PERFORMANCE EVALUATION OF TURKISH TYPE A MUTUAL FUNDS AND PENSION STOCK FUNDS BY USING TOPSIS METHOD

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─Abstract ─
In this paper, it is evaluated performance of Turkish Type A mutual funds and pension stock funds by using TOPSIS method which is a multicriteria decision making approach. Both of these funds compose of stocks in their portfolios, so it can be enabled to compare each other. Generally, mutual or pension funds are evaluated according to their risk and return. At this point, it is used traditional performance measurement techniques of funds like Sharpe ratio, Sortino ratio, Treynor index and Jensen's alpha. TOPSIS method takes into consideration all of these fund performance measurement techniques and provides more reasonable performance measurement.

Key Words: *Pension Funds, Performance Evaluation, Topsis Method, Type A Fund.*
JEL Classification: C02, G20, G23

1. INTRODUCTION

The performance evaluation of pension and mutual funds has been a very interesting research topic not only for researchers, but also for managers of financial, banking and investment institutions and individual investors. Mutual funds are popular investment vehicles which make it easy for small investors to invest their money in a diversified pool of securities. Pension funds are a pool of assets forming an independent legal entity that are bought with the contributions to a pension plan for the exclusive purpose of financing pension plan benefits. Mutual funds are displayed activity for long years, but pension funds are fairly a new investment vehicle in Turkish Capital Market.

Before 1960, portfolio managers evaluated portfolio performance usually on the rate of return, although they knew that risk was a very important variable in determining. The lack of knowledge how to measure and quantify of risk is the reason for omitting it (Gürsoy and Erzurumlu, 2001:44).

Performance evaluation of funds has an importance for investors and portfolio management companies. After the development of portfolio theory in early 60s, and CAPM in subsequent years, studies on portfolio performance evaluation have picked up speed. There are lots of papers on portfolio performance evaluation in the literature, but some fundamental papers are as follows.

Treynor (1965) was the first researcher developing a composite measure of portfolio performance and he measured portfolio risk with beta and calculated portfolio's market risk premium to its beta.

Sharpe (1966) developed a composite index which is similar to the Treynor measure but the only difference is that Sharpe used the standard deviation, instead of beta, to measure the portfolio risk.

Jensen (1968) evaluated 115 mutual funds' performances using "alpha" which is an indicator of the fund managers forecasting ability. He found that fund managers did not have superior performance.

2. PERFORMANCE EVALUATION TECHNIQUES

Performance evaluation of funds is an important issue for fund management and is an important part of the investment activities. Attracting and keeping investors depend on performance of a fund or a portfolio manager. It is widely accepted that performance evaluation should consist of two components; risk and return (Moy, 2002:226).

In the literature, there are several performance evaluation techniques that take into consideration risk in different ways. Some of these techniques are based on standard deviation (total risk) which is a representation of the risk and some of them predicates on systematic risk(beta).

In this paper, Sharpe ratio, Sortino ratio, Treynor index and Jensen's alpha are used in performance evaluation of funds. Sharpe and Sortino ratios are the performance evaluation techniques which based on total risk; the others are based on systematic risk.

2.1. Sharpe ratio

The Sharpe ratio is a risk-adjusted measure of performance, which is often used to evaluate the performance of a portfolio and its manager. The ratio compares the return of the portfolio to the risk-free rate as well as the risk generated by the portfolio. The focus of this ratio is on the return generated by the portfolio in comparison to the amount of risk taken. The more risk taken, the higher the return should be to compensate for the risk. Sharpe ratio is formulated as follows:

$$Sharpe\ \ Ratio = \frac{r_a - r_f}{\sigma_a}.$$

In this formula; r_a is the average return of the portfolio, r_f is risk-free rate of return and σ_a is the standard deviation of the portfolio. The higher the Sharpe ratio, the better the performance of the portfolio is considered to be.

Arising return differential or a falling Standard deviation are both "good" events and they leads to a rise in the Sharpe ratio; conversely, a falling return differential or a rising standard deviation are both "bad" events and they leads to a fall in the Sharpe ratio. Hence, a higher Sharpe ratio is good, and a lower one is bad. When choosing between two alternatives, the Sharpe ratio criterion is therefore to choose the one with the higher Sharpe ratio (Dowd, 2000:211-212).

