

# THE IMPACT OF NON-STATE PENSION FUNDS AND MANAGEMENT COMPANIES REMUNERATION ON PENSION FUNDS` RETURN

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## Abstract

The article examines the influence of the size and structure of remuneration of management companies and non-state pension funds on the profitability of funds. The analysis was carried out for 27 Russian non-state pension funds carrying out compulsory pension insurance in 2019. The analysis of factors influence was carried out based on the multiple econometric models construction. The indicator of the return on investment of pension savings before payment of remuneration to management companies, a specialized depository and a fund was used as the resulting indicator. The results of the study revealed that an increase in the size of pension savings per one insured person leads to the funds` return growth. An increase in the ratio of the fixed part of the fund and the remuneration of the management company to the amount of pension savings and an increase in the share of the variable part of the remuneration of the management company leads to a decrease in pension payments. Calculations allow us to conclude that it is necessary to reduce the volume of placement of assets of NPF by management companies with an increase in the share of self-placement of assets.

**Key words:** non-state pension funds, pension savings, pension reserves, pension funds` return

**JEL Code:** G 11, G 23

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## Introduction

Russian non-state pension funds (NPF) carry out two types of activities – mandatory pension insurance and non-state pension provision. In the first case, management companies carry out the investment of pension savings in authorized financial assets, who receive fee from pension funds. According to the Russian legislation, fee can consist of two parts – constant and variable. The analysis of the profitability of investing pension savings shows a significant difference in the profitability indicators before and after deducting remuneration to management companies. In this regard, it becomes relevant to study the impact of the amount of fee and the structure of

fee to non-state pension funds and management companies on the profitability of investing pension savings.

This study is a logical continuation of the research of assessing the effectiveness of the management of Russian non-state pension funds (Reutova, 2020).

## **1 Theoretical bases of the research**

The study of the scientific literature on the assessment of the profitability of pension funds allowed us to identify the following areas of research. These areas are based on different conceptual and methodological approaches.

Direction 1 - analysis of the profitability of pension funds through the asset structure and the risks of the investment portfolio.

The article by Laurens Defau focuses on the preferences of pension funds to allocate funds to alternative assets. The research by Laurens Default, L. analyzed 890 pension funds from North America, Europe, Australia, and New Zealand. The research results confirmed that portfolio diversification plays a significant role in increasing their profitability (Laurens Defau, 2021).

López, F., & Walker, E. (2020, January 06) write about the investment performance of Chilean pension funds. In their study, they supplemented the analysis of profitability using the Sharpe method through regulatory restrictions and currency hedging. Based on this, it is concluded that there is a need for investment regulation of pension systems with characteristics similar to the Chilean one (López, 2020).

A study by Vitaly, S., & Moriggia, V. (Vitali, 2020) examines the expansion of pension fund assets by including investment certificates. Investment certificates are structured products that have a special payout structure. Research confirms that subclasses of certificates provide protection against losses and demonstrate high liquidity, so they can be highly valued by pension fund managers. Calculations show that the optimal portfolio is effectively able to achieve several goals, such as liquidity, profitability, extraordinary sponsor contribution, and funding shortfall.

Jun. C. provides a comparative analysis of the management of two public pension funds, GPIF and NPS. Alternative investments are considered, including portfolio investments in real estate, infrastructure, private equity funds, and other assets (Jun, 2018).

Thus, the works of these scientists contain conclusions about the relationship between the profitability of funds and the composition and structure of assets in which the funds of pension funds are invested.

Direction 2 - analysis of profitability through factors affecting the assets and activities of funds. A large number of Russian studies are devoted to determining the factors that determine the profitability of the pension savings portfolio, such as the portfolio management strategy, the structure of its distribution and the dynamics of the financial market. Tumanyants K. A. identifies external factors, such as high inflation, the dynamics of interest rates, and the profitability of the main Russian indices. At the same time, the author notes that the quality of investment management and regulatory restrictions on the structure of investments are not the reasons for the inefficient activities of non-state pension funds. (Tumanyants, 2014). Similar factors (the exchange rate, the MICEX index, interbank lending rates) and internal factors (a balanced investment portfolio management strategy, the life of this portfolio, and seasonality) are distinguished by E. A. Fedorova, A. S. Didenko, and D. A. Sedykh of companies (Fedorova, 2016).

Direction 3 - analysis of the profitability of pension funds through the costs of their activities. A number of scientists Alserda, G. A., Bikker, J. A., & Van Der Lecq, F. S. believe that the operating costs of pension funds have a negative impact on pension payments, so it is extremely important for pension funds to work with the lowest possible costs. The authors point out that many pension funds have significant inefficiency in both administrative and investment activities, and justify the increase in pension payments by improving their cost indicators (Alserd, 2018).

