UDC [331.25:347.464](477)

L. G. Parfonova,
Senior lecturer of the Department of International Business Activity
A. O. Bikinina,
Donetsk National Technical University

PENSION FUNDS: INVESTMENT RISK MANAGEMENT

Introduction. Pension provision has always been an important issue for every government as it contributes to the economic image of the country in general and impacts on the population's trust to government. One of the most important tasks of social-oriented market economy development in Ukraine is pension system reform. Because of the new economic, social, political and demographical realties, our country has an objective need to implement a system of non-state pension provision, which is actually one of the foreground directions of social security system development. The current most serious concern is the extraordinarily large public pension expenditures (approximating to 16% of GDP), which is almost twice as large as the average public pension expenditures in EU countries. The process of population ageing and an increase of pension age citizen's share amplify the social and financial pressure on the working population of the country and becomes a reason for the heightened attention of society towards non-state pension funds system development.

Since independence, Ukraine has undertaken very minimal reforms of the social sector. The State Pension Fund was the fundamental of Ukrainian pension system. The main source of retirement income is provided by state solidarity pension insurance system financed on a pay-as you go basis. Private (non-state) pension funds have been implemented and legislated since 2004, when the law “On Mandatory State Pension Insurance” was adopted, and have formed the third pillar of Ukrainian pension system. Nevertheless, they still have not gained the popularity in Ukraine, unlike in other European countries. Moreover, there is a slight reduction in their activity. At the end of the 2012 there are 94 non-state pension funds that are functioning in Ukraine, but none of them tends to be stable and developing. The situation is considerably different in other countries. The most of private pension funds have proved to be effective and secure despite all the risk that is undertaken.

The analysis of scientific researches. A variety of problems connected with state and non-state pension funds effectiveness is a topic for discussion for foreign scientists and series of researches are devoted to risks of pension system. For example, Dorothee Franzen examines investment risks in defined-benefit pension funds [1]; Sandy Halim, Terrie Miller, and David Dupont held a global survey on how pension funds manage investment risk [2] and so on.

The reforms of pension system and pension provision in general is the question which is becoming more and more topical in Ukraine, especially due to the pension reform recently implemented. For those reasons, the number of Ukrainian researches devoted to this topic is rapidly growing. So, A. Bakhmach in the research pays attention to the non-state pension provision system development in Ukraine [3]. T. Salnikova analyses the reliability of private pension [4]. P. Floreskul underlines the importance of non-state pension provision in social security of Ukrainian citizens [5]. A. Kazanchan examines and researches pension provision and its connection with pension insurance [6]. N. Telichko and G. Kuzmenko analyse the influence of non-state pension funds at social-economic development of the country [7]. V. Pavliv in his research describes the current state of non-state pension provision system and underlines difficulties and problems of its development [8]. Tolubyak V. proposes the new classification of risks which pension providing system undertakes [9]. However, the question of different kind of pension system's risks which one can face is not well considered in Ukrainian scientific literature.

Pension system attracts big volumes of financial resources and contains numerous risks. That is why the government policy in this sphere has to be directed at using special approaches and methods of defining pension system's risks and adequate reaction at their negative demonstration. Thereby **the main goal of this paper is** to make profound and complex research existing and potential risks of pension system in order to define the ways of overcoming their negative effects.

The research. In conditions of market economy, social insurance is the main institution of person's security and pension provision is a basic and one of the most important social guarantee of stable development of the society, as it directly affects interests almost of all the people. During the recent decades, the current system of state pension provision, based on the redistribution principle, has faced the disability of providing their participants with the decent level of pensions, due to the demographical changes in the population structure which are connected with increase of the pensioners' share and decrease of the number of employable population.

To improve the situation, there are certain measures to be taken. The current state of pension system requires the implementation of new types and models of pension provision in Ukraine, based on the experience of highly-developed countries.

