Performance Evaluation of A-Type Turkish Mutuals Funds in the Era of Quantitative Easing

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Abstract

This paper aims to evaluate the performance of A-type Turkish funds between January 2009 and November 2014. This study period coincides with the period of quantitative easing during which developing economies in financial markets have been influenced dramatically. Thanks to the increase in the money supply directed towards the capital markets, a relief was experienced in related markets following the crisis period. During this 5-year 10-month period, in which the relevant quantitative easing continued, Borsa Istanbul (BIST) yielded 21% compounded on average, per annum. A-type Turkish funds are investigated in order to compare these funds performance within this period. Within this framework, 15 A-type equity funds and 18 A-type variable funds are selected. So as to measure these funds' performance, Sharpe ratio (1966), Treynor ratio (1965) and Jensen alpha (1968) methods are used. Moreover, Jensen's alpha also provides information on selectivity skills of fund managers. Furthermore, Treynor&Mazuy (1966) regression analysis method is applied for market timing ability of fund managers.

Keywords: Performance Evaluation; Mutual Funds; Sharpe Ratio; Jensen's alpha

1 Introduction

The mutual fund performance has always kept its place of being one of the most researched points in finance studies. Using diverse technical measurement methods, all of these studies analyse fund performances of various markets from different perspectives. Notably, following the period of the liberalization of financial markets, mutual funds have gained much more importance in the eyes of the investors and this resulted in the broad studies that are carried out on the performance evaluations. Mutual funds bring those investors together who share a common goal. They invest the money they collect into capital market instruments such as shares, debentures and other investment securities. The total income acquired from investments

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and the capital appreciation is equally shared among unit holders, by taking into account the units owned by them. In consequence, mutual fund is the best way of investment as it provides the opportunity of investing various and professionally managed basket of securities at a relatively low cost (Deepak, 2011).

After the global financial crisis in 2008, Fed decided to use quantitative easing policy in order to lower long-term interest rates. During the quantitative easing policy, monetary supply increases and creates excess of money in the financial markets. Quantitative easing (QE) policy began in December 2008 and ended in October 2014. Quantitative easing policy is divided into four terms QE1 (December 2008 - June 2010), QE2 (November 2010 - June 2011), QE3 (September 2012 - October 2014) and finally QE4 (January 2013 - October 2014). ("QE", Useconomy, 2015). During the period, huge amount of money inflow from developed countries to developing countries was experienced. Therefore, in this paper, we have attempted to investigate performances of Turkish equity funds and variable funds between 09 January 2009 - 31 0ctober 2014 in the era of quantitative easing. Turkey is considered as an emerging market and during the study period of five years and ten months, Turkish stock market beat developed stock market indices. Turkish Borsa Istanbul yielded 21% compounded on average, per annum. In the sample period, the developed market indices S&P 500, DAX, FTSE 100 and CAC 40 yielded 15.1%, 12.1%, 6.8% and 4.1%, respectively. Turkish Borsa Istanbul also exceeds some important emerging markets' stock exchange; India (CNX500) Index, Johannesburg Stock Exchange (JSE), Mexican Stock Exchange (BOLSA), Taiwanese Stock Exchange (TWSE) and Warsaw Stock Exchange (WSE) grew by; 20.9%, 15.9%, 13.3%, 12.9% and 12.8%, respectively, per annum. We have tried to find out whether fund managers could show a parallel performance to that of BIST100 index. This paper is organized as follows: Section 2 gives the literature review of fund performances, Section 3 discusses methodology and data, Section 4 interprets empirical results and Section 5 is the conclusion of the study.