Broeders, D. W., Van Oord, A., & Rijsbergen, D. R. analyzed the relationship between investment costs and pension fund size based on data from 225 Dutch pension funds, and identified investment costs for 6 asset classes for management costs and performance fees. It was concluded that the pension fund, which has more assets under management, on average reports a decrease in annual investment costs and large pension funds pay significantly higher commissions for investments in equity, private equity and hedge funds (Broeders, 2016).

Factor analysis between investment returns and performance fees of 218 Dutch occupational pension funds did not show that the returns of pension funds that pay asset managers for active investment are significantly higher or lower than those of pension funds that do not pay performance fees. This is true for most asset classes if the risk is adjusted. It has also been determined that larger and more specialized pension funds pay less for a certain level of excess returns in alternative asset classes, such as hedge funds and private equity.

## 2 Data and methodology

Russian pension funds are required to transfer the funds of pension savings to the management company. The procedure for forming remuneration to NPFs and management companies is defined by Federal Law No. 75-FZ of 07.05.1998 «On Non-State Pension Funds». The NPF's remuneration is divided into two parts: a constant (management fee) and a variable (success fee). The amount of the management fee of the fund's fees and the amount of expenses of management companies related to the investment of pension savings are paid from pension savings and may not exceed 0.75% of the average net asset value for the year. Payment of the success fee of the fund's fees is made at the expense of income from investing pension savings and the amount may not exceed 15% of the investment income.

The purpose of the study is to assess the impact of the size and structure of fees to non-state pension funds and management companies on the profitability of investing pension savings

To assess the impact of the size and structure of fees to non-state pension funds and management companies on the return on investment of pension savings, one-factor and multi-factor linear econometric models were constructed.

The resulting indicator in all models was the return on investment of pension savings before payment of fees to management companies, a specialized depository and a fund, measured in percent (total return on investment – TR).

The selection of regressors was due to the following reasons:

1. Availability and reliability of the source of statistical information. When forming the database, the information published on the website of the Bank of Russia is used. Unfortunately, information on the remuneration structure of the NPF and the management company is published by the Bank of Russia only since 2019. Therefore, the results obtained reflect the specifics of this particular time period. As information becomes available over the following years, the analysis will be expanded and panel data processing methods will be used.

2. Only relative indicators were identified as factors. This was done in order to avoid the problem of disparity of indicators when analyzing different-scale NPFs.

The following factors were analyzed in the work:

- 1) V1 - the amount of pension savings of the first NPF per insured person, rubles (the amount of pension savings per one insured person, rubles). According to the Bank of Russia, the average amount of pension savings per 1 insured person in 2019 ranges from 44.6 thousand

rubles in the NPF «Education» to 276.8 rubles in the NPF «Surgutneftegaz». This indicator was used as an estimate of the «size» of the fund.

Indicators V2-V4, V7 and V8 reflect the established system of remuneration of the fund itself and the management companies that cooperate with the fund.

2) V2 - reward ratio in the i-th NPF to the size of pension savings of the Fund, as a percentage (the ratio of the pension Fund's fee to pension savings` amount, %).

3) V3 - the ratio of fixed part of the remuneration of the i-th pension funds and pension savings, as a percentage (ratio of Fund's management fee and pension savings, %)

4) V4 - the ratio of the remuneration of the management company to the amount of pension savings of the i-th NPF, percent ( ratio of the management company's fee to the pension savings` amount, %)

5) V5 - the ratio of the variable part of remuneration of the management company and pension savings funds of the i-th NPF, percent (ratio of the management company's success fee and pension savings, %)

6) V6 - the share of pension savings of the i-th NPF in the total volume of pension savings (in shares of a unit) (non-state pension fund's share in the market,%). The indicator reflects the share held in the pension savings market by this NPF. This factor reflects the "scale effect", and will allow us to assess the impact of the size of the pension savings attracted by the fund on the return on investment.

7) V7 – share of the variable part in the fund's remuneration, as a percentage (share of success fee in fund's fee, %)

8) V8 - the share of the variable part in the remuneration of the management company, as a percentage (share of success fee in management company's fee, %)

9) V9-the ratio of payment for services of the management company and pension savings of the first NPF, as a percentage (ratio of payment for services of the management company and pension savings ). Payment for services means expenses related to the investment of pension savings, which are compensated to the management company by the fund. Compensation is made at the expense of pension savings.

The constructed correlation matrix of all nine factors and the total return on investment of pension savings TR showed the absence of multicollinearity between the factors. The correlation between profitability and factors is not high - the maximum values are -32.7% and 33.4% with V6 and V7 indicators, respectively.

Due to the low correlation, statistically significant models are constructed for only two indicators: V6 - the share of pension savings of the first NPF in the total amount of pension

savings, and V7 - the share of the variable part in the fund's remuneration. At the same time, the growth of the fund's share in the pension savings market leads to a decrease in profitability. The relationship between the share of the variable part in the fund's remuneration and its profitability is direct, which is economically justified and logical.