First of all, the implementation of new pension plans is essential. In broad terms, and depending on how pension benefits are calculated and who bears the inherent risk, pension plans can either be defined benefit (DB) or defined contribution (DC) in nature. Defined benefit plans are plans where the employer guarantees to pay the employee at retirement a fixed monthly income for life. Defined contribution plans are plans in which the employer agrees to contribute a fixed amount to the employee's pension fund each year in which the employee is employed. The income that the employee receives during retirement depends upon how much money the plan accumulated and how much income that amount can generate. Under both types of plans, funding of the pension can be in the form of contributions made by the employer alone or by contributions from both the employer and employee.

The defined-contribution pension scheme is a private pension plan which is gaining popularity in a wide range of countries, in which private pension provision is a main source of retirement income for pensioners. The number of private funds which provide members with such type of scheme is rapidly growing, meanwhile in Ukraine, not only this type of scheme is not developed, but also the number of pension funds and private pension contracts has recently faced a dramatic fall. However, the main indicators of non-state pension funds activity are positive, which proves that this system has potential and can be developed and effective in the future.

Defined contribution pension plan has a fixed contribution usually based as a percentage of the employees' salary (usually employer matched). The benefit is dependent on how the portfolio performs with no guarantees as to how much income you'll receive during retirement. For the astute investor, a defined contribution plan has the benefit of total control over the money/portfolio. The investor can choose various funds and asset allocation within the plan.

Typically speaking, an employee doesn't have a choice as to whether to enroll in a defined benefit plan or a defined contribution plan. It's usually one or the other depending on the company. Defined contribution plans are becoming more popular as they are much less risk to the company and arguably the employee as well.

Ukrainian pension system should implement changes to adopt the social insurance principles of the Notional Defined Contribution (NDC) type PAYG schemes. The implementation of DC pension scheme can have a range of advantages both for the retirees and Ukrainian economy. Government rarely invests pension contributions, so basically people pay taxes to make pension contributions, but, this money are rarely invested. Instead government pays pension payments out of current expenditure. This means with an ageing population, they will struggle to pay the pension commitments. What is more, the most of private pensions around the world enable the government to lower taxes. Arguably lower income tax may increase incentives to work. Lower corporation tax may increase incentives for business investment, so this point can be implemented into Ukrainian system as well.

Moreover, the support ratio in Ukrainian as well as in all the other countries is declining. A real problem the government faces is that the percentage of people of retirement age is increasing. This means an increase in the dependency ratio. Basically, there will be more people receiving pension compared to the number of people working and paying income tax (Fig.1). This is going to leave a black hole in government finances, relying on private pensions would avoid this problem.

Besides the support ration, we can see the unstable and insignificant and unstable growth of the replacement rate, which indicates the ratio of the pension itself to the pre-retirement salary (Fig.2). Replacement rate is one of the main indicators of pension system effectiveness, so according to the recent data, Ukrainian pension system is not as effective as it could be, that is also a reason for its reformation.

So, there are four desirable features of the DC:

1. The pension income entitlements are based on average 'lifetime' wages, rather than a subset of best or final years' wages;

2. Benefits are adjusted for early or deferred retirement on the basis of actuarial fairness;

3. Benefits are adjusted as life expectancy increases,

Table 1

The dynamics of the non-state pension funds activity main indicators [10]

	2010	2011	2012
The number of pension contracts, thousands unites	69,7	75,0	61,4
Pension benefits, mln uah	158,2	208,9	251,9
Profit from assets investments, mln uah	433,0	559,9	620,3

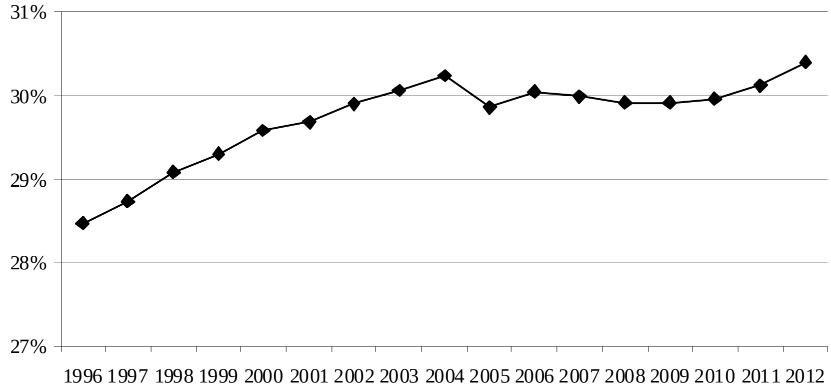

Fig. 1. The growth of the number of pensioners in the total population of Ukraine [11]

