Performance Evaluation of Mutual Funds in Pakistan

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Abstract
The present study has been undertaken to investigate the performance of mutual funds in Pakistani context. The research has tried to answer the questions which inquire about the rates of return with respect to the mutual funds and the ability of fund managers in minimizing the associated risks. For the study, fifteen mutual funds have been chosen for the period of 2005 to 2009. The measures used for the evaluation of mutual funds are Sharpe and Treynor measures. The results have been analyzed statistically by means of standard deviation. The findings of the study show that the performance of mutual funds is not up to the mark in Pakistan. The use of only five year data acts as a limitation of this study. The study has given certain implications for the performance of mutual funds in Pakistan.

Keywords: Performance, Evaluation, Mutual funds, Pakistan

1. Introduction
Mutual funds can be defined as an investment scheme which calls for collection of funds from a large number of people for the primary purpose of investing that pool in securities for profits and returns. These securities mainly include stocks, bonds, money market instruments and comparable assets. It is important to mention that mutual funds differ from individual funds in that the former are managed according to the rules stated by management instead of being tampered by individuals as is the case with latter.

One of the main advantages of mutual funds over any other investment to a small investor is that they give small investors access to professionally managed, diversified portfolios of equities, bonds and other securities, which is rather impossible for a small investor to create with a small amount of capital he/she owes. The other main advantage is the amount of return is mostly higher and less risky than individual investment.

Moreover, the income earned through these investments in the mutual funds from small investors and the capital appreciations realized at the time of appreciations are shared by its unit holders according to the number of units they hold. There are two main type of funds; Open-ended fund units which are issued and can typically be purchased or redeemed as needed at the fund's current net asset value (NAV) per share. Whereas, in case of close-end funds; they are listed on most of the stock exchanges all around the world and can be freely traded easily.

The significance of mutual funds cannot be denied in the field of banking and finance in today’s world. Although mutual funds have been used consistently by advanced countries yet it is relatively new area in the developing countries including Pakistan. Because of this it has not been well-researched in Pakistan yet and only a few studies have included mutual funds as their research topic (Shah & Hijazi, 2005; Sipra, 2006; Afza & Rauf, 2009). The need of conducting research in this area therefore becomes immense.
considering the dearth of knowledge in this regard. The present research has been conducted on the performance of mutual funds in Pakistan and the topic has been chosen keeping in view the importance of this issue. The aim of the present study is to analyze the performance of mutual funds in Pakistani context.

2. Review of Literature

Robert (1988) studied that the effect of size of the mutual fund on its total return can be measured by using the casual relationship of fund’s net assets and return. He also concluded that in US small mutual funds are doing better than big mutual funds. He gave the reason behind smaller size leading to more effectiveness of mutual funds as that they have significant positive risk. Moreover other researchers also shown that more the smaller size of the fund, the more it will have high operating effectiveness.

Gorman (1991) found the same results as mentioned by Robert that small mutual funds (mostly measured by their net assets) perform in most cases faintly better than large mutual funds. Another important basis mentioned by Gorman was that most of the mutual funds swiftly wear out the economies of scale, leading to decline in returns. (Becker and Vaughan, 2001; Chen et al., 2004).

Brown (1995) found out that returns of mutual funds are consecutively correlated over a period of time. He also pointed out that past performance of mutual funds is good predictor of performance in future of mutual funds.

McLoed and Mathotra (1994) analyzed the mutual fund expense specifically 12B-1 and their research proved that these expenses are represented by fund managers as returns. To compliment the research of McLoed and Mathotra, Korkeamaki and Smythe in 2004 examined in detail this relationship and provided a different school of thought that investors were not compensated for paying higher expenses for higher risk adjusted returns.

Carhart (1997) investigated in detail the relationship between fund turnover and funds returns and found out a negative relationship between them.

Livingston and O’Neal (1998) have shown that there is a negative relationship between returns from fund and fund expenses.

Soderlind et al. (2000); Korkeamaki and Smythe, (2004) after the dawn of mutual funds both in developed and under developed countries, there are number of researchers who have experimentally studied between the connection of open ended funds performance with its characteristics in different point in time especially in developed countries.

Soderlind et al. (2000) also found that better performance is achieved by smaller mutual funds having less equity.

Phiplot et al. (1998) Recent empirical research has acknowledged the fact that there is a tendency for equity mutual funds to provide consistent performance relative to other funds over time.

Ramasamy et al. (2003) investigated the comparative importance of various factors in the selection of mutual funds by financial advisors in Malaysia and concluded that reliable past performance of the mutual funds, size of the mutual fund and cost of transaction were the only three main important factors manipulating the performance of the fund.

Narayan (2003) evaluated the performance of Indian mutual funds and reported that these funds are satisfying the needs of the investors and meeting the expectations by giving more returns; taking into account the systematic risk and total risk as well.
Glenn (2004) proved that open ended funds need more cash as asset then close ended funds because they face a possibility of redemption; so it also means that open ended funds have less money investments, leading to low returns.