2.2. Sortino ratio

The Sortino ratio is similar to the Sharpe ratio, which measures the risk-adjusted return of investments or portfolios. Unlike the Sharpe ratio, the Sortino uses downside-volatility (sometimes

referred to as semi-volatility) as the denominator instead of standard deviation. The use of downside-volatility allows the Sortino ratio to measure the return of "negative" volatility.

Downside deviation differentiates "positive" volatility from "negative" volatility, unlike standard deviation. Standard deviation is the square root of volatility. However, using standard deviation as a measure of risk may not be completely accurate. For example, assume investment A has a return of 10% in year one and -10% in year two. Investment B has a 0% return in year one and a 20% return in year two. The total variance in these investments is the same, 20%. However, investment B is obviously more favorable. Because the Sharpe ratio measures risk using standard deviation, the Sharpe ratio does not differentiate between positive and negative volatility. Sortino ratio is calculated by following formula

$$Sortino\ Ratio = \frac{r_a - MAR}{DV},$$

where r_a is the return of a asset or portfolio , MAR is the minimum acceptable return and DV is the downside-volatility.

The Sortino Ratio differentiates between this positive and negative volatility by replacing standard deviation with downside-volatility. Downside-volatility is the volatility of returns below a minimal acceptable return (MAR). Distribution of returns is analyzed below the MAR. The denominator of the Sortino ratio is calculated only with data from periods where performance was below the set MAR. This differentiates the "positive" and "negative" volatility.

Large Sortino Ratios indicate a low risk of large losses occurring and should be considered more by risk conscious investors.

2.3. Treynor index

Treynor (1965) was the first researcher developing a composite measure of portfolio performance. Treynor index provides a measure of excess return per unit of systematic risk (beta). The underlying assumption of the Treynor index is that a multi-asset portfolio diversifies unsystematic risk away and the relevant risk that remains is systematic risk. Treynor index is calculated as:

$$Treynor\ Index = \frac{r_a - r_f}{\beta_a}.$$

In this index, the numerator is identical to the Sharpe ratio. Therefore, both Treynor and Sharpe measure excess returns for a given level of risk.

2.4. Jensen's alpha

Alpha is a coefficient that is proportional to the excess return of a portfolio over its required return, or its expected return, for its expected risk as measured by its beta. Jensen's alpha, developed by Jensen(1968), assumes that the Capital Asset Pricing Model(CAPM) is empirically valid. Jensen's alpha is computed by the following regression equation:

$$r_a - r_f = \alpha + \beta(r_m - r_f) + e_t .$$

In the above equation, r_a is the arithmetic average of the returns, r_f is the arithmetic average of the risk-free interest rate returns, r_m is the return of the benchmark portfolio, β is the fund' systematic risk and e_t is the random error term of the fund at period t .

A positive value of alpha indicates superior risk-adjusted performance, while a negative value indicates inferior risk-adjusted performance (Cesari and Panetta, 2002:106). Jensen performance criterion does not evaluate the ability of portfolio managers to diversify, since the risk premiums are calculated in terms of β (Gürsoy and Erzurumlu, 2001:45).

3. TOPSIS METHOD

TOPSIS (**T**echnique for **O**rder **P**reference by **S**imilarity to **I**deal **S**olution) method is one of the useful multi-criteria decision making techniques and was firstly proposed Hwang and Yoon (1981). According to this technique, the chosen alternative should have the shortest distance from the positive ideal solution(PIS) and the farthest from the negative ideal solution(NIS). The PIS is a solution that maximizes the benefit criteria and minimizes the cost criteria, whereas the NIS maximizes the cost criteria and minimizes the benefit criteria(Benitez, Martin and Roman, 2007:548). The TOPSIS method takes into consideration simultaneously the distances to both the PIS and the NIS. The solution which is closest the PIS and farthest to NIS is the ideal solution.

In this paper, TOPSIS method is used for determining the final ranking of Turkish Type A mutual funds and pension stock funds. In the following the steps of TOPSIS method are given:

Step 1: Decision matrix is normalized by using following equation:

$$r_{ij} = \frac{a_{ij}}{\sqrt{\sum_{i=1}^{m} a_{ij}^{\,2}}}, \quad i = 1,...,m; \; j = 1,...,n .$$

Step 2: Weighted normalized decision matrix is formed:

$$v_{ij} = w_i * r_{ij}, \; i = 1,...,m; \; j = 1,...,n .$$

Step 3: PIS (positive ideal solution) and NIS (negative ideal solution) are determined:

$A^* = \left(v_1^*, v_2^*, ..., v_j^*, ..., v_n^*\right)$ maximum values,

$A^- = \left(v_1^-, v_2^-, ..., v_j^-, ..., v_n^-\right)$ minimum values.