2 Literature Review

After the 1950s, there have been many studies carried out on the mutual fund performance. Treynor (1965), Sharpe (1965) and Jensen (1968) are among the first who measure fund performance related to risk and return measurements. Sharpe calculated 34 open-ended mutual funds between the years 1954-1963 by using Sharpe and Treynor ratio. As a result, while 11 funds denoted better performance than index, 23 funds underperformed their benchmark. Jensen (1968) studied on 115 mutual funds that were activated between the years 1945-1964 with alpha indicator that he had formerly generated. According to his results, funds couldn't exceed the market performance that revealed mutual fund managers, in general, did not have selective ability. The study found out that there is a positive correlation between risk and return. McDonald (1973), Blake, Elton, and Gruber (1993), Detzler (1999) also evaluated mutual funds. They found that funds couldn't beat the market.

Treynor and Mazuy (1969) found quadratic regression analysis method in order to measure market timing ability of fund managers. They applied this method to 57 open-end mutual funds. They could only reveal one fund that had statistically significant market timing ability. Henriksson and Merton (1981) and Henriksson (1984) developed both parametric and non-parametric statistical models to test market timing ability of portfolios. So as to test market timing ability of 116 open-end funds from 1968 to 1980 in the U.S.A market, Henriksson (1984)

applied these parametric and non-parametric tests, which were introduced by Henriksson and Merton (1981). The results disclosed that there wasn't any support of market timing ability. Furthermore, Henriksson found inverse relationship between selection ability and market timing ability.

In Turkey, studying on mutual fund performance has become popular among academicians after 1990s. Gürsoy and Erzurumlu (2001), Kılıç (2002), Arslan (2005), Akel (2007), Korkmaz and Uyguntürk (2009)), evaluated mutual funds. According to their results, funds couldn't beat the market and fund managers couldn't show both selectivity skills and market timing ability.

3 Methodology and Data

3.1 Methodology

In this study, we have tried to evaluate both funds and funds managers' performance of Turkish equity and variable funds. A total of 15 equity funds and 18 variable funds performances' are analyzed. In order to evaluate fund performance, Sharpe ratio (1966), Treynor ratio (1965) and Jensen alpha (1968) are computed. Jensen alpha also depicts selectivity skills of fund managers. For determining market timing ability of fund managers, Treynor&Mazuy (1966) regression analysis is applied.

3.1.1 Sharpe Ratio

The Sharpe technique was developed in 1966 and similar to the Treynor technique, but the Sharpe technique uses the total risk of the portfolio rather than systematic risk. This technique computes the risk premium earned per unit of the total risk. The Sharpe value can be calculated as follows (Noulas, Papanastasiou, and Lazaridis, 2005).

$$S_p = (R_p - R_f)/\sigma_p \tag{1}$$

Where S_p is the Sharpe's portfolio performance measure for fund p over the evaluation period. R_f is the average rate of return for fund p over the evaluation period. R_f is the average risk free return over the evaluation period σ_p is the standard deviation of the fund p over the evaluation period. Sharpe ratio (S_p) measures the risk-adjusted performance and the higher value of this ratio shows that the fund delivers a higher return performance for each unit of risk it carried (σ_p) (Duggimpudi, Abdou, and Zaki, 2010).

3.1.2 Treynor Ratio

The Treynor ratio is the first risk-adjusted performance measure of mutual funds that was put forward by Treynor in 1965. It is calculated as the ratio of excess return of the mutual fund divided by its beta (systematic risk) and is defined as: (Kouris, Beneki, Adam, and Botsaris, 2011).

$$T_i = (R_p - R_f)/\beta_p \tag{2}$$

where T_i = Treynor's performance index, R_p = Portfolio's actual return during a specified time period, R_f = Risk-free rate of return during the same period, β_p = Beta of the portfolio.

Whenever $R_p > R_f$ and $\beta_p > 0$ a larger T value means a better portfolio for all investors regardless of their individual risk preferences. In two cases, we may have a negative T value: when $R_p < R_f$ or when $\beta_p < 0$. If T is negative because of the fact that $R_p < R_f$ we deduce the portfolio performance as very poor, whereas if the negativity of T comes from a negative beta, fund's performance is glorious. Finally, when $R_p - R_f$, and $\beta_p < 0$ are both negative, T will be positive, but so as to qualify the fund's performance as good or bad, we should see whether R_p is above or below the security market line pertaining to the analysis period (Reilly, 1992).