**Tab. 1: Results of the assessment of the impact of factors on the total return on investment of pension savings (9 factors)**

Regressor	Coefficients	Standard error	t- statistics	P- Value
Constant	23,21002	4,293287	5,406119	4,72796E-05
V1	0,0177	0,0058	3,0524	0,0072
V2	4,3092	1,5488	2,7823	0,0128
V3	-8,0540	2,1836	-3,6885	0,0018
V4	-19,3577	7,7876	-2,4857	0,0236
V5	0,0168	1,4026	0,0120	0,9906
V6	-0,0836	0,0381	-2,1904	0,0427
V7	-0,0861	0,0402	-2,1392	0,0472
V8	-0,0986	0,0434	-2,2713	0,0364
V9	-0,6431	0,2788	-2,3064	0,0339
R=0,860952; R2=0,741238; Adjusted R2=0,604247; Std.Error of estimate: 1,177687				
F=5,410829001 at the significance level p=0,001410627				
Number of observations - 27				

Source: cbr.ru

Table 1 shows the parameters of the multivariate linear regression model. The coefficient of determination  $R^2=0.74$  shows that the selected factors determine the formation of the resulting indicator by 74%. According to F-statistics, the regression equation is generally recognized as statistically significant and can be used to analyze economic processes. All variables, with the exception of V5 (the ratio of the variable part of the management company's remuneration to the pension savings of the i-th fund), are statistically significant, while two variables have a p-value of  $<0.01$ .

The exclusion of the V5 variable allowed us to slightly improve the quality of the model. The results of constructing the model for 8 factors are shown in Table 2.

**Tab. 2: Results of the assessment of the impact of factors on the total return on investment of pension savings (8 factors)**

Regressor	Coefficients	Standard error	t- statistics	P- Value
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Constant	23,18625	3,699241	6,267839	6,54225E-06
V1	0,01767	0,00559	3,16130	0,00540
V2	4,31616	1,39489	3,09426	0,00626
V3	-8,06211	2,01830	-3,99451	0,00085
V4	-19,31351	6,66238	-2,89889	0,00957
V6	-0,08360	0,03689	-2,26641	0,03599
V7	-0,08619	0,03782	-2,27901	0,03509
V8	-0,09830	0,03438	-2,85877	0,01043
V9	-0,64229	0,26224	-2,44924	0,02478
R=0,860951; R2=0,741236; Adjusted R2=0,62623; Std. Error of estimate: 1,144511				
F=6,445178868 at the significance level p=0,000518042				
Number of observations - 27				

Source: cbr.ru

## Conclusion

Only two factors lead to an increase in the profitability of the fund – these are factors V1 (the amount of pension savings raised per insured person) and V2 (the ratio of the total remuneration of the fund to the amount of pension savings of this fund). This dependence is normal and predictable.

Other factors have the opposite effect on the profitability of TR:

1. The inverse relationship between the factor V3 (the ratio of the permanent part of the fund's remuneration and pension savings) and TR-is economically justified. It is clear that the growth of the permanent share in the remuneration of NPF will not contribute to the growth of profitability, as it will not encourage active investment of pension savings.

2. The following relationship - the negative impact of factor V4 (the ratio of the remuneration of the management company to the amount of pension savings) is not normal. It turns out that with an increase in the remuneration of the management company, the profitability of NPF investments decreases.

3. The negative dependence of factor V6 (the share of the fund's pension savings in the total amount of pension savings) means that the growth of the NPF's share in the market does not lead to an increase in profitability and the "scale effect" in relation to the pension savings market does not work.

4. The factors V7 and V8 are the shares of the variable part in the remuneration of the fund and the management company. Their inverse relationship with profitability also indicates that the formation of remuneration to funds and the management company in a particular

analyzed 2019 is incorrect. Or the reason is the inefficiency of the remuneration system for the activities of the NPF and the Criminal Code as a whole.

5. V9-the ratio of the payment for the services of the Criminal Code and the pension savings of the fund . the relationship is reversed. The increase in investment costs leads to a decrease in profitability. Expenses are compensated from pension savings. Control over this type of expenditure and reasonable optimization of these expenses can also lead to an increase in the profitability of investing pension savings.

The results of the study revealed that an increase in the amount of pension savings per insured person leads to an increase in the profitability of the fund. However, the "scale effect" does not work - an increase in the share of the pension fund in the market leads to a decrease in profitability. In addition, an increase in the ratio of the permanent part of the remuneration of the fund and the management company to the amount of pension savings and an increase in the share of the variable part in the remuneration of the pension fund and the management company leads to a decrease in the profitability of the fund. The calculations made it possible to draw a conclusion about the inefficiency of the existing system of remuneration of the Criminal Code, the need to reduce the share of placement of pension savings by management companies and increase the share of independent placement of funds by non-state pension funds.

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