

Calculation of allocation weight of insured persons

The insured persons who entered the mandatory pension and disability insurance for the first time on or after January 1, 2019 and on the date of entering are under 40 years old, in accordance with Article 118 of the Law on Pension and Disability Insurance and had not signed a membership agreement to join a mandatory pension fund with any pension company are mandatory allocated to the mandatory pension fund according to the Law on Mandatory Fully Funded Pension Insurance ("Official Gazette of the Republic of Macedonia" No. 29/2002, 85/2003, 40/2004, 113/2005, 29/2007, 88/2008, 48/2009, 50/2010, 171/2010, 36/2011, 98/2012, 13/2013, 164/2013, 44/2014, 192/2015, 30/2016, 21/2018, 245/2018 and the Official Gazette of the Republic of North Macedonia No. 180/2019)(hereinafter: Law).

According to the Law and the Rulebook of membership in a mandatory pension fund, the Agency for Supervision of Fully Funded Insurance (hereinafter: Agency) every month determines the allocation weight and submits it to the Pension and Disability Insurance Fund that performs allocation of unallocated insured persons according to that allocation weight.

The allocation weight for each mandatory pension fund is determined by the mandatory pension fund rate of return in nominal terms and the value of the fee referred to the Article 98 paragraph (1) item a) of the Law charged by the pension company managing the pension fund (hereinafter: fee from contribution), by using the following formula:

$$P_i = 0.3 * \frac{\frac{1}{N_i}}{\sum_{j=1}^n \frac{1}{N_j}} + 0.7 * \frac{R_i}{\sum_{j=1}^n R_j}, \text{ when all } R_i > 0$$

or,

$$P_i = 0.3 * \frac{\frac{1}{N_i}}{\sum_{j=1}^n \frac{1}{N_{ji}}} + 0.7 * \frac{R_i + |R_{\min}| + 0.01}{\sum_{j=1}^n (R_j + |R_{\min}| + 0.01)}, \text{ when there is } R_i \leq 0$$

where $i = 1, \dots, n$

P_i is allocation weight for mandatory pension fund i

n is the number of mandatory pension funds

N_i is fee from contributions charged by the pension company managing the mandatory pension fund i during the previous month

R_i is the rate of return in nominal terms of the mandatory pension fund i at the last day of the previous month for previous 84 months, converted in equivalent annual rate. If the fund i operates less than 84, but longer than 12 months, the rate of return in nominal terms is calculated for all months the fund operates, converted in equivalent annual rate. If the fund operates less than 36 months, but longer than 12 months, than as a value for R_i is taken the higher value between: rate of return in nominal terms of mandatory pension fund i and the average of rates of return in nominal terms of all existing mandatory pension funds including rate of return in nominal terms of mandatory pension fund i . If the fund i operates less than 12 months, than as a value of R_i is taken the average of rate of returns in nominal terms of existing mandatory pension funds

R_{\min} is the minimum value of all realized rate of returns in nominal terms from all mandatory pension funds ($R_{\min} = \min(R_i)$)

The allocation weight is expressed in percentages, rounded to two decimals.

Examples for the calculation by funds:

Example 1.

Let assume that there are two mandatory pension funds: mandatory pension fund A and mandatory pension fund B. Both pension funds operate 96 months. Let assume that the fees from contribution charged by the pension companies managing the mandatory pension funds, for the month which precedes the calculation month for the allocation weight are:

Pension company which manages the mandatory pension fund A: $N_1 = 4\%$

Pension company which manages mandatory pension fund B: $N_2 = 3\%$

And, let assume that the rates of return of mandatory pension funds in nominal terms at the last day of the month which precedes the calculation month, for the relevant period are:

- Mandatory pension fund A: $R_1 = 4.5\%$
- Mandatory pension fund B: $R_2 = 5\%$

According to the formula above following calculation is done:

Since the rates of return in nominal term of both mandatory pension funds are positive the formula for the first case is applied:

$$P_i = 0.3 * \frac{\frac{1}{N_i}}{\sum_{j=1}^n \frac{1}{N_j}} + 0.7 * \frac{R_i}{\sum_{j=1}^n R_j}$$

The allocation weights are:

$$P_1 = 0.3 * \frac{\frac{1}{4\%}}{\frac{1}{4\%} + \frac{1}{3\%}} + 0.7 * \frac{4.5\%}{4.5\% + 5\%} = 46.02\%$$

$$P_2 = 0.3 * \frac{\frac{1}{3\%}}{\frac{1}{4\%} + \frac{1}{3\%}} + 0.7 * \frac{5\%}{4.5\% + 5\%} = 53.98\%$$

Example 2.