Step 4: The distance of each alternative from PIS and NIS is calculated as:

$$d_i^* = \sqrt{\sum_{j=1}^{n} (v_{ij} - v_j^*)^2}, \quad i = 1,2,...,m.$$

$$d_i^- = \sqrt{\sum_{j=1}^{n} (v_{ij} - v_j^-)^2}, \quad i = 1,2,...,m.$$

Step 5: The closeness coefficient of each alternative (CC_i) is calculated as:

$$CC_i = \frac{d_i^-}{d_i^* + d_i^-}.$$

Step 6: The ranking of alternatives is determined by comparing CC_i values.

4. PERFORMANCE EVALUATION OF TURKISH TYPE A AND PENSION STOCK FUNDS

4.1. Research data

Data used in this research includes monthly returns of 11 Type A stock mutual funds and 11 Pension stock mutual funds in January 2007- December 2008 analysis period. Funds names and codes which are used in the research are given in Table 1 and Table 2.

Table 1. Pension Stock Funds and Funds' Codes

Pension Stock Mutual Funds	Fund Code
Aegon Stock Income PMF	ANS
Avivasa Stock Growth PMF	AEB
Avivasa Stock PMF	AEH
Anadolu Hayat Stock Growth PMF	AH5
Anadolu Hayat Stock Growth Group PMF	AG3
Anadolu Hayat Stock Growth PMF -Beyaz	AHB
Başak Stock Growth PMF	BEH
Garanti Stock Growth PMF	GEH
Oyak Stock Growth PMF	OEH
Vakıf Stock Growth PMF	VEH
Yapı Kredi Stock Growth PMF	YEH

Table 2. Type A Stock Mutual Funds and Funds' Codes

Type A Stock Mutual Funds	Fund Code
Akbank Type A Stock MF	AK3
Denizbank Type A Stock MF	DAH
Eczacıbaşı Menkul Değerler Type A Stock MF	ECH
Finansbak Type A Stock MF	FAF
Fortis Yatırım Menkul Değerler Type A Stock MF	FAS
ING Bank Type A Stock MF	IGH
T. Garanti Bankası Type A Stock MF	GHS
T. İş Bankası Type A Stock MF	TI2
TEB Yatırım Type A Stock MF	TYH
Tekstilbank Type A Stock MF	TAH
Yapı Kredi Type A Stock MF	YHS

4.2. Returns rate of funds

Monthly returns of funds are calculated by using unit prices of them in operation date. Data are obtained from official website of Capital Markets Board of Turkey (CMB, 2009). Monthly return of a fund is calculated by following equation:

$$r = ln\, r_{t+1} - ln\, r_t \,.$$

In the equation; r is monthly return of the fund, r_{t+1} is closing price of the fund at $(t + 1)^{th}$ month and r_t is closing price of the fund at t^{th} month.

4.3. Risk-free return rate

Various risk-free return rates, which are appropriate to structure of the funds, are used in the literature. In this research, monthly Domestic Government Bonds (DGS) Performance index is used. Data of DGS performance index is obtained from Istanbul Stock Exchange (ISE) official website (ISE, 2009).

4.4. Benchmark

In this paper, ISE 100 National Index is used for benchmark to pension stock funds and Type A stock funds. It is supposed appropriate for pension stock funds in "Individual Pension System Progress Report 2008" which is prepared by Pension Monitoring Centre. To confirm the appropriateness of this benchmark for Type A stock funds, correlation analysis is used. It is found that correlation coefficient of Type A stock funds' returns between ISE 100 National Index returns is average 0.90. Therefore, ISE 100 national Index is an appropriate benchmark for Type A stock funds. Monthly closing prices of ISE 100 national Index are obtained from Istanbul Stock Exchange official website (ISE, 2009). Monthly returns of ISE 100 are calculated as follows:

$$r = ln\, r_{t+1} - ln\, r_t \,.$$

In the above equation; r is monthly return of the index, r_{t+1} is closing price of the index at $(t + 1)^{th}$ month and r_t is closing price of the index at t^{th} month.

