

Investment Mechanisms of Pension Insurance and their Role in Development of National Economy

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Abstract

The article presents a comparative summary of the distributive and funded pension systems, discusses the advantages and disadvantages of each of them. The author of this article describes the various investment instruments in infrastructure, among which the author of this article allocates such class of assets as infrastructure bonds. The article analyzes investment characteristics of the main infrastructure segments and presents the classification of infrastructure projects in depend on the degree of risk. On this basis were given recommendations for the formation of the investment portfolio of infrastructure investments using a variety of tools and objects of investment.

Keywords: pension insurance, pension funds, pension reserves and savings, investment of pension funds, infrastructure, infrastructure investment, infrastructure bonds, concession agreements.

1. Introduction

Modern pension systems of the world are characterized by great diversity due to the historical development of country-specific economic conditions and legislative features. Nevertheless, there are two main types of pension systems: Pay-As-You-Go (PAYG) and fully-funded.

In the PAYG system, payments of the pensions to the retired population are financed by the contributions of the working population. The main advantage of the PAYG system is to provide a guaranteed minimum income to those who due to illness or opportunity could not have enough help for retirement during their working lives. The level of pensioners' welfare depends primarily on the economic activity of the current generation. Pension in this system has social nature and usually guaranteed by the government. A major disadvantage of PAYG system is its dependency on demographic factors and the state of the labor market: employment and unemployment levels, wages, the ratio of contributors and pensioners [10].

In a balanced PAYG system, expenditure in each period equals revenue such that [14]:

$$p * R = s * w * L; \quad (1)$$

where p - the average pension;

R - the number of pensioners;

s - the rate of contribution;

L - workers participate in the scheme;

w - average covered wage.

Equation (1) can be re-written as follows:

$$s = \frac{p/w}{L/R} = \frac{R_r}{R_s}; \quad (2)$$

where R_r - replacement ratio;

R_s - support ratio.

Equation (2) shows us that the rate of contribution must equal the replacement ratio, divided by the support ratio. The system is balanced until the support ratio is constant. Unfortunately, in terms of ageing population support ratio changes and the balance of PAYG system breaks down: expenditure is no longer equal to revenue [4]. Without funding from external sources it is necessary to raise the rate of contribution or reduce the replacement ratio. Both solutions are negative for people living in the country and for economic development.

In a fully-funded scheme pensions are paid from a fund built over a period of years from members' contributions. The fundamental difference of the fully-funded pension scheme is the formation of individual real cash savings. All of

contributions are not expended on the pensions to other recipients in the current period; they are placed on individual retirement account to a licensed finance company, which is engaged in storage and investment of these funds (by themselves or by third parties) in the financial market. Government within the funded pension system assumes such functions as: control, monitoring, legislative and regulatory.

The main advantage of fully-funded pension scheme is the possibility of using long-term financial resources for the needs of the economy, leading to the national economic growth and development. Thus, investment mechanisms of pension insurance are present only in fully-funded pension schemes.

2. Method

The Russian pension system is a pension system of mixed type [6], as it contains both: PAYG and fully-funded component of pension scheme. However, the current state of the public pension system in the Russian Federation is characterized by the lack of financial resources in the budget of the Pension Fund of Russia (PFR) and the high dependence of mandatory pension insurance from revenues of the Federal budget. At the same time funded component of the pension system in our country has not received proper development and implementation of the new pension reform at the end of 2013, the number of citizens affected by its influence has declined significantly [11, 12]. Despite the fact that pension savings could be significant internal source for long-term investments in the economy of our country.

At the present stage of development Russia needs to invest substantial funds in all sectors of infrastructure, ranging from modernization of transport and energy systems, to communication systems and telecommunications. The government assessed the needs in modernization of the Russian infrastructure at the level of one trillion US dollars that should be spent in the next ten years, most of which are supposed to come from the private sector. However, the growth of political risks has led to the fact that private investment in infrastructure in large quantities has not been received.

In our country we already have the first experience of pension funds participation in infrastructure projects, but comparing with other countries this trend has serious potential of its development [9]. The role of infrastructure investments in the development of investment mechanisms of pension insurance is as follows:

- protection against strong fluctuations in changes of value and yield;
- protection against inflation;
- compliance of the investment horizons of pension funds long-term pension obligations;
- diversification of pension savings when they invest.

In addition, the fact that infrastructure projects are able to demonstrate citizens how their pension funds can bring real benefits of contemporary reality, developing the country's infrastructure and improving the quality of life, can increase the interest to pension system and to stimulate active management of pension savings.

At the same time, the choice of infrastructure is necessary to consider that the investment characteristics of the various infrastructure facilities differ and the formation of infrastructure investment portfolio it is important to follow the principle of diversification of investments of pension funds (Table 1).

Table 1: Investment characteristics of the main segments of the infrastructure [3]

Segments of the infrastructure	Risk	The average annual yield in the first 5 years	The average internal rate of return (IRR)
Toll roads (operation)	low	4-8%	8-12%
Toll roads (construction)	moderately high	3-5%	12-20%
Railways	high	8-12%	14-18%
Airports and seaports	moderate	5-10%	15-18%
Project financing	moderately low	6-12%	9-11%
Energy, cable networks, long-term tariff regulation systems	moderately low	6-10%	10-15%

It should be noted, that infrastructure projects also have risks, among which are: delays in construction time, the increase of construction budgets, mistakes in predictions of payback, difficulties in obtaining permits and other bureaucratic problems. In addition, financial instruments, which can be used for financing infrastructure projects, have their own inherent risks. On this basis, we propose the following classification of infrastructure projects depending on the degree of risk (Figure 1).

