the near future. However, when it comes to Bulgarian reality it is worth having rules with lower limit of equity investments thus preventing fund managers from constantly neglecting the opportunities inherent to variable income assets. For the past 20 years pension fund managers in the country seemed to be quite conservative relying primarily on government securities whose yield is secure but low enough to compensate insured individuals for the inflation rate.

**Table 6.** Portfolio share in fixed and variable income instruments in universal pension funds in Bulgaria[7]

| | **2010** | **2015** | **2020** | **2024** |
|---|---|---|---|---|
| Government bonds | 23.22% | 49.52% | 57.61% | 59.52% |
| Corporate bonds | 21.17% | 13.52% | 9.51% | 8.01% |
| Mortgage bonds | 1.40% | 0.09% | - | - |
| Municipal bonds | 2.60% | 0.10% | 0.01% | 0.01% |
| Bank deposits | 21.52% | 3.31% | 0.85% | 0.76% |
| Other fixed income instruments | 3.02% | 2.39% | 1.66% | 1.07% |
| **Total fixed income instruments** | **72.93%** | **68.93%** | **69.64%** | **69.37%** |
| Shares in special investment purpose companies | 1.79% | 0.91% | 0.87% | - |
| Units in collective investment schemes | 11.85% | 13.91% | 17.86% | 14.62% |
| Other shares | 13.43% | 16.25% | 11.63% | 16.01% |
| **Total variable income instruments** | **27.07%** | **31.07%** | **30.36%** | **30.63%** |

Source: www.fsc.bg

The next crucial issue in the process of establishment of a multifund system is how to distribute insured individuals within the different portfolio structures. The primary option should be the people themselves to make informative choice which portfolio type would suit their interests in the most appropriate way. However, the historical experience not only in Bulgaria but in many other countries with mandatory fully funded pillars, shows that insured individuals are not quite interested in their insurance within the second pillar pension funds. A significant share of them doesn't even know the pension fund they have been saving for years, let alone the level of risk to which they have been exposed to. Under such a scenario, it is worth having a default option for those individuals who refuse to make an active choice. The experience of the various countries is different as some of them have preferred the most conservative portfolios as a choice number one, others have made balanced or aggressive portfolios as their primary option. The arguments for

[7] The data shown for 2010, 2015 and 2020 is towards the end of the year. The data for 2024 is towards 30.09.2024

the various default variants are different. However, maybe the most appropriate regulation is to transfer individuals' savings within the different portfolios in accordance with the age of the insured persons. Hence, those individuals with the longest period of investment (young individuals who have just entered the labor market) must go into the riskiest portfolio structure. This is the portfolio with the highest share of variable income instruments. Then gradually when a certain predefined age is reached, the individuals' savings go into less riskier portfolios. Surely, those individuals whose retirement is coming close should be directed into the conservative portfolio type, thus stabilizing the value of their investments some years before reaching pension age. The assumption here is that the most serious type of risk to which are exposed young individuals is the inflation risk. For a long period of time the lost purchasing power of money could significantly destroy the value of accumulated savings. Although volatile in the short period, investments in equities or units in collective investment schemes have a higher expected return than instruments such as government securities, corporate bonds or bank deposits. At the same time for individuals whose retirement is expected to be in the next 4-5 years it is reasonable to reduce the share of such investments and to rely more heavily on fixed income assets. There are variety of options how to transfer the resources among the different portfolios but maybe the most practical one and at the same time easiest to implement is to fix certain age and the whole amount of accumulated resources into one's individual account to be transferred into less risky portfolio. A variant, in which part of the resources is transferred and some other is left into the current portfolio is also reasonable but could lead to confusion among the insured and unnecessary high costs for the pension companies[8]. By structuring aggressive portfolios, pension managers would raise the expected return but at the expense of a higher level of risk. In order to protect the savings of the insured it is crucial to transfer them to lower risk portfolios some years before retirement. It is quite a discussive issue at which point (how many years prior to pension) that may happen. The experience of Bulgarian pension funds shows that for the past 22 years they faced two major crises. The first one was in 2008 after the Global financial crisis and the second one was in 2022, after the start of the interest rate increases undertaken by Fed and ECB. The number of years needed to restore the value of one pension unit after the first crisis was almost 5. The years needed to recover from the second crisis were expected to be between two and three[9], depending on the structure of the investment portfolio of the fund. Hence, the experience so far shows that the date of transferring resources into the conservative portfolio must be between 3 and 5 years. Any shorter period prior to retirement would significantly reduce the probability to restore the incurred loss. Surely the issue of losing money just before the period of transferring resources into the conservative portfolio type is a tricky one. In this worst-case scenario, the individuals could be allowed to stay within the aggressive portfolio type some extra time to restore some of the lost resources, but that must be their own well-informed choice. Whatever regulation in this aspect be adopted it could hardly eliminate all the risks to which are exposed insured individuals. Within the defined contribution pension schemes, they bear the investment risk and the adopted rules can only mitigate it. So, in Bulgarian case it seems reasonable to have regulation that obliges individuals to transfer their resources from the most aggressive portfolio type into the balanced one between 7 and 10 years prior to retirement and from the balanced portfolio type into the conservative some 3 to 5 years before retirement. In any case, insured individuals must have the option to stay within the portfolio of their own choice, but when a riskier option is preferred, there must be a specific procedure to follow so that pension companies are convinced that insured individual realizes the risk to which he or she is exposed to.