3.1.3 Jensen Alpha

A portfolio manager's *predictive ability* - that is his ability to earn returns through successful prediction of security prices which are higher than those which we could expect to give the level of his riskiness of his portfolio (Jensen, 1968). Jensen model can be written as below:

$$R_{pt} - R_{ft} = \alpha_p + \beta_p(R_{mt} - R_{ft}) + e_{pt} \tag{3}$$

α_p is the excess return of the portfolio after adjusting for the market, R_{pt} is the return on portfolio p at time t, R_{ft} is the return on a riskless asset at time t, R_{mt} is the return on the market portfolio at time t, β_p is the sensitivity of the excess return on the portfolio p with the excess return on the market.

The Jensen performance index permits the comparison of portfolio's managers' performance relative to one another or to the market. The numerical values of alpha permit the ranking of performance, with the higher scores showing the better performances. The sign of the alpha displays whether the portfolio manager is superior to the market after adjusting for risk. A positive alpha implies a better performance relative to the market, and a negative alpha indicates a poorer performance (Mayo, 2010).

3.1.4 Treynor & Mazuy Model

Investment managers may well beat the market, if they are able to adjust the composition of their portfolios in time when the general stock market is going up or down. That is, if fund managers believe the market is going to drop, they alter the composition of the portfolios they manage from more to less volatile securities. If they think the market is going to climb, they shift in the opposite direction (Treynor and Mazuy, 1969).

Mutual fund managers may hold a higher proportion of the market portfolio if they are qualified to predict future market conditions and envisage the stock market as a bull market. On the other hand, mutual fund managers may hold a lower proportion of the market portfolio if they expect the market to underperform in the future. Treynor and Mazuy (1969) developed the following model to evaluate market-timing performance:

$$R_{i_t} - R_{f_t} = \alpha_i + \beta_{i_0}(R_{m_t} - R_{f_t}) + \beta_{i_1}(R_{m_t} - R_{f_t})^2 + \varepsilon_t \tag{4}$$

where α_i is the timing-adjusted alpha, which represents the timing-adjusted selective ability of mutual fund managers. The quadratic term in equation (4) is the market timing factor and the coefficient of the market timing factor, β_{i_1}, represents mutual fund managers' market

timing ability. If β_{i_1} is positive, mutual fund managers have superior market timing ability i.e., the investment portfolios of mutual funds are adjusted actively to well-anticipated changes in market conditions. A negative β_{i_1} implies that mutual fund managers do not exhibit market timing ability (Chen, Gan, and Hu, 2013).

3.2 Data

In this paper, we analysed mutual fund performance of 15 Turkish equity and 18 variable funds by using Sharpe (1966), Treynor (1965) and Jensen (1968) measures. In order to test mutual fund managers' market timing ability, Treynor&Mazuy (1966) method is applied. Time period is chosen between January 2009-October 2014 on which quantitative easing (QE) term. Weekly returns of funds are used and 304 weeks (09 January 2009-31 October 2014) are observed for this study. Except for O/N Net Repo Index, all data are taken from the "Thomson Reuters DataStream". O/N Net Repo index is taken from Turkish Institutional Investment Managers' Associations (TKYD).

Mutual funds are categorized into A-type and B-type funds. A-type funds are those funds that invest at least 25% of their portfolio in stocks of Turkish companies. There is no such provision for B-type funds to invest in stocks. Since they hold a larger share of stocks in their portfolios, A-type funds have more risk and are more susceptible against stock exchange volatility and price fluctuations. Hence, A-type funds need more attention. According to containing of financial assets of A-type and B-type funds are identified to sixteen forms. These are; bonds and bills funds, stocks, sector funds, affiliated funds, group funds, foreign currency securities funds, gold and other precious metal funds, variable funds, mixed funds, liquid funds, index funds, fund basket, guaranteed funds, protected funds, special funds and hedge funds. These fund forms are established as either A-type or B-type, but liquid funds are merely B-type (Yolsal, 2012).