Let assume that there are three mandatory pension funds: mandatory pension fund A, mandatory pension fund B and mandatory pension fund C. All three mandatory pension funds operate 84 months. Let assume that the fees from contribution charged by the pension companies managing the mandatory pension funds, for the month which precedes the calculation month for the allocation weight are:

- Pension company which manages mandatory pension fund A: $N_1 = 3\%$
- Pension company which manages mandatory pension fund B: $N_2 = 4\%$
- Pension company which manages mandatory pension fund C: $N_3 = 3.5\%$

And, let assume that the rates of return of mandatory pension funds in nominal terms at the last day of the month which precedes the calculation month, for the relevant period are:

- Mandatory pension fund A: $R_1 = -0.3\%$
- Mandatory pension fund B: $R_2 = -1.6\%$
- Mandatory pension fund C: $R_3 = 0.2\%$

According to the formula the following calculation is done:

Since there are mandatory pension funds with negative rates of return the formula for the second case is applied:

$$P_i = 0.3 * \frac{\frac{1}{N_i}}{\sum_{j=1}^n \frac{1}{N_{ji}}} + 0.7 * \frac{R_i + |R_{\min}| + 0.01}{\sum_{j=1}^n (R_j + |R_{\min}| + 0.01)}$$

First R_{\min} is calculated.

$$R_{\min} = \min_i (R_i) = R_2 = -1.6\% , \text{ so } |R_{\min}| = 1.6\%$$

The allocation weights are:

$$P_1 = 0.3 * \frac{\frac{1}{3\%}}{\frac{1}{3\%} + \frac{1}{4\%} + \frac{1}{3.5\%}} + 0.7 * \frac{-0.3\% + 1.6\% + 0.01}{(-0.3\% + 1.6\% + 0.01) + (-1.6\% + 1.6\% + 0.01) + (0.2\% + 1.6\% + 0.01)} = 37.90\%$$

$$P_2 = 0.3 * \frac{\frac{1}{4\%}}{\frac{1}{3\%} + \frac{1}{4\%} + \frac{1}{3.5\%}} + 0.7 * \frac{-1.6\% + 1.6\% + 0.01}{(-0.3\% + 1.6\% + 0.01) + (-1.6\% + 1.6\% + 0.01) + (0.2\% + 1.6\% + 0.01)} = 20.11\%$$

$$P_3 = 0.3 * \frac{\frac{1}{3.5\%}}{\frac{1}{3\%} + \frac{1}{4\%} + \frac{1}{3.5\%}} + 0.7 * \frac{0.2\% + 1.6\% + 0.01}{(-0.3\% + 1.6\% + 0.01) + (-1.6\% + 1.6\% + 0.01) + (0.2\% + 1.6\% + 0.01)} = 41.99\%$$

Example 3.

Let assume that there are three mandatory pension funds: mandatory pension fund A, mandatory pension fund B and mandatory pension fund C. Mandatory pension fund A and mandatory pension fund B operate 84 months, but mandatory pension fund C operates 24 months. Let assume that the fees from contribution charged by the pension companies managing the mandatory pension funds, for the month which precedes the calculation month for the allocation weight are:

- Pension company which manages mandatory pension fund A: $N_1 = 4\%$
- Pension company which manages mandatory pension fund B: $N_2 = 3\%$
- Pension company which manages mandatory pension fund C: $N_3 = 3.5\%$

And, let assume that the rates of return of mandatory pension funds in nominal terms at the last day of the month which precedes the calculation month, for the relevant period are:

- Mandatory pension fund A: $R_1 = 5.5\%$
- Mandatory pension fund B: $R_2 = 5\%$

- Mandatory pension fund C: $R_3 = 4\%$

According to the formula the following calculation is done:

Since mandatory pension fund A and mandatory pension fund B operate 84 months and mandatory pension fund C operates 24 months in the formula for calculation of the allocation weight, for the rate of return in nominal terms of the mandatory pension fund C, the higher value between: rate of return in nominal terms of mandatory pension fund C and the average of rates of return in nominal terms of all existing mandatory pension funds, is taken. Respectively in the formula the following values are taken:

- For mandatory pension fund A: $R_1 = 5.5\%$
- For mandatory pension fund B: $R_2 = 5\%$
- For mandatory pension fund C:

$$R^v_3 = \max(R_3; \frac{\sum_{j=1}^3 R_j}{3}) = \max(4\%; 4.83\%) = 4.83\%$$

Since the values for the rates of return in nominal term of all mandatory pension funds are positive the formula for the first case is applied:

$$P_i = 0.3 * \frac{\frac{1}{N_i}}{\sum_{j=1}^n \frac{1}{N_j}} + 0.7 * \frac{R_i}{\sum_{j=1}^n R_j}$$

The allocation weights are:

$$P_1 = 0.3 * \frac{\frac{1}{4\%}}{\frac{1}{4\%} + \frac{1}{3\%} + \frac{1}{3.5\%}} + 0.7 * \frac{5.5\%}{5.5\% + 5\% + 4.83\%} = 33.74\%$$

$$P_2 = 0.3 * \frac{\frac{1}{3\%}}{\frac{1}{4\%} + \frac{1}{3\%} + \frac{1}{3.5\%}} + 0.7 * \frac{5\%}{5.5\% + 5\% + 4.83\%} = 34.33\%$$

$$P_3 = 0.3 * \frac{\frac{1}{3.5\%}}{\frac{1}{4\%} + \frac{1}{3\%} + \frac{1}{3.5\%}} + 0.7 * \frac{4\%}{5.5\% + 5\% + 4.83\%} = 31.93\%$$