The last important issue that must be addressed when introducing a multifund system is related to the type of guarantees that insured individuals must have for the accumulated resources. Bulgarian legislation has adopted two types of guarantees – the first one concerns the value of the gross contributions paid by the insured individuals throughout their insurance period. The estimated pension benefit cannot be less than the one calculated from the total amount of the gross contributions paid by the insured individual throughout his/her working years. The second type of guarantee concerns the minimum yield realized by the pension fund, estimated by taking into account the weighted average return realized by all of the funds at the end of each quarter for the last 24-month period. Both types of guarantees try to minimize the investment risk insured individuals are exposed to. Within the defined contribution pension schemes the amount of the future pension benefit strongly depends on the accumulated amount towards the date of retirement. So the first type of guarantee aims to protect the sum of the paid contributions in the course of one's working career. However, the amount is guaranteed only in nominal terms and that is a kind of an absolute minimum without which the pension insurance of this type could hardly be justified. The second type of guarantee is much more controversial. It aims to provide a certain minimum level of yield by taking into account the

[8] Such transfer of resources is applied in Columbian pension funds where 20% of the resources are transferred each year into less risky portfolio during the last 5 years before retirement.

[9] At the time of writing the article some of the funds have already restored the value of one pension unit but some others haven't.

average performance of all pension funds of the same type for a specified period of time. The introduction of this kind of guarantee stems from the mandatory character of the second pillar pension funds. The logic here is straightforward – the state obligates insured individuals to save, and it tries to guarantee that whatever choice they make about the fund, the last would not significantly lag behind the realized average yield. There are fears that this type of regulation motivates herding behavior among pension funds. Knowing that their performance is evaluated on the basis of the achieved average yield, managers have serious incentives to structure similar asset portfolios. This is even more true when pension market is dominated by three pension funds whose total market share exceeds 60%[10] and pension companies compulsory reveal their portfolios of assets every three months. However, looking carefully at the details of the pension fund market in Bulgaria, one could easily see that there are no signs of such copying behavior among pension funds regarding their asset portfolios. The reason for this is the different investment approach assumed by the market leaders and the funds with smaller market shares. The funds with the dominant positions prefer investments in assets traded on well-developed foreign stock markets with significant liquidity. The risk they assume is smaller, but all other things been equal, this means also smaller expected yield. This type of investment behavior is not followed by the smaller funds. Most of them are part of domestic economic groups and prefer investments in local companies, traded at the Bulgarian stock exchange. The liquidity of their investments is not so good taking into account the characteristics of the local market, but the expected yield is higher for at least two reasons. First, emerging economies like Bulgaria's are expected to grow faster in the coming years, especially compared to economies in the western part of the continent. This should be a result of the growth of the local businesses, which is expected to benefit the insured individuals especially if their savings have supported this growth. Second, Bulgaria is not part of the Eurozone and the banking system has been functioning without lender of last resort (typical central bank) since the inception of the currency board system. Hence, the interest rates in the country are higher than the ones in the developed economies. This makes the investments in domestic corporate bonds more attractive than the analogical investments in the western part of Europe. It must be recognized that the risk assumed is also higher, but is offset to some extent by the acquisition of specific knowledge on the precise development of the securities issuers. So, following the past development of the second pillar pension funds, it is easily seen that some of the smaller funds were able to achieve higher yield than the one realized by the market leaders thus reaching the highest value of one pension unit for all types of funds operating at the market until the mid 2024. So, from this point of view preserving the requirement for achieving minimum rate of return could be seen as a specific incentive for the biggest pension funds at the market for being more active and not so conservative in their investment behavior since this could disrupt the savings of the insured individuals especially in the long term.