4.5. Unit Root Test Results

In this paper, unit root test is applied to test whether the time series are stationary or not. Stationarity of a series is an important phenomenon because it can influence its behavior. For a stationary series a shock will gradually die away in time and the series will turn back its average value for long run. In literature, Dickey-Fuller and Augmented Dickey-Fuller(ADF) tests are the best known ones for stationarity of the series. The testing procedure for the ADF test can be formulated as follows

$$\Delta y_t = \alpha + \beta t + \gamma y_{t-1} + \delta_1 \Delta y_{t-1} + \cdots + \delta_p \Delta y_{t-p} + \varepsilon_t ,$$

where α is constant, β the coefficient on a time trend and p the lag order of the autoregressive process. The unit root test is then carried out under the null hypothesis, H_0: $\gamma = 0$, against the alternative hypothesis of H_1: $\gamma < 0$. The value of the test statistic,

$$DF_\tau = \frac{\hat{\gamma}}{SE(\hat{\gamma})}$$

is computed and it can be compared to the relevant critical value for the ADF Test. If the test statistic is greater (in absolute value) than the critical value, then the null hypothesis of $\gamma = 0$ is rejected and no unit root is present. The ADF tests results of the funds and the benchmark are given in Table 3.

Table 3: Unit Root Test Results

Names of Funds and Benchmark	ADF test Statistics
Aegon Stock Income PMF	-5,54404*
Akbank Type A Stock MF	- 6,07976*
Anadolu Hayat Stock Growth PMF	-6,16713*
Anadolu Hayat Stock Growth Group PMF	-6,29392*
Anadolu Hayat Stock Growth PMF –Beyaz	-5,62541*
Avivasa Stock Growth PMF	-6,07040*
Avivasa Stock PMF	-6,41663*
Başak Stock Growth PMF	-6,12941*
Denizbank Type A Stock MF	-5,70684*
Eczacıbaşı Menkul Değerler Type A Stock MF	-5,07937*
Finansbak Type A Stock MF	-5,70935*
Fortis Yatırım Menkul Değerler Type A Stock MF	-5,35576*
Garanti Stock Growth PMF	-5,62230*
ING Bank Type A Stock MF	-5,35207*
Oyak Stock Growth PMF	-8,06000*
T. Garanti Bankası Type A Stock MF	-5,39664*
T. İş Bankası Type A Stock MF	-5,28046*
TEB Yatırım Type A Stock MF	-5,80443*
Tekstilbank Type A Stock MF	-5,01947*
Vakıf Stock Growth PMF	-5,62811*
Yapı Kredi Stock Growth PMF	-6,02109*
Yapı Kredi Type A Stock MF	-5,73944*
ISE 100 National Index	-5,60442*

* indicates that the series is significant at 1% importance level. McKinnon critical values at 1%, 5% and 10% importance levels are -3, 76960, -3, 00487 and -2, 64224, respectively.

4.6. Findings

Table 4. Fund Performance Evaluation with Performance Measurement Techniques				
Names of Funds	Sharpe	Sortino	Treynor	Jensen
Aegon Stock Income PMF	-0,2789	-0,8244	-0,0322	0,0000
Akbank Type A Stock MF	-0,3009	-0,6146	-0,0345	-0,0017
Anadolu Hayat Stock Growth PMF	-0,2440	-1,9112	-0,0276	0,0042
Anadolu Hayat Stock Growth Group PMF	-0,2624	-0,9524	-0,0296	0,0022
Anadolu Hayat Stock Growth PMF – Beyaz	-0,2802	-0,9983	-0,0328	-0,0005
Avivasa Stock Growth PMF	-0,3091	-0,9499	-0,0354	-0,0028
Avivasa Stock PMF	-0,3414	-0,9649	-0,0389	-0,0389
Başak Stock Growth PMF	-0,4114	-1,1480	-0,0487	-0,0133
Denizbank Type A Stock MF	-0,4577	-0,6041	-0,0545	-0,0135
Eczacıbaşı Menkul Değerler Type A Stock MF	-0,2457	-0,1364	-0,0280	0,0034
Finansbak Type A Stock MF	-0,2019	-0,7518	-0,0230	0,0077
Fortis Yatırım Menkul Değerler Type A Stock MF	-0,2725	-0,7277	-0,0328	-0,0004
Garanti Stock Growth PMF	-0,2935	-0,9523	-0,0337	-0,0013
ING Bank Type A Stock MF	-0,3981	-0,4873	-0,0478	-0,0090
Oyak Stock Growth PMF	-0,2492	-0,7544	-0,0310	0,0012
T. Garanti Bankası Type A Stock MF	-0,2928	-0,1551	-0,0330	-0,0005
T. İş Bankası Type A Stock MF	-0,2600	-0,3254	-0,0302	0,0015
TEB Yatırım Type A Stock MF	-0,3186	-0,2446	-0,0363	-0,0033
Tekstilbank Type A Stock MF	-0,3049	-0,2929	-0,0398	-0,0048
Vakıf Stock Growth PMF	-0,2811	-0,9011	-0,0320	0,0002
Yapı Kredi Stock Growth PMF	-0,2924	-0,9070	-0,0338	-0,0014
Yapı Kredi Type A Stock MF	-0,2475	-0,2327	-0,0274	0,0037