In Turkey, there are 135 A-type Funds and 354 B-type funds, a total of 489 mutual funds in Turkey based on data as of 31 October 2014. However, the volume of A-type funds is very low compared to B-type funds. Total net asset value of B-type funds is 33.3 billion TL, whereas A-type funds' total net asset value is only 1.9 billion TL. This study evaluates performances of 33 A-type funds (fifteen equity funds and eighteen variable funds) in Turkey. Among all mutual funds, equity funds and variable funds are those funds that carry company stocks, which are riskier and more vulnerable to volatility in prices. In total, there are 77 of these funds (48 variable funds and 29 equity funds). The performances of those funds that were closed, newly established or that merged with another fund in the study period were not evaluated. Also those equity and variable funds that had less than 50% equity shares in their portfolio were excluded in the study. Afterwards, 33 equity and variable funds were filtered to work with.

3.2.1 Returns of Funds

Logarithmic returns of funds were computed over weekly price indices of funds. For the study, 304 weekly data between 09.01.2009 and 31.10.2014 are used.

3.2.2 Benchmark

In this study, BIST100 price index is used as a benchmark to evaluate whether a fund could outperform the market. Logarithmic weekly returns of BIST100 are used in the corresponding study period.

3.2.3 Risk-free Rate

O/N Net Repo Index provided by TKYD, is used as the proxy for the risk free rate. TKYD O/N Net Repo Index uses daily value-weighted averages of BIST Repo/Reserve Repo rates as the overnight return. The rate that adds in the withholding tax is multiplied by the days to the maturity and finally divided by 365 in order to calculate the daily gross O/N repo index value. The same formulation is used to calculate the net O/N repo index by excluding withholding tax from the overnight return at first (Yalçın, 2012).

$$E_t = E_{t-1} \times [1 + R \times v/365] \tag{5}$$

E_t = Value of KYD Repo Index on day t, E_{t-1} = Value of KYD Repo Index on day $t-1$, R = Average rate of return realized BIST Repo/Reserve Repo Market v = Maturity of Repo/Reserve Repo agreement.

As the risk-free rate, we use weekly returns of the net overnight repo index provided by TKYD.

4 Empirical Results

Table (1) lists the Sharpe and Treynor ratios computed for these 33 funds. The higher the Sharpe ratio, the more return the investor is getting per unit of risk. The lower the Sharpe ratio, the more risk the investor is carrying to earn additional returns. Higher Sharpe and Treynor ratios imply better risk-adjusted performances. For Sharpe Ratio, Strateji Securities A-type Equity Fund, Alternatif Bank A-type Equity Fund, Alternatif Bank A-type Variable Fund, Gedik Securities A-type Equity Fund and Finans Yatırım Securities A-type Variable Fund have the highest performances. For Treynor ratio, Strateji Securities A-type Equity Fund, Alternatif Bank A-type Variable Fund, Alternatif Bank A-type Equity Fund, Garanti Bank A-type Variable Fund and Gedik Securities A-type Equity Fund have the highest performances.

Table (2) gives us the results of Jensen's alpha measure that indicate selectivity skills of fund managers. Fund managers have either higher or lower performance relative to the market. 21 of the 33 funds have positive alphas, but only 5 of these funds are statistically significant. Alternatif Bank A-type Variable Fund is statistically significant at 10% level, Finans Yatırım Securities A-type Variable Fund, Gedik Securities A-type Equity Fund and Finansbank A-type Equity Fund are statistically significant at 5% level, Strateji Securities A type Equity Fund statistically is significant at 1% level. It is interpreted that these funds' managers don't have selectivity skills in the quantitative easing era.

