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Performance Evaluation of Open-ended Equity Funds in Pakistan

Muhammad Azeem*[1]

Rohania Ahmad[2]

Muzammil Khurshid[3]

Fasial Ashraf[4]

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Abstract

Fund Management is not new to the world, but there is much to be done regarding research in emerging markets like Pakistan. This research aims to study the performance of open-ended equity mutual funds. Currently, 16 Asset Management companies are working in Pakistan. Twenty-one funds were selected based on the availability of data on funds returns. Data has been collected from the website of the Mutual Fund Association of Pakistan from 2009 to 2013. Three different investment horizons of fund performances, i.e. 5-year, 3-year and 2-year, were analysed using the conventional measures: Sharpe Ratio, Trynor Ratio and Jensen's Alpha. The results showed that funds significantly outperformed the market for all the periods. On average, the fund performance is significantly positive. However, some funds showed negative returns under the Trynor measure for five and 3-year periods. It is concluded that the Pakistani investor can get better value for their investment by investing in open-ended equity funds.

Keywords: Open-ended equity funds, KSE, fund performance, Sharpe ratio, Trynor ratio, Jensen's Alpha, t-test

1 Introduction

Mutual funds are a fast-growing industry in developed countries but are in the initial stages in

[1]Department of Management Sciences University of Central Punjab, Gujranwala Campus
***Corresponding author:** Azeem.grw@ucp.edu.pk
[2]Department of Business and Management, University of Central Punjab, Lahore, Sialkot Campus
[3]Department of Banking and Finance, University of the Punjab, Gujranwala Campus
[4]Department of Business Administration, University of the central Punjab, Gujranwala Campus

developing countries. By the end of 2013, the global assets under Mutual fund management reached $120 trillion (Reuters, 2013). Mutual funds offer an exciting investment vehicle for someone lacking knowledge, skill or professional management to manage wealth. By investing in mutual funds, smaller investors can enjoy the benefits of professionally managed funds offered by AMC (Asset Management Companies). These funds have become extremely popular over the last 20 years. Mutual funds, once unknown, are now a part of daily use (Gohar et al., 2011). Fourteen equity funds from Pakistan were among the world's top 100 best-performing equity funds 2012 (Reuters, 2013). The mutual fund industry in Pakistan has grown remarkably in the last few years (Nafees et al., 2011).

Huhmann and Bhattacharyya, (2005) argued that the number of mutual funds has increased worldwide, particularly in developed countries; it indicates that investors prefer the mode of investment where risk is low. During the past two decades, the fund industry has shown excellent growth. However, it is still growing in developing countries.

Mutual funds can be broadly classified into two categories: Open-ended and close-ended funds. As the industry continues to grow, different types of funds emerge based on investors' requirements: equity funds, Islamic equity funds, principal-protected funds, debt funds, money market, balanced funds, fixed-income funds, etc.

According to Afza and Rauf, (2009), 43 open-ended and 22 closed-ended funds were operating in Pakistan, whereas, currently, there are 151 open-ended funds and five closed-ended funds managed by 24 Asset Management Companies (MUFAP, 2014). It shows that the number of open-ended funds has increased over the years compared to closed-ended funds, which have reduced from 22 to 5. It may be because investors prefer open-ended funds as they provide better returns (Thompson Reuters, 2013). It also shows that most investors are more interested in getting capital gain than keeping the units up to redemption date and thus receiving redemption value.

The Performance of mutual funds has been studied in Pakistan by Amir et al. 2005, Afza et al. 2009, Gohar et al. 2011, Nafees et al. 2011, Ali Asghar, Afza and Bodla, 2013 limited work has been done to study the performance of open-ended equity funds in Pakistan in terms of whether these funds significantly out-perform the market and consistent. The study aims to examine the performance of open-ended equity funds in Pakistan, thus helping investors choose funds that will provide maximum return.

2 Literature Review

Dahlquist et al. (2000); studied the relationship between fund performance and fund attributes in Swedish market during the period of 1992 to 1997. They used the alpha in a linear regression model to measure fund performance; fund returns were used as funds' performance variable. Funds attributes like; Past performance, cash flows, fund size, turnover and proxcies of expenses and trading activity were used as independent variables. They found that, equity funds perform better than bond and money market funds and especially the small equity funds showed superior performance than larger funds. The reason behind, good performance may be the tax advantages and saving programs offered by equity funds. Moreover, results also indicate that actively managed equity funds showed superior performance than passively managed funds; fund performance positively related with lagged (past) performance and current flows butt showed negative relation with fund fee and money market funds performed consistently than other funds.