Droms and Walker (2006) by using time series regression model found out that there is no performance difference between load and no load funds when their relationship is tested with unadjusted and risk adjusted returns.

Mukul and Amarendra (2006) suggested that Indian fund managers have to show more professionalism in both India’s provident and pension funds.

In case of Pakistan, there are few researches with respect to fund industry. Shah and Hijazi (2005) empirically found out that the success of mutual fund sector in Pakistan lies in the overall performance of the fund industry and the role of the regulating bodies. Furthermore overall results suggested that mutual funds in Pakistan are somehow adding value to the economy and some of the funds under performing are due to diversification problems.

Cheema and Shah (2006) proved that fund managers can only be successful in Pakistan if they protect the small number of investors by making sure that mutual funds are complying the rules of corporate governance.

Sipara (2006) reported that according to Jensen and Treynor measures almost half of the funds outperformed the market portfolio over the last five years in Pakistan but when we take adjusted risk factor for Fama’s net selectivity to measure the market portfolio, it outperformed all the funds except one.

Khan (2008) found that past results of funds cannot predict the future results.

Afza and Rauf (2009) by using Sharpe ratio in methodology with the help of pooled time-series and cross-sectional data and focusing on different fund attributes such as fund size, expenses, age, turnover, loads and liquidty found that lagged return, liquidity and 12B-1 had major impact on fund performance.

So, it can be concluded that there are mixed results in evaluating the management effectiveness of open-ended and close ended mutual funds in Pakistan for the purpose of benefiting the fund managers and the small investors. So our research will now focus on further clarifying the role of management effectiveness in fund sector by using Treynor and Sharpe measure.

3. Methodology

3.1 Research Questions

Q1: Whether the rate of return on mutual funds is greater than the average market returns?

Q2: Whether the fund managers have the ability to diversify investment in mutual funds to eliminate systematic risk?

3.2 Hypothesis

H0: The return of mutual funds is not greater than average market return.

H1: The return of mutual funds is greater than average market returns.

H2: Mutual Funds are fully diversified to eliminate systematic risk.

H3: Mutual funds are not diversified and carry systematic risk.
3.3 Data and Analytical Framework

Closing monthly prices and dividend data for 15 mutual funds are taken from the electronic data provided by the Business Recorder for the period January 2005 to December 2009. The corresponding values for the KSE 100 index are taken from finance.yahoo.com. Six monthly t-bills rate are used as risk free rate and this data is taken from the electronic data provided by State Bank of Pakistan on its web site.

From these prices and dividend data, monthly returns were calculated for the funds and the KSE 100 index. The standard deviation of these returns for the period 2005-2009 was calculated and the average monthly returns were regressed against the KSE 100 index (market portfolio) for the five years to determine betas.

We have used Sharpe Measure and Treynor Measure, for performance evaluation of mutual funds in Pakistan. These models enjoy international recognition and are used worldwide for this purpose.

3.4 The Treynor Model

Treynor considers risk as systematic and unsystematic risk. The unsystematic risk can be eliminated through diversification whereas systematic risk is the market risk which cannot be diversified away and all investors have to bear it. This can be calculated through “beta” and portfolios expected return depends upon its beta. Treynor model is used to measure the performance of a managed portfolio in respect of return per unit of risk (systemic) risk

\[
\text{Treynor Ratio} = \frac{R_p - R_f}{\beta}
\]

\(R_p\) = the observed average fund return;
\(R_f\) = the average risk free return;
\(\beta\) = coefficient as a measure of systematic risk.

The numerator of this ratio is the risk premium and the denominator is beta (a measure of risk), the total expression indicates the portfolio’s risk premium return per unit of risk. Every risk averse investor would prefer to maximize this value. It is important to note that beta is a systematic risk measure and does not discuss diversification of the portfolio. It is implicitly assumes that the portfolio is completely diversified and it is only the systematic risk which is a relevant risk measure.

3.5 Sharpe Ratio

William F. Sharpe introduced the concept of risk free asset and return on such asset as risk free rate in his portfolio theory. The risk free rate is used to determine the required rate of return on risky assets. The required rate of return has a great significance for the valuation of securities, by discounting its cash flows with the required rate of return. This led to the development of CAPM. Shortly after that Sharpe conceived a composite measure to evaluate the performance of mutual funds.

The Sharpe measure of portfolio performance (designated S) is stated as follows
\[ S_i = \frac{R_i - RFR}{\sigma_i} \]

where:
- \( R_i \) is the average rate of return for portfolio \( i \) during a specified time period
- \( RFR \) is the average rate of return on risk-free assets during the same time period
- \( \sigma_i \) is the standard deviation of the rate of return for portfolio \( i \) during the time period

\[
\text{Sharpe Ratio} = \frac{(R_p - R_f)}{\delta_p}
\]

Where:
- \( R_p \) is the observed average fund return;
- \( R_f \) is the average risk-free return;
- \( \delta_p \) is the standard deviation of fund returns.