## CONCLUSION

The multufind system in pension insurance has been discussed for many years in Bulgaria. The opportunity to choose portfolio of assets with different risk characteristics has always been seen as a further step in the development of the pension model in the country. However, certain specifics of the pension business were obstacles in introducing such possibility for the insured individuals. Since the beginning of 2024 the discussion about changing the system in this direction has been renewed. Following the example of several countries in the region, Bulgarian policymakers could elaborate rules that best suit the interests of the insured individuals. The most important features that must be taken into account concern the number of managed portfolios, the way of distributing insured individuals among the different portfolio types, the limits of investments in variable income instruments and the guarantees provided by the pension insurance companies. Each of these issues have to be properly addressed in order to convince all of the stakeholders in the system that the implemented reform would raise the system efficiency. The multifund system has the potential to do this, but only in an environment of clear rules, transparent regulations and prudent management practices.

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## REFERENCES

Antolin, P., S. Payet and J. Yermo. 2010. Assessing Default Investment Strategies in Defined Contribution Pension Plans. *OECD Journal: Financial Market Trends*, (1), https://doi.org/10.1787/fmt-2010-

[10] Universal pension funds of Doverie, DSK Rodina and Allianz Bulgaria have a market share of 65.23% towards 30.06.2024 (www.fsc.bg)

5km7k9tp4bhb.
Barembruch A., and K. Bielawska. 2023. Employee Capital Plans performance through the lens of the participant – how to better measure and inform about the returns, DOI: 10.19195/2658-1310.29.1.1.
Bielawska K. 2015. Pension reforms and long-term sustainability of public finances of the Central and Eastern European countries: Publishing House of PUT.
Blake, D. 2006. Pension Finance. UK: Published by John Willey & Sons ltd.
Brealey R., S. Myers, and A. Marcus. 2007. Fundamentals of Corporate Finance, fifth edition, published by McGraw-Hill/Irwin, NY.
European Commission. 2010. Towards Adequate, Sustainable And Safe European Pension Systems (Green Paper).
European Commission. 2012. An Agenda For Adequate, Safe and Sustainable Pensions (White Paper).
European Commission. 2018. Pension Adequacy Report: Current and Future Income Adequacy in Old Age in the EU.
European Commission. 2021a. Pension Adequacy Report: Current and Future Income Adequacy in Old Age in the EU.
European Commission. 2021b. The 2021 Aging Report. Economic and Budgetary Projections For The EU Member States (2019 – 2070).
Gochev G., and B. Manov. 2003. Socialno osiguriavane – teoria i praktika [*Social security – theory and practice]*: Publishing House of Trakia M, Bulgaria.
Kirov St. 2010. Chastnite pensionni shemi [*Private Pension Schemes]*.:Publishing House: Faber.
OECD. 2004. Pension reforms in the Baltic countries.
OECD. 2008. Private pensions outlook.
Pandurska R. 2020. Kliuchovi Aspekti I Predizvikatelstva Pred Razvitieto na Pensionnata Sistema v Bulgaria [Key Aspects and Challenges In Front Of the Pension System in Bulgaria: Publishing House: UNWE, Sofia.
Rocha, R., and D. Vttas. 2010. Designing the pay-out phase of pension systems. Policy Issues, constraints and options; Policy research working paper 5289; The World Bank.
Whitehouse, E. 2007. *Pensions Panorama: Retirement-Income Systems in 53 Countries*, The World Bank, Washington, D.C., https://doi.org/10.1787/9789264032118-en.
World Bank. 1994. Averting the Old-Age Crisis: Policies to Protect the Old and Promote Growth, Oxford University Press.
World Bank. 2008. The World Bank Pension Conceptual Framework. World Bank Pension Reform Primer Series, Washington, D. C.
Yermo, J. 2012. The Role of Funded Pensions in Retirement Income Systems: Issues for the Russian Federation. *OECD Working Papers on Finance, Insurance and Private Pensions*, 27, OECD Publishing, Paris, https://doi.org/10.1787/5k9180xv25xw-en.

**Data Sources**

Bulgarian financial supervisory commission - www.fsc.bg
European Central Bank: www.ecb.europa.eu
Eurostat: https://ec.europa.eu/eurostat
Federal Reserve Board: www.federalreserve.gov