Soongswang and Sanohdontree, (2007); studied the performance of 138 open-ended equity funds in Thailand from 2002 to 2007 using six time periods rtetuns; 1-month, 3-month, 6-month, 1-year, 3-year and 5-year. They used Trynor ratio, Sharpe ratio, Jensen's alpha and Data Envelopment Analysis technique (DAE) and found that open-ended equity funds significantly outperformed the market for all time periods as suggested by the rsults of Trynor ratio, Sharpe ratio and Jenson

alpha. Moreover, DAE a more sophisticated technique showed mixed results.

Gohar et al. (2011), compares the performance of equity funds versus income funds; further classified them into brocker backed funds and institutional backed for depth analysis in Pakistan during the period of 2005 to 2009. They used Sharpe ratio, Trynor ratio, Jensen alpha and Information ratio to measure performance of funds. They found that, equity funds outperform the income funds and within equity funds the broker backed category showed superior performance than institutional backed funds on the other hand within income funds institutional backed funds performed better than brocker backed funds. They also suggested that equity and income funds have market timing ability especially in institutions because they have vast experience, resources and professional fund managers.

Afza et al. (2009), studied the performance of Pakistani mutual funds from 1999 to 2006; used Sharpe ratio with the help of pooled time series and cross-sectional data, and found that among various funds attributes lagged return, liquidity and 12B-1 had significant impact on fund performance. Amir et al. (2005), studied the Performance of mutual funds in Pakistan during the period of 1997 to 2004. Sharpe measure, Trynor measure and Jenson differential measure used to measure the fund performance. They concluded that fund's industry outperforms the market proxy by 0.86 percent and suggested that in Pakistan mutual funds capable to add value. Some of the funds under perform due to diversification problem.

Nafees (2011), studied the risk-adjusted performance of open-ended and closed-ended funds in Pakistan during the year of 2006 to 2010. Sharpe measure, Sortino measure, Trynor measure, Jenson measure and information measure were used to measure funds returns. They found that all measures showed risk adjust negative return to investors; may be due to financial set back of 2008 which badly effect the performance of mutual fund industry. Nazir et al. (2010), studied the mutual fund industry in Pakistan during the period of 2005 to 2009 found thatassets turnover, family proportion and expenses ratio are positively leading the growth of mutual funds, in contrast with management fee and risk adjusted returns which are negatively assoicated with mutual funds growth.

Duggimpud et al. (2010), studied the relationship between risk and return of funds based on total risk and systematic risk in Indian market from 2000 to 2009 and used Trynor ratio, Sharpe ratio and Jenson technique for this purpose. They found positive relation between risk and return of mutual funds and beta values are less than 1 in selected sample. Moreover; they also concluded that actual returns are higher when compared with the expected returns over the investigated period. They further suggested that investors should invest in the Indian market to enjoy the advantages of diversification and professional management.

Swinkels and Rzezniczak, (2008), studied the performance evaluation of Polish equity, bond and balanced funds from 2000-2007. They found that, the three funds have positive, insignificant selectivity of skill, which indicates that a private investor would able to get return.

The present study aims to contribute the existing body of knowledge by studding the performance of open-ended equity in terms of whether these funds out-perform or under-perform the market using for the three different time horizon 5-year, 3-year and 2-year.

3 Data

Unit of analysis for the study is fund returns of 21 Pakistani Open-Ended equity funds managed by 16 AMC's (see Annex 1). Data has been collected from the reports issued by MUFAP (Mutual Funds Association of Pakistan) from 2009- 2013.KSE 100 indices has been used as market return to compare the performance. Three different time horizons are used 5-year, 3-year and 2-year. The main issue is to test the whether the Open-ended equity funds are significantly out-performing the market and consistent. To test the null hypothesis t-statics is used.

Ho: Open-ended equity funds under-perform the market and inconsistent

H1: Open-ended equity funds Out-perform the market and consistent

The Sharpe, Trynor and Jensen's measures are calculated in MS Excel 2010, and the t-test is applied using the SPSS 16 software.