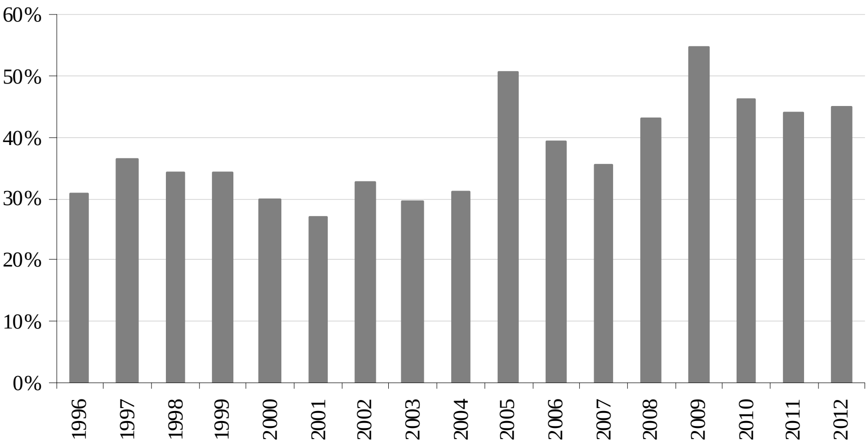

Fig. 2. The dynamics of the replacement rate in Ukraine [12]

so as to reflect the longer duration for which benefits would be paid; and

4. The recognition of periods outside employment (such as unemployment, periods of maternity and parental leave) is achieved by crediting notional personal accounts with additional contributions paid from general public revenues on annual basis.

But at the same time it has the downside:

1. Retirement income is entirely dependent on how the portfolio/market performs over the vested period.

2. Even an employee who has no interested in finances needs to be involved with the portfolio.

As well as being advantageous, DC private pension system undertakes a range of risks. In DC plans, participants bear the brunt of risk, while in traditional DB plans sponsoring employers assume most of the risks. Employers in some countries have introduced hybrid and mixed DB plans, which come in different forms, but effectively involve some degree of risk sharing between employers and employees.

According to V. Tolubyak, non-state pension funds face the political, financial, demographical, market, systematic, investment risks and also the risk of distrust [9]. Among Western pension funds, the investment risk proves to be the most considerable and dangerous.

Risks undertaken by private pension system may also be classified as following:

• social and labour-market risks – different life events – such as persistent low earnings, long-term unemployment, caring for children or older relatives, family problems that affect professional sphere, illnesses and problems with health - can have a negative results on the retirement income of the worker. In other words, the employee may not be capable of making contributions because of the personal reasons. The cost of these risks could be borne by individuals, by governments or by the contributors to pension systems.

• policy risk – political situation in the country can change dramatically and different changes, such as new laws or legislative acts may in unanticipated changes in pension entitlements before or during retirement, perhaps leaving individuals with little or no time to respond by changing their labour-market or savings decisions;

• myopia risk - many workers don't think much about their future and don't pay enough attention to saving money for later, especially for retirement. They prefer to consume more right now. This would lead to low pensions and costs for taxpayers and contributors if these retirees were entitled to safety-net benefits [13];

• life-expectancy or longevity risk – despite the fact that recent increase in life expectancy may be celebrated as one of achievements of modern society, not all pension systems are able to ensure to ensure long-term affordability. Moreover, it is much less clear how the burden of such adjustments should be divided between today's taxpayers, contributors and retirees and future retirees. Furthermore, the estimates of life-expectancy increases on which pension decisions have been based have, regrettably, often turned out to be wrong. The growth of life expectancy, especially at retirement age, has consistently been underestimated [14];

• investment risk – the risk that the return is not produced due to unexpected behavior of the investments. Both internal and external factors may cause assets to not behave as expected. So, generally, investment risk may be divided into two groups: external and internal influences.

