

Factors Affecting Mutual Fund Performance In Pakistan: Evidence From Open Ended Mutual Funds

Alam Rehman

PhD Research Scholar Islamia College Peshawar

Dr. Qadar Bakhsh Baloch

Associate Professor, NUML, Peshawar

Abstract

Mutual Fund is a credible investment opportunity for small investors who lack information, skills, or knowledge of investing in capital market. The study was aimed to know the effects of factors affecting the performance of Mutual Fund in Pakistan. The study investigated performance of 44 open ended Mutual Funds operating in Pakistan for the period from 2010 to 2014. The annual penal data was collected from mutual fund annual reports and Mutual Fund Association of Pakistan. Fixed effect - Random effect OLS was used for the data analysis of this research. The study found that the factors such as fund size, expense ratio, free management and asset turnover have positive impact on fund return have greater impact on fund return. And, factors like liquidity and load fee are showing negative and insignificant impact on fund return. The research advises Fund managers to maintain a balanced amongst the factors so as to ensure maximization of its return, benefiting both; Mutual Fund managers and investors.

Keywords: Mutual Fund, open ended, penal data, fixed effect- random effect, Pakistan

Mutual Fund plays a key role in the capital market of any country. Mutual Funds channelize the savings of small investor and households and make it available in the economy in the shape of investment in profitable business avenues, i.e. stock, bonds and other financial instruments. Mutual Funds are actually the asset management companies which invest the amount of individual as well as institutional investors in different financial instruments. Mutual Fund makes easy for the small investors, who don't have enough information and skills and low tolerance in risk, to invest their savings in profitable portfolios through the more professional fund managers. These skillful professional managers target profitable and outperforming financial instruments to generate return for investors. The huge number of investors of Mutual Fund around the worlds specifically in developing countries is the indication of as an investment choice.

The first Mutual Fund was introduced in Netherlands in 1774, when the country experienced huge decline in its banking sector, followed by North America in 1924 and since 1980 Mutual Fund has become a vital pool of investment around the world. With the first initiation of Mutual Fund in Pakistan in 1962 by Investment Corporation

of Pakistan (ICP), the fast momentum has took the industry today to the figure of 170 open and close ended kinds of Funds. Today investor finds variety of Mutual Funds i.e. Equity Fund, Fund of Fund, Money market Fund, Capital protected Fund, Balanced Fund, Index tracker Fund, Income Fund and Islamic funds are traded in Pakistan. Such a tremendous growth in Pakistan Mutual Fund industry motivates the investors for investing in mutual Fund as it is considered low risk and safer form of investment as for as the investor prospective is concerned. Pakistan holds around 1.4 % share of the world Mutual Fund assets.

Many studies conducted on Mutual Funds in Pakistan by numerous authors such as; Afza & Rauf (2009), Nazir & nawaz (2010) and shah et al (2012) have used traditional methods for evaluating the Mutual Fund performance like; sharp ratio, Trey nor Ratio, and Jensen alpha. This research uses the more sophisticated methods of evaluating Mutual Fund performance such as; fixed effect, and random effect OLS model and Hausman test. Since the Mutual Fund return can be affected by so many factors like, equity, NAV, total assets, load fee, service fee, and turnover of assets, expense ratio, liquidity, Management fee and dividend therefore, this research investigation encompasses all of these determinants in Pakistani context with following objectives:

- To know the impact of fund characteristics (factors) on fund adjusted return.
- To know correlation of these factors with fund return.
- To suggest measures on the basis of the finding of this research article.

Literature Review

Mutual Fund is a wide area of research and many researchers have contributed in the area of in term Mutual Fund performance. Bogle (2004) argued that average cost of owing mutual funds has increased more than 100 in the last few decades. According to Freeman and Brown (2001) and Ang et al (1998) Mutual fund advisory and management fee is high which create concern of conflict between the Mutual Fund board and asset management and such increase in fund Management negatively affects the investor's motivation. However, studies such as Molson (2003), Tang Cheong (2007) and Zeraet.al (2007) has found that the size off Fund has a significant impact on the expense ratio of fund. The larger the fund size, the lower the expense ratio because of the economies of scale and reduction in marginal cost. Therefore, the fund size is mostly considered as having positive relationship with fund performance (Gorman, 1991, Grinblatt Titman, 1994; Peterson et al, 2001, Nazir & Nawaz, 2010). However, some of the researchers have identified a negative relationship between fund size and fund return (Jang & hung, 2003, karlson & persson, 2005; Haslem, Baker, & Smith, 2008; .and Bablos et al, 2009). Expense ratio is also a key determinant of fund

performance. Similarly; there are contradicting view upon affect of expense ratio and fund performance. Ippolito(1989); Droms and Walker, (1996); **Dowen and Mann, (2007)**, Afza and Rauf, (2009), Nazir & Nawaz, (2010) are of the opinion that high expenses have positive impact on the fund return.