4 Methodology

Sharpe ratio, Trynor ratio and Jensen's alpha were used to measure the performance. These measures are widely acceptable and used to evaluate the performance of mutual funds, as (Duggimpudi et al. 2010; Afza, 2009; Gohar, 2011; Soongswang & Sanohdontree, 2007; Nafees et al., 2011; Amir et al., 2005; Swinkels & Rzezniczak, 2008; Jaydev, 1996; Agarwal, 2007; Noulas et al., 2005; Ali Asghar et al., 2013), use them in their analysis. Funds returns were used to calculate the Sharpe Ratio,Trynor ratio and Jensen's Alpha.

4.1 Sharpe Ratio

Sharpe (1996), developed the Sharpe ratio, also called the reward-to-variability ratio, to measure an investment return by adjusting for its risk. The ratio measures the excess return (risk premium) per deviation in an investment. It is similar to the Trynor ratio, but the Sharpe measure uses the total risk of the portfolio rather than systematic risk.

The formula for the Sharpe ratio:

$$Sp = rp - rf / \sigma p \quad \text{.....(i)}$$

Where Sp is the sharpe ratio, rp is the average return of portfolio has been calculated through geometric mean (GM) of one-year fund's return; rfKIBOR (Karachi Inter Bank Offered Rate) used as risk free rate and σp the standard deviation of fund returns.

The Sharpe ratio evaluates the performance of its level of total risk and higher value of this ratio means higher fund returns.

4.2 Trynor Ratio

Jack Trynor developed Trynor ratio also called reward-to-volatility ration in 1965 and he argued that, by using a characteristic line, one can easily determine the relationship between funds and the market (Treynor, 1966). Therefore, the portfolio manager should easily able to diversify and eliminate all unsystematic risks. Under a diversified portfolio, the measure of risk is systematic, which is measured through beta. The trynor equation be expressed as follows:

$$T_p = (Rp - Rf)/B_p \quad \text{.....(ii)}$$

Where Tp is Tynor ratio, R_p is portfolio return, R_f is risk-free return, and B_p is portfolio beta. Given that the measure of technique is the ratio of excess return (risk premium) divided by the systematic risk, a larger Tp value indicates a larger slope with a better portfolio for all investors regardless of the risk preferences.

4.3 Jensen's Alpha

Jensen's alpha was first used as a measure in the evaluation of mutual funds (Jensen, 1968). It is the difference between the portfolio return and the return predicted by the Capital Asset Pricing Model (CAPM). To evaluate the performance of the mutual fund, investors should consider the portfolio risk with portfolio return. If two mutual funds have equal returns but varied risks, investors should select low-risk funds.

The formula of Jensen's alpha is as follows:

$Jp(\alpha)= rp – \{ rf + (rm –rf) \alpha p \}$ …….(iii)

Where Jp (α) is Jensen's measure for portfolio (expected return on the fund), rp is the portfolio return, rf is the risk-free return, rm is the market return, βp is the systematic risk. If the manger is earning a fair return for a given portfolio's systematic risk, the α would be zero. The positive α means good performance, and negative α means poor performance. Jensen's alpha statistically tests whether actual return is greater or less than the expected return calculated by CAPM. The validity of Jensen measure is tied to the validity of CAPM (Gohar et al., 2011).

5 Results & Discussions

Results consists of Mean returns of funds and market, standard deviation and standard error of means of funds, t-value, respective p-values and the decision in terms of out-perform or under-perform. Table 1reports that, according to Sharpe Ratio, the Pakistani open-ended equity mutual funds showed significantly positive returns for all the time-periods (2-year, 3-year and 5-year). 100 % of the open-ended equity funds out-perform the market and consistent for the all investment horizons. All the p-values are significant at .05 %, as the p-values are less than 0.05 so we reject the Null hypothesis and concluded that the open-ended equity funds are significantly outperform the market and consistent for the all-time periods.

Table 2 reports that, according to Trynor measure, the funds showed positive returns for 2-year period, while some showed negative returns in 3-year and 5-year investment period. Moreover these results are same with Soongswang and Sanohdontree, (2007), Nafees et al. (2011) As the performance is concern, all the three investment period shows outperformance, in 2-year time period 100 % of the funds outperform the market, in 3-year period 77 % and in 5-year time period 95 % of the funds outperform the market. The results are supported by the p-values which are significant and 0.05 %, as the p-values are less than .05 % so we reject Ho and conclude that open-ended equity funds outperform the market.