Despite the fact that it is difficult to manage such risks as longevity or policy ones, pension funds successfully manage the investment risk, using the wide range of methods. The most popular of them are regulation of investments in pension funds, establishment of surplus funds, diversification and asset allocation reviews.

Regulation of investments in pension funds (establishment of limits on investments) is the method which is used in the most countries. It basically means that there are certain limits on investments in some particular sphere, which regulated by law or by pension fund itself.

Establishment of surplus funds is a key method to protect participants' money. They are formed of the money left after all the liabilities, taxes and fixed payments. Surplus funds play a role of some kind of insurance for the case of emergency. In case when the pension fund faces the risk and can bear it, the benefits are paid to participants from surplus fund.

Diversification is also one of the most important methods. It's a worldwide known risk management technique that mixes a wide variety of investments within a portfolio. In that case, pension funds are protecting themselves from big losses in one particular form of investments and therefore are reducing the risk in general. It is the method used the most widely around the world. Figure 3 shows the asset allocation of the largest pension system funds'.

Finally, it is essential to review asset allocation in order to monitor its effectiveness and to define whether the assets behave as expected.

Conclusion. Non-state pension funds play an important role in the system of pension provision. Defined-contribution pension scheme is the most popular and developed type of private pension provision and Ukraine has a great potential to implement this type of pension plan. The first steps have already been made as we can see a slight increase in the number of private pension funds and growing amount of pension benefits. Despite the fact, that private pension provision system is affected by various risks, we can see from the foreign countries' experience that they are manageable, even though there are certain losses to be taken. The most successfully foreign pension funds manage investment risks, using such methods as diversification, surplus funds

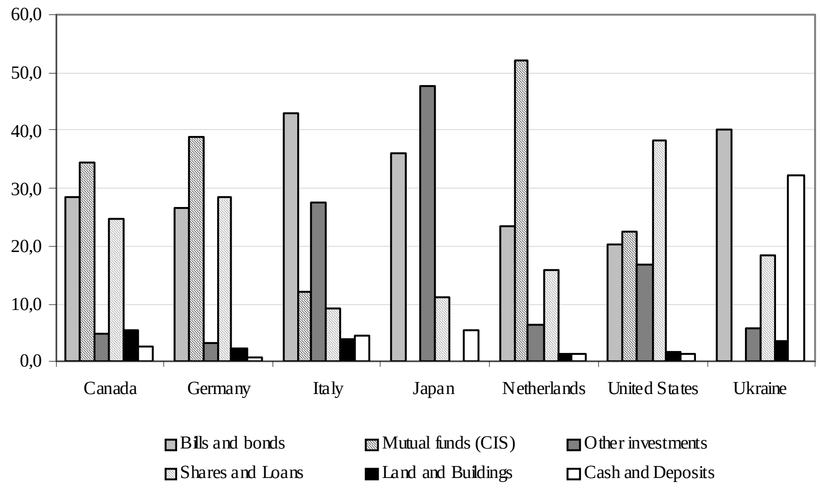

Fig. 3. Pension funds' asset allocation in 2011 (% of total investment) [15]

establishment, regulation of investments and asset allocation review. The development of private pension funds as institutional investors, which can optimize the Ukrainian pension system functioning is the topic for further research.