Turnover and liquidity are also few of the vital factors affecting fund performance. Carhart(1997) found a negative relationship between turn over and fund performance. The same negative coefficient was found by Afza and Rauf (2010). While some other researchers found a positive relationship between turn over and fund performance (Soderlind **et al**, 2000; Wermers, 2000). There is diverse kind of findings about the impact of liquidity on fund performance. **Glenn (2004)** argued that liquidity has significant negative impact on fund performance. Similar results have been reported by many researchers (**Dukes & Davis, 2006**, Afza & Rauf, 2010, Nazir & Nawaz, 2010). Management fee is another variable affecting the fund performance. **George (2001)** argued that management efficiency has positive impact on fund performance. Other researchers also found similar findings (Pushner, Rainish & Coogan, 2001; Gallagher, 2003, **Joseph, 2004**). The salient points learnt through review of the literature led to the conceptualization of following theoretical framework and set of hypotheses thereof:

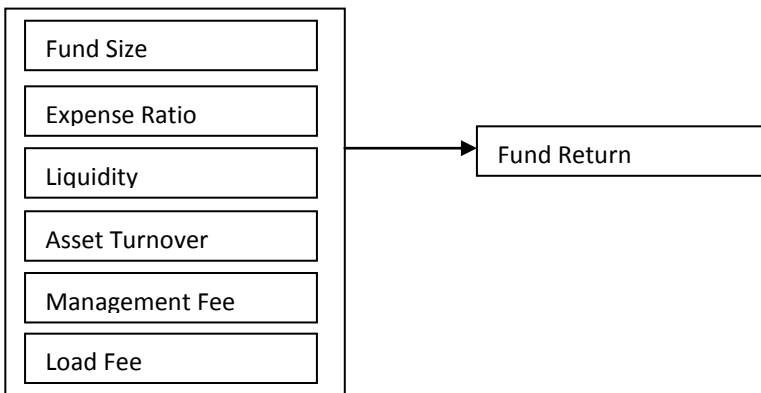


Figure 1. *Theoretical Framework*

H0: Fund size has negative impact on Mutual Fund Performance.

H1: Fund size has Positive impact on Mutual Fund Performance.

H0: Expense Ratio has negative impact on Mutual Fund Performance.

H1: Expense Ratio has positive impact on Mutual Fund Performance.

H0: Liquidity has negative impact on Mutual Fund Performance.

H1: Liquidity has positive impact on Mutual Fund Performance.

H0: Asset Turnover has negative impact on Mutual Fund Performance.

H1: Asset Turnover has Positive impact on Mutual Fund Performance.

H0: Management Fee has negative impact on Mutual Fund Performance.

H1: Management Fee has Positive impact on Mutual Fund Performance.

H0: Load Fee has negative impact on Mutual Fund Performance.

H1: Load Fee has positive impact on Mutual Fund Performance.

Research Model: This research investigation is based on the following research model:

Fund Return=B0+B1 Fund size+B2Expense ratio+B3Liquidity+B4Asset turnover+B5Management Fee+B6load Fee+e

- Return: Return represents the fund performance and it has been calculated and measure as the yearly sharp ratio of the fund. It is calculated as $R = \frac{RP - RT}{\Delta P}$
- Fund size: It has been calculated as the natural log of the total net asset of the fund and represents the total investment of Fund managers in Assets.
- Expense Ratio: Represents the total expenses incurred in fund management
- Management fee: It is the distribution and other charges. It is calculated as the % of net assets. It represents the management fee in income statement of concern mutual fund on annual basis.
- Liquidity: Liquidity has been calculated as total cash the MF has on year basis for the redemption of open ended fund.
- Turnover: It is calculated as total income divided by fund total assets.
- Load Fee: A dummy variable has been created for load as 0 and 1 fund taking load as 1 as other as 0.

Research Methodology

This quantitative research is based upon the secondary data collected from the selected Mutual funds annual reports, Business Recorder, Karachi Stock Exchange Commission website and Mutual funds Association of Pakistan. All open ended Mutual Funds operating in Mutual Fund Association of Pakistan is the population of this research and the sample size is 44 open ended Mutual Fund operating since 2010

for the period from 2010 to 2014. This research has used random sampling technique for the selection of 44 open ended funds. Using Panel data (from 2010 to 2014) of the sample 44 open ended funds the research conducted data analyses by applying fixed effect- random effect OLS model.