Table (3) shows results of Treynor&Mazuy (1966) model, which indicates the market timing ability of fund managers. If fund managers think that market is going up, they change their portfolio composition from less volatile to high volatile securities or when market is going down, they shift their portfolio composition from high volatile to less volatile securities. If fund

managers have market timing ability, they create their portfolios according to their estimating tendency of the markets. 8 of the 33 funds have positive market timing ability, but merely 3 of them are statistically significant. Eczacıbaşı A-type Variable Fund is statistically significant at 1% level, Yapı Kredi A-type Variable Fund is statistically significant at 5% level and Eczacıbaşı A-type Equity Fund is statistically significant at 10% level. 25 funds have negative market timing ability and 15 of them statistically significant. It is derived that fund managers don't have market timing ability during the study period.

Table 1: Results of Sharpe and Treynor Ratio

Fund Name	**Sharpe**	**Rank**	**Treynor**	**Rank**
Strateji Securities A Type Equity	0,1432	1	0,00561	1
Alternatif Bank A Type Equity	0,12187	2	0,0053	3
Alternatif Bank A Type Variable	0,11919	3	0,00546	2
Gedik Securities A Type Equity	0,11167	4	0,00425	5
Finans Yatırım Securities A Type Variable	0,10803	5	0,00396	7
Alkhair Capital Securities A Type Variable	0,1021	6	0,00423	6
Finansbank A Type Equity	0,09894	7	0,00354	9
Halk Bank A Type Variable	0,09443	8	0,00373	8
ING Bank A Type Equity	0,08862	9	0,00329	12
Kare Securities A Type Variable	0,08734	10	0,00329	11
Garanti Bank A Type Variable	0,08201	11	0,00496	4
Yapı Kredi A Type Equity	0,07903	12	0,00279	14
TEB Securities A Type Equity	0,07751	13	0,00274	16
Eczacıbaşı A Type Equity	0,07592	14	0,00274	17
Is Securities A Type Variable	0,07452	15	0,00275	15
Tekstilbank A Type Equity	0,07361	16	0,00338	10
Tacirler Securities A Type Variable	0,07148	17	0,00286	13
Akbank A Type Equity	0,07073	18	0,00251	19
Finansbank A Type Variable	0,06935	19	0,00253	18
Yapı Kredi Securities A Type Variable	0,06671	20	0,00236	21
Yatırım Finansman Securities A Type Variable	0,06071	21	0,00243	20
Denizbank A Type Equity	0,05839	22	0,00218	22
Garanti Bank A Type Equity	0,04824	23	0,00173	23
Is Bank A Type Equity	0,04749	24	0,00168	24
Vakıflar Bankası A Type Variable	0,04333	25	0,00163	25
Denizbank A Type Variable	0,04165	26	0,00155	26
Eczacıbaşı A Type Variable	0,02952	27	0,00111	27
Sekerbank A Type Equity	0,02145	28	0,00081	28
Ziraat Securities A Type Variable	0,02091	29	0,00078	29
Meksa Securities A Type Variable	-0,00694	30	-0,00029	30
Acar Yatırım Securities A Type Variable	-0,01258	31	-0,00053	31
Acar Yatırım Securities A Type Equity	-0,02521	32	-0,00153	32
Başkent Securities A Type Variable	-0,07793	33	-0,00488	33