Table 3 represents the results according to Jensen's measure. All funds showed positive returns for the three investment periods. According to 2-year time period 15 % of funds outperform the market while, 50 % for 3-year time period and 100 % funds out-perform for the 5-year time period. Overall results according to p-values the funds outperform for all the three time periods, as all the p-values are less than 0.05 so, we reject the null hypothesis of under-perform and accept that the open-ended equity funds significantly out-perform the market.

Table: 1 Performance of Pakistani Open-ended Equity funds using the Sharpe Ratio

Time Period	% Out-perform	Mean	Market	Std Devi	Std Error	T-stat	Sig	Out-perform/ Under-Perform
2-Year	100	2.33	0.4920	0.7549	0.1609	14.462	0.000	Out-perform
3-year	100	2.66	0.3093	0.9034	0.1971	13.476	0.000	Out-perform
5-year	100	1.580	0.1720	0.5881	0.1283	12.314	0.000	Out-perform

Table: 2 Performance of Pakistani Open-ended Equity funds using the Trynor Ratio

Period	% Outperform	M	Market	Std Devi	Std Error	t-stat	Sig	Out-perform/ Under-Perform
2-Y	100	30.3	0.4920	8.1346	1.7343	17.52	0.00	Out-perf
3-Y	77	0.00	0.3093	5.9808	1.3051	0.005	0.022	Out-perf
5-Y	95	0.93	0.1720	0.7489	0.1634	5.695	0.00	Out-perf

Table: 3 Performance of Pakistani Open-ended Equity funds using Jensen's Alpha

Period	% Outperform	Mean	Market	Std Devi	Std Error	t-stat	Sig	Out-perform/ Under-Perform
2-Y	15	0.378	0.492	0.000	0.00	7205.5	0.000	Out-perf
3-Y	50	0.356	0.309	0.038	0.008	42.3	0.000	Out-perf
5-Y	100	0.353	0.172	0.015	0.003	103.3	0.000	Out-perf

6 Conclusion

The main purpose of this study is to test whether the Pakistani open-ended equity funds significantly outperformed the market using three different investment horizons. On the basis of results, we conclude that the Pakistani Open-ended Mutual Funds siginificantlly out-performed the market and consistent in their performance when measured by the three conventional measures of mutual funds' performance i.e Sharpe Ratio, Trynor Measure and Jesnse's Alpha. Moreover, results are consistent with (Gohar et al., 2011; Duggimpud et al., 2010; Soongswang & Sanohdontree, 2007 ; Muga et al., 2007). In summary, this add to existing body of knowledge by suggesting the investors can earn high return by investing in Open-ended equity funds than investing in market. Further research can be done by applying the Data Envelopment Analysis (DEA) along with three conventional measures to confirm the results of the study.

Annex: 1 Open-ended equity funds and AMC's

Sr.	Fund Name	Asset Management Company (AMC)
1	ABL Stock Fund	ABL Asset Management Company Limited
2	AKD Opportunity Fund	AKD Investment Management Limited
3	Alfalah GHP Alpha Fund	Alfalah GHP Investment Management Limited
4	Asian stock Fund	Safeway Fund Limited
5	Atlas Stock Market Fund	Atlas Asset Management Limited
6	Crosby Dragon Fund	KASB Funds Limited
7	First Capital Mutual Fund	First Capital Investments Limited
8	First Habib Stock Fund	Habib Asset Management Limited
9	HBL Stock Fund	HBL Asset Management Limited
10	IGI Stock Fund	Alfalah GHP Investment Management Limited
11	JS Growth Fund	JS Investments Limited
12	JS Large Cap Fund	JS Investments Limited
13	JS Value Fund	JS Investments Limited
14	Lakson Equity Fund	Lakson Investments Limited
15	NAFA Stock Fund	NBP Fullerton Asset Management Limited
16	National Investment Unit Trust	National Investment Trust Limited
17	Pakistan Stock Market Fund	MCB-Arif Habib Savings and Investments Limited
18	Pakistan Strategic Allocation Fund	MCB-Arif Habib Savings and Investments Limited
19	PICIC Energy Fund	PICIC Asset Management Company Limited
20	Safeway Mutual Fund	Safeway Fund Limited
21	United Stock Advantage Fund	UBL Fund Managers Limited

7 References

Afza, T., & Rauf, A. (2009). Performance evaluation of Pakistani mutual funds. *Pakistan Economic and Social Review*, 199–214.