Data Analyses and Results

- **Breusch-Pagan Test:** The Breusch-Pagan Test conducted for knowing the heteroscedasticity in the data and found as follows:

Table 1. Breusch-Pagan Test

Kind of test	Critical/Standard value	Reported value
Breusch-Pagan Test	0.05	0.001

The results as tabulated above show that data has not showing any problem of non constant variation, as the values reported by the test regarding the data of this research are higher than their critical value.

- **Multicollinearity Test**

Table 2. Multicollinearity Test

Variables	V.F
Fund Size	1.92
Expense Ratio	1.83
Liquidity Ratio	2.01
Asset Turnover	1.67
Management Fee	1.21
Load Fee	1.98

Multicollinearity represent the extreme correlation between independent variables of any research. The researchers believe that if two independent variables have correlation ranges above 0.80, than it is observed that there is Multicollinearity problem in the data. The critical value for the multicollinearity is 9. The reported values of all variables of this study are well below then the critical value, suggesting that there is no such problem of Multicollinearity in the data of this research paper.

Regression Analysis

Table 3. Fixed Effect

Return (sharp ratio)	Co-efficient	St. Error	T.Value	P.Value
Fund Size	0.235	0.103	2.272	0.021
Expense Ratio	0.123	0.090	1.365	0.078
Liquidity Ratio	-0.143	0.068	-2.08	0.025
Asset Turnover	0.213	0.098	2.17	0.027
Management Fee	0.190	0.713	1.38	0.079
Load Fee	0.113	0.080	-1.41	0.081

F.Value =18.58 R- square=0.56

The fixed effect as tabulated above reveals that all variables have positive effect on the Mutual Fund performance except liquidity and load Fee. The results suggest that Fund Size has positive significant impact on the Mutual Fund performance. The result also shows that as the expense ratio of Fund increases it has the positive impact on the Mutual Fund performance. The result suggests that liquidity has negatively significant impact on fund performance therefore, maintaining more cash can adversely impact the fund return.

Assets turnover is found affecting positively to the fund return which mean that the more the fund managers utilized its assets rapidly and more quickly the more it will enhance its fund return. Management Fee has been found positively insignificantly impacting the fund return in these results. It indicates that as the fund increases its management fee it results in to an increase in Fund return due to efficient management. Load Fee has been found impacting fund return negatively. Hence, Mutual fund Investors would not like any load as it will minimize their return been obtained from funds. The F-value of 18.58 shows the overall significance and fitness of the model. The R-square, having its value 0.56, shows that the changes which have been caused by independent variables are 56%, in the dependent variable (Fund Return) of this study.

Table 4. *Random Effect*

Return (sharp ratio)	Co-efficient	St. error	T.Value	P.Value
Fund Size	0.231	0.109	2.11	0.023
Expense Ratio	0.124	0.102	1.21	0.791
Liquidity Ratio	-0.098	0.053	-1.82	0.607
Asset Turnover	0.112	0.054	2.05	0.041
Management Fee	0.034	0.031	1.08	0.982
Load Fee	-0.038	0.031	-1.21	0.831

Wald chi 8.25, R- square 0.36

The results of the random effect model tabulated above reveal that all of the variables have positive effect on the Mutual Fund performance except liquidity and load Fee. To be more specific the results suggest that:

- Fund Size has positive significant impact on the Mutual Fund performance.
- The increase in expense ratio of Fund has positive impact on the Mutual Fund performance.
- The liquidity has negatively significant impact on fund performance, showing that maintaining more cash can adversely impact the fund return.
- An asset turnover is found affecting fund return positively which means that the more the fund managers utilizes its assets quickly the more it will enhance its fund return.
- Management Fee is found affecting fund return positively in these results due to efficient management.
- Load Fee is found impacting negatively to the fund return. If the fund manager take any load fee it will adversely impact the fund return as the mutual fund Investors would not like any load as it will impact their return negatively.
- The F-value shows the overall significance of the model. The reported Wald-chi value suggests that the model is significant. The R-square shows that almost 36% changes in dependent variable (fund performance) have been caused by the set of independent variables.

Hausman Test:

b= consistent under H0 & Ha; obtained form Xtre

B=Inconsistent under Ha, efficient under H0; obtained form Xtre

Prob>Chi2= 0.045

The Hausman prob value is less than 5% (0.05), showing that the fixed effect model is appropriate instead of random effect and there is fixed effect in the data.