Funds' performances which are evaluated based on Sharpe ratio, Sortino ratio, Treynor index and Jensen's alpha are given in Table 4. According to the Table 4, there is not a dominant alternative. To determine the priorities of criteria, factor analysis is used for objectivity. In factor analysis, variables are clustered in three factors. These three factors explain almost overall variance, i.e., 99,672%. First factor explains 63,394% of overall variance, second factor explains 25,443% of overall variance and third factor explains 10, 835% of overall variance. To find the priorities of criteria, factor rotation is made using varimax method and as a result of factor rotation, factor matrix is obtained in Table 5.

Table 5. Factor Matrix

	Component		
	1	2	3
Sharpe	,945	,316	-,010
Sortino	-,024	,044	,999
Treynor	,954	,286	-,032
Jensen	,395	,917	,059

In the above Table, variables (criteria) are listed in the rows and factors are listed in the columns. The values are placed in the Table are factor loadings.

Taking into consideration factor loadings which mean the relationships among each variable (criteria) and three factors, undetermined part of the overall variance by the each variable(1 – 0,99672 = 0,00328) is allocated to factors in their percentage of explain. For example, the value $0,00328 * 0,63394 = 0,0020$, is added to first factor's percentage explain of overall variance. Therefore, adjusted percentage of explain all variables are 0,63594, 0,25523 and 0,10865 ,respectively. These values also denote the importance level of the factors. Then, the relationships are checked among the factors and the variables. In factor matrix, the first factor is highly related to the Sharpe ratio and Treynor index, the second factor is highly related to the Jensen's alpha and the third factor is highly related to the Sortino ratio. Importance level of first factor (0,63594) is allocated 1st and 3rd variables in proportion with their factor loadings. For example, the sum of first factor loadings' 1st and 3rd variables is 0,945 + 0,954 = 1,899. Thus, importance level of first variable is $0,63594 * 0,945 / 1,899 = 0,3165$. The importance levels of the other variables are found as 0,1086, 0,3195 and 0,2552, respectively.

Table 6. Weighted Normalized Decision Matrix of Funds

Names of Funds	**Sharpe** *0,3165*	**Sortino** *0,1088*	**Treynor** *0,3195*	**Jensen** *0,2552*
Aegon Stock Income PMF	-0,2789	-0,8244	-0,0322	0
Akbank Type A Stock MF	-0,3009	-0,6146	-0,0345	-0,0017
Anadolu Hayat Stock Growth PMF	-0,244	-1,9112	-0,0276	0,0042
Anadolu Hayat Stock Growth Group PMF	-0,2624	-0,9524	-0,0296	0,0022
Anadolu Hayat Stock Growth PMF –Beyaz	-0,2802	-0,9983	-0,0328	-0,0005
Avivasa Stock Growth PMF	-0,3091	-0,9499	-0,0354	-0,0028
Avivasa Stock PMF	-0,3414	-0,9649	-0,0389	-0,0389
Başak Stock Growth PMF	-0,4114	-1,148	-0,0487	-0,0133
Denizbank Type A Stock MF	-0,4577	-0,6041	-0,0545	-0,0135
Eczacıbaşı Menkul Değerler Type A Stock MF	-0,2457	-0,1364	-0,028	0,0034
Finansbak Type A Stock MF	-0,2019	-0,7518	-0,023	0,0077
Fortis Yatırım Menkul Değerler Type A Stock MF	-0,2725	-0,7277	-0,0328	-0,0004
Garanti Stock Growth PMF	-0,2935	-0,9523	-0,0337	-0,0013
ING Bank Type A Stock MF	-0,3981	-0,4873	-0,0478	-0,009
Oyak Stock Growth PMF	-0,2492	-0,7544	-0,031	0,0012
T. Garanti Bankası Type A Stock MF	-0,2928	-0,1551	-0,033	-0,0005
T. İş Bankası Type A Stock MF	-0,2600	-0,3254	-0,0302	0,0015
TEB Yatırım Type A Stock MF	-0,3186	-0,2446	-0,0363	-0,0033
Tekstilbank Type A Stock MF	-0,3049	-0,2929	-0,0398	-0,0048
Vakıf Stock Growth PMF	-0,2811	-0,9011	-0,032	0,0002
Yapı Kredi Stock Growth PMF	-0,2924	-0,907	-0,0338	-0,0014
Yapı Kredi Type A Stock MF	-0,2475	-0,2327	-0,0274	0,0037