Agrawal, D. D. (2011). Measuring performance of Indian mutual funds. *Finance India, June*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1311761

Asghar, A., e Kausar, M. J., Afza, T., & Bodla, M. (2013). Efficiency of the mutual funds in Pakistan. *Middle-East Journal of Scientific Research*, *18*(8), 1055–1064.

Babalos, V., Caporale, G. M., & Philippas, N. (2009). *Evaluating Greek equity funds using data envelopment analysis*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1491059

Charnes, A., Cooper, W. W., & Rhodes, E. (1978). Measuring the efficiency of decision making units. *European Journal of Operational Research*, *2*(6), 429–444.

Dahlquist, M., Engström, S., & Söderlind, P. (2000). Performance and characteristics of Swedish mutual funds. *Journal of Financial and Quantitative Analysis*, *35*(3), 409–423.

Duggimpudi, R. R., Abdou, H., & Zaki, M. (2010). An evaluation of equity diversified mutual funds: The case of the Indian market. *Investment Management and Financial Innovations*, *7*(4), 66–73.

G. Noulas, A., A. Papanastasiou, J., & Lazaridis, J. (2005). Performance of mutual funds. *Managerial Finance*, *31*(2), 101–112.

Huhmann, B. A., & Bhattacharyya, N. (2005). Does mutual fund advertising provide necessary investment information? *International Journal of Bank Marketing*, *23*(4), 296–316.

Jayadev, M. (1996). Mutual fund performance: An analysis of monthly returns. *Finance India*, *10*(1), 73–84.

Jensen, M. C. (1968). The performance of mutual funds in the period 1945-1964. *The Journal of Finance*, *23*(2), 389–416.

Muga, L., Rodriguez, A., & Santamaría, R. (2007). Persistence in Mutual Funds in Latin American Emerging Markets: The Case of Mexico. *Journal of Emerging Market Finance*, *6*(1), 1–37. https://doi.org/10.1177/097265270700600101

Mutual Funds Association of Pakistan. (2014). Retrieved from www.mufap.com/pk

Nafees, B., Shah, S. M. A., & Khan, S. (2011). Performance evaluation of open end and close end mutual funds in Pakistan. *African Journal of Business Management*, *5*(28), 11425.

Nazir, M. S., & Nawaz, M. M. (2010). The determinants of mutual fund growth in Pakistan. *International Research Journal of Finance and Economics*, *54*(10), 1051–1060.

Pendaraki, K. (2012). Mutual fund performance evaluation using data envelopment analysis with higher moments. *Journal of Applied Finance and Banking*, *2*(5), 97.

Powers, J., & McMullen, P. (2000). Using data envelopment analysis to select efficient large market cap securities. *Journal of Business and Management*, *7*(2), 31–42.

Raheel, G., Sohail, A., & Urfa, N. (2011). Performance comparison of mutual funds in Pakistan. *African Journal of Business Management*, *5*(14), 5583–5593.

Shah, S. A., Hijazi, S. T., & Hamdani, N. H. (2005). Performance evaluation of mutual funds in Pakistan [with comments]. *The Pakistan Development Review*, 863–876.

Sharpe, W. F. (1966). Mutual fund performance. *The Journal of Business*, *39*(1), 119–138.

Soongswang, A., & Sanohdontree, Y. (2011). Open-ended equity mutual funds. *International Journal of Business and Social Science*, *2*(17). https://search.proquest.com/openview/63426687bb9b9be7f2257febadf09a03/1.pdf?pq-origsite=gscholar&cbl=646295

Swinkels, L., & Rzezniczak, P. (2009). Performance evaluation of Polish mutual fund managers. *International Journal of Emerging Markets*, *4*(1), 26–42.

Treynor, J., & Mazuy, K. (1966). Can mutual funds outguess the market. *Harvard Business Review*, *44*(4), 131–136.

Thompson Reuters. (2013). Retrieved from http://www.reuters.com/

Thompson Reuters. (2013). Retrieved from http://www.reuters.com

Zohdi, M., Marjani, A. B., Najafabadi, A. M., Alvani, J., & Dalvand, M. R. (2012). Data envelopment analysis (DEA) based performance evaluation system for investment companies: Case study of Tehran Stock Exchange. *African Journal of Business Management*, *6*(16), 5573.