Table 2: Results of Jensen's Alpha

Fund Name	**alpha**	**t-stat**	**p-value**
Eczacıbaşı A Type Variable	**0,54440**	144,606	0,14920
Strateji Securities A Type Equity***	**0,00279**	299,688	**0,00295**
Alternatif Bank A Type Variable*	**0,00126**	177,133	**0,07751**
Finans Yatırım Securities A Type Variable**	**0,00123**	218,878	**0,02938**
Gedik Securities A Type Equity**	**0,00119**	199,537	**0,04690**
Alkhair Capital Securities A Type Variable	**0,00110**	139,127	0,16517
Finansbank A Type Equity**	**0,00102**	207,990	**0,03838**
Halk Bank A Type Variable	**0,00091**	121,120	0,22676
Kare Securities A Type Variable	**0,00087**	103,013	0,30377
Alternatif Bank A Type Equity	**0,00083**	111,199	0,26703
ING Bank A Type Equity	**0,00062**	113,838	0,25587
Garanti Bank A Type Variable	**0,00058**	0,89887	0,36944
Tekstilbank A Type Equity	**0,00055**	0,57055	0,56873
TEB Securities A Type Equity	**0,00033**	0,78113	0,43534
Yapı Kredi A Type Equity	**0,00032**	0,88459	0,37708
Is Securities A Type Variable	**0,00025**	0,48143	0,63056
Eczacıbaşı A Type Equity	**0,00025**	0,57570	0,56525
Tacirler Securities A Type Variable	**0,00021**	0,40623	0,68486
Finansbank A Type Variable	**0,00011**	0,20811	0,83528
Akbank A Type Equity	**0,00010**	0,25434	0,79941
Yatırım Finansman Securities A Type Variable	**0,00002**	0,04129	0,96709
Yapı Kredi Securities A Type Variable	-0,00001	-0,04309	0,96566
Denizbank A Type Equity	-0,00014	-0,24078	0,80989
Vakıflar Bankası A Type Variable	-0,00040	-0,88242	0,37825
Denizbank A Type Variable	-0,00051	-104,164	0,29841
Garanti Bank A Type Equity	-0,00056	-110,390	0,27052
Is Bank A Type Equity	-0,00056	-155,686	0,12055
Acar Yatırım Securities A Type Equity	-0,00077	-136,333	0,17379
Sekerbank A Type Equity*	-0,00092	-176,938	**0,07784**
Ziraat Securities A Type Variable	-0,00094	-190,422	0,05783
Acar Yatırım Securities A Type Variable	-0,00097	-205,659	**0,04058**
Meksa Securities A Type Variable*	-0,00175	-193,512	**0,05391**
Başkent Securities A Type Variable	-0,00192	-241,182	**0,01647**

Table 3: Results of Treynor&Mazuy Regression Analysis

Fund Name	**T&M**	**t-stat**	**p-value**
Eczacıbaşı A Type Variable***	**0,67493**	264,852	**0,00851**
Finansbank A Type Equity	**0,41998**	158,914	0,11308
Eczacıbaşı A Type Equity*	**0,41561**	182,174	**0,06948**
Yapı Kredi Securities A Type Variable**	**0,27059**	250,188	**0,01288**
Yapı Kredi A Type Equity	**0,19270**	0,98799	0,32395
Garanti Bank A Type Equity	**0,04925**	0,18167	0,85597
Denizbank A Type Variable	**0,02487**	0,09466	0,92465
Is Bank A Type Equıty	**0,00226**	0,01163	0,99073
Finans Yatırım Securities A Type Variable	-0,00596	-0,01961	0,98437
Garanti Bank A Type Variable	-0,05794	-0,16803	0,86667
Finansbank A Type Variable	-0,13826	-0,46827	0,63993
TEB Securities A Type Equity	-0,22919	-101,995	0,30857
Akbank A Type Equity	-0,27842	-132,569	0,18594
Tacirler Securities A Type Variable	-0,28139	-102,365	0,30682
Acar Yatırım Securities A Type Equity	-0,34901	-114,909	0,25143
Denizbank A Type Equity	-0,38133	-119,457	0,23319
Is Securities A Type Variable	-0,40009	-145,417	0,14694
Başkent Securities A Type Variable	-0,44802	-104,266	0,29794
Sekerbank A Type Equity**	-0,54839	-197,095	**0,04964**
ING Bank A Type Equıty**	-0,58057	-20,005	**0,04634**
Yatırım Finansman Securities A Type Variable**	-0,66458	-222,214	**0,02701**
Gedik Securities A Type Equity**	-0,71032	-223,444	**0,02619**
Ziraat Securities A Type Variable***	-0,73999	-283,185	**0,00494**
Vakıflar Bankası A Type Variable***	-0,96918	-411,381	**0,00005**
Halk Bank A Type Variable**	-103,124	-258,618	**0,01017**
Acar Yatırım Securities A Type Variable***	-111,978	-454,313	**0,00001**
Tekstilbank A Type Equity**	-119,086	-229,811	**0,02224**
Kare Securities A Type Variable***	-119,176	-263,929	**0,00874**
Alkhair Capital Securities A Type Variable***	-126,558	-301,749	**0,00277**
Alternatif Bank A Type Variable***	-182,891	-496,793	**0,00000**
Meksa Securities A Type Variable***	-189,156	-397,885	**0,00009**
Alternatif Bank A Type Equity***	-211,741	-555,927	**0,00000**
Strateji Securities A Type Equity***	-216,151	-443,807	**0,00001**