Then the distance of each firm from PIS and NIS with respect to each criterion are calculated. Then closeness coefficient of each fund is calculated and the ranking of the funds are determined according to these values.

The ranking of the funds are shown in Table 7. It is found that Anadolu Hayat Stock Growth PMF has the best performance and Yapı Kredi Type A Stock MF has the worst performance among the 22 funds. In final rankings of funds, it is seen that pension mutual stock funds have higher performance than the Type A mutual stock funds.

Table 7. Rankings of Funds According to CC_i Values

Names of Funds	d_i^*	d_i^-	CC_i	No
Aegon Stock Income PMF	0,8346	0,6310	0,4305	**10**
Akbank Type A Stock MF	0,6406	0,4359	0,4049	**15**
Anadolu Hayat Stock Growth PMF	1,9038	1,7062	0,4726	**1**
Anadolu Hayat Stock Growth Group PMF	0,9559	0,7538	0,4409	**7**
Anadolu Hayat Stock Growth PMF –Beyaz	1,0045	0,8020	0,4440	**3**
Avivasa Stock Growth PMF	0,9638	0,7601	0,4410	**6**
Avivasa Stock PMF	0,9874	0,7832	0,4423	**4**
Başak Stock Growth PMF	1,1822	0,9777	0,4527	**2**
Denizbank Type A Stock MF	0,7031	0,5062	0,4186	**14**
Eczacıbaşı Menkul Değerler Type A Stock MF	0,2086	0,1243	0,3733	**18**
Finansbak Type A Stock MF	0,7476	0,5470	0,4225	**12**
Fortis Yatırım Menkul Değerler Type A Stock MF	0,7395	0,5354	0,4200	**13**
Garanti Stock Growth PMF	0,9624	0,7592	0,4411	**5**
ING Bank Type A Stock MF	0,5726	0,3783	0,3979	**16**
Oyak Stock Growth PMF	0,7596	0,5565	0,4228	**11**
T. Garanti Bankası Type A Stock MF	0,2583	0,1579	0,3793	**17**
T. İş Bankası Type A Stock MF	0,3610	0,1651	0,3138	**21**
TEB Yatırım Type A Stock MF	0,3344	0,1786	0,3481	**19**
Tekstilbank Type A Stock MF	0,3608	0,1826	0,3360	**20**
Vakıf Stock Growth PMF	0,9097	0,7066	0,4372	**9**
Yapı Kredi Stock Growth PMF	0,9181	0,7147	0,4377	**8**
Yapı Kredi Type A Stock MF	0,2771	0,1063	0,2772	**22**

5. CONCLUSION

In this paper, it is evaluated performance of Turkish pension stock mutual funds and Type A stock mutual funds in the period January 2007-December 2008 by using monthly returns of the funds. Firstly, it is analyzed that the returns series are stationary or not. After the determining the all of the series are stationary, performance evaluations of the series are obtained by using performance measurement techniques; Sharpe ratio, Sortino ratio, Treynor index and Jensen's alpha.

According to performance evaluation results, it is not found a dominant alternative. Therefore, to obtain the priorities of the performance evaluation techniques it is used the factor analysis. The variables are clustered in there factors. The final rankings of the funds are obtained by using TOPSIS method which is a multicriteria decision making approach. The aim of the TOPSIS

method is to choose the alternative that should have the shortest distance from the positive ideal solution and the farthest from the negative ideal solution.

It is found that Pension Stock Mutual Funds have superior performance than the Type A Stock Mutual funds. Anadolu Hayat Stock Growth PMF has the best performance and Yapı Kredi Type A Stock MF has the worst performance among the 22 funds.

This paper has the unique about the performance evaluation of Turkish pension Stock Funds and Type A Stock Mutual Funds with multicriteria decision approach. It can be applied all pension and mutual funds.

Findings obtained from this paper have benefits for individual investors, fund managers and researchers.

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