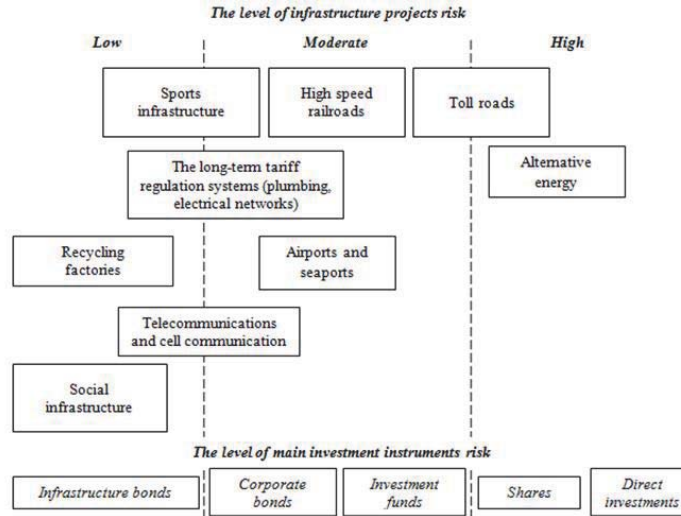


Fig. 1. The classification of infrastructure projects depending on the degree of risk

Thus, the figure shows us that among the main investment instruments infrastructure bonds have the lowest risk and direct investments the highest. Total pension resources are estimated at 3.92 trillion rubles (on 30.06.2014), 78% of which are pension resources in obligatory pension system (3.05 trillion rubles), and 22% are pension resources in voluntary pension system (861.47 billion rubles). In our opinion in infrastructure it could be invested at least 25% of all pension resources (or about 1 trillion rubles) by using different financial instruments.

3. Result

In the process of investing pension financial resources in infrastructure projects, it seems appropriate to diversify investments among the various infrastructure projects and use various financial instruments [8]. We offer the option of pension resources allocation, in which as the primary structural element of the portfolio will be infrastructure bonds, as the most suitable tool for the investment of pension funds, providing the criteria of safety and long-term investment period (Figure 3).

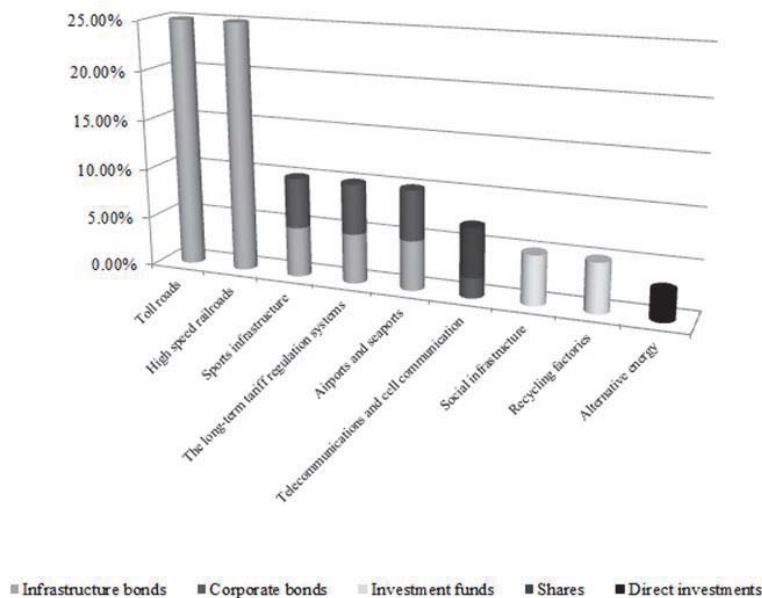


Fig. 3. The structure of pension infrastructure investment portfolio

As can be seen from the figure, the share of infrastructure investments with the use of infrastructure bonds in the structure of the portfolio is 65%. The remaining funds can be invested through other instruments, such as corporate bonds, shares, investment funds, direct investments, because it is also necessary to maintain the liquidity and profitability of the portfolio.

In the case of investing pension financial resources infrastructure bonds are best suited to this. Infrastructure bonds, as well as any other financial instrument, have their investment qualities and features that characterize them as an investment object. These qualities are the following:

- long period of infrastructure bonds circulation (usually 15-30 years), which corresponds to an average term of the project (including construction or modernization of an object and the operation period);
- availability of government or bank guarantees;
- targeted use of funds;
- built-in mechanisms of insurance against inflation losses (coupon, indexed in line with inflation);
- low dependence on the stock market;
- issue of infrastructure bonds are generally carried at the basis of the concession agreement or the public private partnership (PPP) agreement between the government (at the federal or regional level) or municipal authorities, on the one hand, and the project company engaged in the issue of the bonds, on the other.

An important advantage of infrastructure bonds is low correlation of their quotations with other financial instruments, which allows long-term investors to effectively diversify their investments, and to ensure a guaranteed return on investment.

In addition, two important features of infrastructure bonds are: public negotiability and fragmentation of investment. In fact, this means the liquidity of the investment, the availability of public monitoring of the project implementation and access to a wider range of investors.

4. Conclusion

Thus, it is necessary to improve the process of using financial resources in the pension system by investing them in long-term infrastructure projects through financial market instruments. Infrastructure investments have not only an important social functions and contribute to the economic growth of the country, but also act as a corresponding tool to the basic criteria of efficiency of investments of the pension resources:

- the preservation of pension resources;
- the compliance of the investment horizons obligations;
- the reliability of investment objects.

Thus, considering the possibility of diversification between different infrastructure objects and investment methods, this tool has a special meaning for the development of investment mechanisms of pension insurance in our country.

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