5 Conclusion

In this study, Turkish equity and variable funds' performances are analysed over the period from 09 January 2009 to 31 October 2014. During this quantitative easing policy term, Fed increased money supply in order to lower the interest rates and this excess of money in financial markets made a significant contribution to capital influx from developed countries to developing countries. The study period overlaps with the QE era when stock market sizes have improved remarkably. Over this period, Turkish stock market returns could outperform many developed and developing stock market indices. Turkish equity and variable fund performances and funds managers' performances were analysed in this study by using Sharpe ratio (1966), Treynor ratio (1965), Jensen alpha (1968) and Treynor&Mazuy (1966) regression analysis method. There are different types of funds such as equity, mixed, bonds, variable and so on. This study solely investigates performances of equity funds and variable funds since these funds contain more stock shares in their portfolios, hence more volatility and risk. In Turkey, there are 29 equity funds and 48 variable funds based on the data as of 31 October 2014. In this study, those funds, which were closed, newly founded or that merged with other funds during this period were not covered. Also those funds that had less than 50% equity shares in their portfolio were not studied. Afterwards, 15 equity funds and 18 variable funds were filtered to study with. BIST100 Index and TKYD O/N Net Repo Index are employed as the benchmark index and risk-free rate, respectively. In order to find fund performances, we have utilized Sharpe (1966) and Treynor (1965) ratio. Funds that have higher Sharpe and Treynor ratios have better risk-adjusted performances. For Sharpe Ratio, Strateji Securities A-type Equity Fund, Alternatif Bank A-type Equity Fund, Alternatif Bank A-type Variable Fund, Gedik Securities A-type Equity Fund and Finans Yatırım Securities A-type Variable Fund have the highest performances. For Treynor ratio, Strateji Securities A-type Equity Fund, Alternatif Bank A-type Variable Fund, Alternatif Bank A-type Equity Fund, Garanti Bank A-type Variable Fund and Gedik Securities A-type Equity Fund have the highest performances. Moreover, we have used Jensen alpha (1968) for selective ability and Treynor&Mazuy (1966) regression analysis model for market timing ability of fund managers. Jensen (1968) alpha indicates that fund managers don't have selective ability, as only five out of 33 funds have positive and statistically significant alphas, which are Strateji Securities A-type Equity Fund, Gedik Securities A-type Equity Fund, Finans Yatırım Securities A-type Variable Fund and Finansbank A-type Equity Fund and Alternatif Bank A-type Variable Fund. Regression analysis of Treynor&Mazuy (1966) indicates market timing ability of fund managers. Eight out of these 33 funds have positive market timing ability, but merely three of them are statistically significant. Eczacıbaşı A-type Variable Fund is statistically significant at 1% level, Yapı Kredi A-type Variable Fund is statistically significant at 5% level and Eczacıbaşı A-type Equity Fund is statistically significant at 10% level. According to these results, Turkish equity and variable fund managers, in general, lack both selectivity skills and market timing ability during the quantitative easing era.

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