This composite measure of portfolio performance is similar to the Treynor measure; however, it seeks to measure the total risk of the portfolio by including the standard deviation of returns rather than considering beta (systematic risk) only. Since portfolio’s risk premium is divided by standard deviation of the portfolio, this measure indicates the risk premium return earned per unit of total risk. This measure uses total risk to compare portfolios performance. Finally, notice that in practice the standard deviation can be calculated using either total portfolio returns or portfolio returns in excess of the risk-free rate. The Sharpe measure, therefore, evaluates the portfolio manager on the basis of both rate of return performance and diversification.

4. Results and Discussion

Table 4.1 Treynor ranking

<table>
<thead>
<tr>
<th>Symbols</th>
<th>Beta</th>
<th>Return</th>
<th>Treynor ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANMF</td>
<td>0.889303</td>
<td>-0.00485</td>
<td>-0.10666</td>
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<tr>
<td>PUDF</td>
<td>0.923176</td>
<td>0.018193</td>
<td>-0.07778</td>
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<tr>
<td>FDMF</td>
<td>1.179711</td>
<td>-0.01453</td>
<td>-0.08861</td>
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<tr>
<td>INMF</td>
<td>0.281874</td>
<td>0.016698</td>
<td>-0.26005</td>
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<tr>
<td>GASF</td>
<td>0.932639</td>
<td>-0.00</td>
<td>-0.09711</td>
</tr>
<tr>
<td>DOMF</td>
<td>0.626083</td>
<td>0.04</td>
<td>-0.07946</td>
</tr>
<tr>
<td>MBF</td>
<td>0.685124</td>
<td>-0.00282</td>
<td>-0.13136</td>
</tr>
<tr>
<td>JSLCF</td>
<td>2.693622</td>
<td>0.117582</td>
<td>0.01024</td>
</tr>
<tr>
<td>JSGF</td>
<td>1.356705</td>
<td>-0.03</td>
<td>-0.08992</td>
</tr>
<tr>
<td>PSAF</td>
<td>1.063658</td>
<td>-0.00162</td>
<td>-0.08613</td>
</tr>
<tr>
<td>ALCCL</td>
<td>0.726966595</td>
<td>-0.36781</td>
<td>-0.62976</td>
</tr>
<tr>
<td>PPFL</td>
<td>1.130894</td>
<td>0.000734</td>
<td>-0.07893</td>
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<tr>
<td>PGF</td>
<td>1.128702</td>
<td>-0.0075</td>
<td>-0.07974</td>
</tr>
<tr>
<td>PEF</td>
<td>1.1611</td>
<td>-0.00635</td>
<td>-0.08299</td>
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<tr>
<td>SFWF</td>
<td>1.302902</td>
<td>-0.02123</td>
<td>-0.08537</td>
</tr>
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</table>

Source: Developed from funds-price data
<table>
<thead>
<tr>
<th>Symbols</th>
<th>Standard deviation</th>
<th>Return</th>
<th>Sharpe ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANMF</td>
<td>0.126729</td>
<td>-0.00485</td>
<td>-0.74846</td>
</tr>
<tr>
<td>PUDF</td>
<td>0.321789</td>
<td>0.018193</td>
<td>-0.22315</td>
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<td>FDMF</td>
<td>0.191298</td>
<td>-0.01453</td>
<td>-0.54644</td>
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<tr>
<td>INMF</td>
<td>0.315097</td>
<td>0.016698</td>
<td>-0.23263</td>
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<td>GASF</td>
<td>0.150995</td>
<td>-0.00</td>
<td>-0.59981</td>
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<tr>
<td>DOMF</td>
<td>0.351634</td>
<td>0.04</td>
<td>-0.14148</td>
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<tr>
<td>MBF</td>
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<td>-0.00282</td>
<td>-0.81882</td>
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<tr>
<td>JSLCF</td>
<td>0.194182</td>
<td>0.117582</td>
<td>0.142044</td>
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<tr>
<td>JSGF</td>
<td>0.199566</td>
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<td>-0.61133</td>
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<td>PSAF</td>
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<td>-0.65799</td>
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<tr>
<td>ALCL</td>
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<td>-8.67028</td>
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<tr>
<td>PPFL</td>
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<td>-0.54767</td>
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<tr>
<td>PGF</td>
<td>0.143218</td>
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<td>-0.68081</td>
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<tr>
<td>PEF</td>
<td>0.15086</td>
<td>-0.00635</td>
<td>-0.63871</td>
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<td>SFWF</td>
<td>0.389219</td>
<td>-0.02123</td>
<td>-0.28577</td>
</tr>
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</table>

Source: Developed from funds-price data

Five years is a short period to provide any conclusive evidence about the performance of mutual funds in Pakistan. However, it clearly spells that the performance of portfolios relative to market cannot be considered good. Our study supports the results of research conducted in USA and Europe. There is not a single company that beats the market. This raises questions about the ability of the portfolio managers about market timing, and their ability to diversify their portfolios.

The low portfolio beta is due to the inclusion of Term Finance Certificates and other Fixed Income Securities in the portfolio of these funds.
References