References

1. **Franzen D.** Managing Investment Risk in Defined Benefit Pension Funds / D. Franzen // OECD Working Papers on Insurance and Private Pensions. Paris:OECD Publishing. – 2010. – № 38. – 58 p. 2. **Halim S.**, Miller T., Dupont D. How Pension Funds Manage Investmen Risks: A Global Survey / S.Halim, T. Miller, D.Dupont // Rotman International Journal. Toronto:Rotman International Centre for Pension Management. – 2010. – 10 p. 3. **Бахмач А.** Розвиток системи недержавного пенсійного забезпечення в Україні / А. Бахмач // Вісник Пенсійного фонду України. – 2008. – № 3. – С. 12 – 13. 4. **Сальникова Т.** Недержавна пенсія: головне – надійність / Т. Сальникова // Вісник Пенсійного фонду України. – 2008. – № 6. – С. 20 – 21. 5. **Флорескул Н. П.** Роль недержавного пенсійного забезпечення в соціальному захисті громадян України / Н. П. Флорескул // Формування ринкових відносин в Україні. – 2008. – № 1. – С. 150 – 155. 6. **Казанчан А. А.** Поняття та види пенсійного забезпечення громадян в Україні / А. А. Казанчан // Ученые записки Таврического национального университета им. В. И. Вернадского. Серия „Юридические науки". – 2010. – Том 23 (62). – № 1. – С. 142 – 149. 7. **Теличко Н.** Вплив недержавних пенсійних фондів на соціально-економічний розвиток держави / Н. Теличко, Г. Кузьменко // Економічний вісник Донбасу. – 2010. – № 3. – С 57 – 62. 8. **Павлів В. В.** Сучасний стан та проблеми розвитку недержавного пенсійного забезпечення / В. В. Павлів // Економічний вісник Донбасу. – 2012. – № 2. – С. 60 – 65. 9. **Толуб'як В. С.** Ризики системи пенсійного забезпечення. – [Електронний ресурс]. – Режим доступу : http://www.nbuv.gov.ua/portal/Soc_Gum/Nvamu_upravl/2010_4/30.pdf 10. **Основні** показники системи недержавного пенсійного забезпечення. Державна комісія з регулювання ринку фінансових послуг. – [Електронний ресурс]. – Режим доступу : http://www.dfp.gov.ua 11. **Кількість** пенсіонерів. Державна служба статистики України [Електронний ресурс]. – Режим доступу : http://www.ukrstat.gov.ua/. 12. **Рівень** заробітної плати. Рівень пенсії. Державна служба статистики України [Електронний ресурс]. – Режим доступу : http://www.ukrstat.gov.ua/. 13. **D'Addio A.**, Seisdedos J., Whitehouse E. Investment Risk and Pensions: Measuring Uncertainty in Returns / A. C. D'Addio, J. Seisdedos, E. R. Whitehouse // OECD Social, Employment and Migration Working Papers. Paris:OECD Publishing. – 2009. – № 70. – 39 p. 14. **Antolin P.** Longevity Risk and Private Pensions / P. Antolin // OECD Working Papers on Insurance and Private Pensions. Paris:OECD Publishing. – 2007. – № 3. – 27 p. 15. **Pension** at a Glance 2011: Retirement-income Systems in OECD and G20 Countries. – Paris: OECD Publishing, 2012. – 347 p.

Парфьонова Л. Г., Бікініна Г. О. Пенсійні фонди: управління інвестиційним ризиком

У статті обґрунтовано необхідність реформування вітчизняної пенсійної системи. Описано основні види пенсійних планів недержавного пенсійного забезпечення. Визначено пенсійний план, який найбільше підходить для сучасного стану пенсійної системи України. Наведено класифікацію ризиків, пов'язаних з функціонуванням пенсійної системи. Запропоновано основні методи управління ризиками.

Ключові слова: пенсійна система, недержавні пенсійні фонди, інвестиційний ризик, управління ризиками.

Парфенова Л. Г., Бикинина А. А. Пенсионные фонды: управление инвестиционным риском

В статье обоснована необходимость реформирования отечественной пенсионной системы. Описаны основные виды пенсионных планов негосударственного пенсионного обеспечения. Определен пенсионный план, наиболее подходящий для современного состояния пенсионной системы Украины. Приведена классификация рисков, связанных с функционированием пенсионной системы. Предложены основные методы управления рисками.

Ключевые слова: пенсионная система, негосударственные пенсионные фонды, инвестиционный риск, управление рисками.

Parfonova L. G., Bikinina A. O. Pension Funds: Investment Risk Management

In the article the necessity of the pension system reform was proved. The basic types of pension plans non-governmental pension provision were described. The pension plan which is the most suitable for the modern condition of the Ukrainian pension system was defined. The risks associated with the functioning of the pension system were classified. The main methods of risk management were suggested.

Key words: pension system, non-state pension funds, investment risk, risk management.

Received by the editors: 04.11.2013
and final form 04.12.2013