Conclusion

Mutual Fund is the best investment choice for small investors in the modern day investment especially for those investors who don't have access to information, skills, or knowledge of investing in capital market. The study aimed to know the effects of different determinants which affect the performance of 44 open ended Mutual Fund in Pakistan. Fixed effect and random effects was used for the data analysis of this research. The study found that the different determinants of Mutual Fund have a

different impact on the performance of mutual fund. The study found that as the fund size increases, it is believed that investor have trust and confidence at that fund and obviously it will enhance the Fund return, hence the results showed that fund size has positive impact on the fund return. Determinants such as; Fund Size, Expense ratio, Management Fee and Asset Turnover of different Mutual Funds reflected having positive impact on fund return. And the determinants; liquidity and load Fee have negative and insignificant impact on the fund return. On the basis of the findings, it is advised that Fund managers should maintain a balanced approach in the level of the determinants of the Fund performance so as to ensure maximization in its return, which will benefit both Mutual Fund managers and investors.

References

- Afza, T., & Rauf, A. (2009). Performance evaluation of Pakistani mutual funds. *Pakistan Economic and Social Review*, 199-214.
- Brown, S. J., & Goetzmann, W. N. (1997). Mutual fund styles. *Journal of financial Economics*, 43(3), 373-399.
- Bogle, J. C. (2005). The Mutual Fund Industry 60 Years Later: For Better or Worse?. *Other Publications*, 2005(1), 37-49.
- Cheong Tang, T. (2007). Money demand function for Southeast Asian countries: an empirical view from expenditure components. *Journal of Economic Studies*, 34(6), 476-496.
- Chen, H. L., & De Bondt, W. (2004). Style momentum within the S&P-500 index. *Journal of Empirical Finance*, 11(4), 483-507.
- Carhart, M. M. (1997). On persistence in mutual fund performance. *The Journal of finance*, 52(1), 57-82.
- Chen, J., Hong, H., Jiang, W., & Kubik, J. D. (2013). Outsourcing mutual fund management: firm boundaries, incentives, and performance. *The Journal of Finance*, 68(2), 523-558.
- Droms, W. G., & Walker, D. A. (1996). Mutual fund investment performance. *The Quarterly Review of Economics and Finance*, 36(3), 347-363.
- Davis, G. F., & Kim, E. H. (2007). Business ties and proxy voting by mutual funds. *Journal of Financial Economics*, 85(2), 552-570.
- Freeman, J. P., & Brown, S. L. (2008). Mutual Fund Advisory Fees: New Evidence and a Fair Fiduciary Duty Test. *Oklahoma Law Review*, 61, 83.
- Gallagher, D. R. (2003). Investment manager characteristics, strategy, top management changes and fund performance. *Accounting & Finance*, 43(3), 283-309.
- Garyn-Tal, S. (2013). Mutual fund fees and performance: new insights. *Journal of Economics and Finance*, 1-24.
- Gorman, L. (1991). A study of the relationship between Mutual Fund return and asset size, 1974-1987. *Akron Business and Economic Review*, 22(4), 53-61.
- Grinblatt, M., & Titman, S. (1994). A study of monthly mutual fund returns and performance evaluation techniques. *Journal of financial and quantitative analysis*, 29(03), 419-444.

- Haslem, J. A., Baker, H. K., & Smith, D. M. (2008). Performance and characteristics of actively managed retail mutual funds with diverse expense ratios. *Financial Services Review*, 17(1), 49-68.
- Ippolito, R. A. (1989). Efficiency with costly information: A study of mutual fund performance, 1965-1984. *The Quarterly Journal of Economics*, 1-23.
- Jiang, W. (2003). A nonparametric test of market timing. *Journal of Empirical Finance*, 10(4), 399-425.
- Nazir, M. S., & Nawaz, M. M. (2010). The determinants of mutual fund growth in Pakistan. *International Research Journal of Finance and Economics*, 54(2010), 75-84.
- Peterson, J. D., Petranico, P. A., Riepe, M. W., & Xu, F. (2001). Explaining the performance of domestic equity mutual funds. *The Journal of Investing*, 10(3), 81-91.
- Persson, M., & Karlsson, T. (2005). Mutual fund performance-Explaining the performance of Swedish domestic equity mutual funds using different fund characteristics.
- Pushner, G., Rainish, R., & Coogan, D. (2001). Performance of European focused mutual funds. *American Business Review*, 19(1), 39.
- Ruckman, K. (2003). Expense ratios of North American mutual funds. *Canadian Journal of Economics/Revue canadienne d'économique*, 36(1), 192-223.
- Wermers, R. (2000). Mutual fund performance: An empirical decomposition into stock-picking talent, style, transactions costs, and expenses. *The Journal of Finance*, 55(4), 1655-1703.