Performance Evaluation of Close-ended Mutual Funds by Investment Objectives in Pakistan's Economy

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Abstract

The Purpose of this study is to measure the performance of close-ended Mutual Funds and specify them into different categories for the guidance of investors. It also identifies Funds with high and low performance according to their investment objectives. To calculate performance of close-ended mutual Funds, five ratios via Sharpe Performance Index, Treynor Performance Index, Jensen Alpha, Sortino Ratio And Informational/ Appraisal Ratio were used. To calculate performance secondary data was collected from Karachi stock exchange (KSE) & Business Recorder web site for almost all closed-ended Mutual Funds, which have been trading in the last eight years i.e. from 2001–2008. The data was collected on monthly bases. The results measures provided under different ratio almost similar relation between risk and return except Sortino Ratio, because it dealt only with downside risk. The Ranking differentials through various measures indicate fluctuating environment of Pakistan money markets. However, in the light of varying investment objectives, the results of Funds different, in measures, causing dissimilarities in their ranking. This indicates that close-ended mutual fund industry is not a flourishing stage in Pakistan. The results suggest Fund managers to adopt such strategies that could provide maximum benefit to the investors. The study provides analytical comparison between different closed ended Mutual Fund companies providing significant guidance for fund managers as well as the investors.

Key words-*Performance, Close-ended mutual funds and Evaluation, Pakistan*

Introduction

Mutual Fund is a mode of investment in which numerous investors pool their savings to reap the benefits with a determined strategy of returns. A group of financial experts manages the money of these savers and invests in multiple securities, available in financial markets, such as stocks, bonds, commodities, precious metals and other remunerative businesses. This group of persons is called as Fund management ant the Fund managers are responsible for investment decisions. The subscribers of the Fund may be given a document, certifying their subscription and entitling them to the pro-rata profit actually earned by the Fund, These documents may be termed as certificates, units, shares or any other names. A major advantage of mutual Fund is 'diversification', which is a technique to reduce the risk and obtain most favorable returns. It is actually a cost affective process of investment.

Mutual Funds are designed to invest in a large number of specific securities and market instruments. These are tailored for small investors who participate with small amounts of money and secure high return with the help of professional managers. The Fund managers organize their highly diversified portfolios, in which they select such securities that fetch maximum returns against very low risks. Profit can also be earned from mutual Funds by appreciation in the original price of the investment units held by investors.

Mutual Fund investment was originally initiated in 1924 in North America, but it was only during 1980s that it became popular all over the world, especially in United States. According to Wilford, these days the total Funds investment is nearly twenty trillion dollars and half of this amount is denoted from United States investment in mutual Funds (Wilford, 2008).

In Pakistan the mutual Fund investment concept was introduced in 1962, but the main influx of mutual Funds came in 1964. A closed ended Fund, named "Investment Corporation of Pakistan" (ICP) was set up in 1966. This industry managed almost 26 Funds which were traded in financial market under two different categories, namely, open ended Funds and closed ended Funds. ICT had government monopoly in this industry, but subsequently the private sector injected huge resources, during 1995-1996. By the end of 2008 the investment or assets size of this industry increased to 6 billion dollars i.e. equivalent to 385.5 billon rupees. This

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increase was predominantly caused by open ended Funds that amounted to Rs. 331.6 billion; whereas the closed ended remain almost stagnant at Rs. 54 billion by the end of 2008. (Shah and Hijazi, 2005).

Mutual Fund industry is also called as asset management industry and during the last few years it has flourished significantly. This industry provides a high level of trust to its investors by ensuring attractive returns with low risks. The Fund managers are constantly looking for different investment opportunities in financial markets, with low risk but high returns. A set of such selected securities in which investors invest and earn a high profit is called "portfolio". The investors usually desire to seek fully diversified portfolios, through which investors can acquire more benefits by investing their capital. In United States the investors normally do not prefer to invest in equity market, instead they favor to invest in international equity Funds.

From investment point of view the mutual Fund performance is an important aspect. This investment area is helpful for both institutions as well as the individuals. In stock markets, the mutual Funds investments are proved as driving force. By structure, the mutual Funds are divided in two classifications; open-ended Funds and close-ended Funds, as already mentioned above.

Open-Ended Mutual Funds

These Funds do not trade at the secondary markets. If an investor wants to sell his units of Fund, he will sell those units to the Fund at the present market price and the Fund company is obliged to buy those units from the investors at that price. The market price of the open ended Fund is same as the value of Fund's Net Assets value (NAV). In the same manner, if somebody wants to buy the units of the open ended mutual Fund, he must buy these from the Fund itself. These Funds can buy and sell through out the year because they have no fixed maturity period.

As the open-ended Funds are not traded in secondary market so the buying and selling of these Funds is held through Fund itself at Net Asset Value (NAV).

Net Asset Value (NAV) = (Total Assets - Obligations) / (outstanding number of shares or units)

Net asset value (NAV) is calculated at the end of each trading day. The price of Fund is equal to NAV rather than market price, which is determined by supply and demand mechanism.

Closed-Ended Mutual Funds

These Funds are traded in secondary market because they register in stock exchange with an agreed number of units. Investors can buy or sell units of mutual Funds at any moment in secondary market. These Funds are just like other stocks which are traded in stock exchange. The value of close-ended Fund fluctuates through demand and supply forces in market and the Funds perform like other market securities. Some other features of close ended Funds are under:

1. There are low trading costs in stock exchange.
2. Investors can buy and sell their units at any time and can start investment with even small capital.
3. Diversification is possible due to market knowledge and expertise of the Fund managers.

Types of Mutual Funds by Investment Point of View

The basic objective of all mutual Funds is to provide benefits to their investors through professional management and diversification. From objective point of view the following are major types of Funds in Pakistan.

1. Asset Allocation Funds
2. Capital Protected Funds
3. Equity Funds
4. Fund of Funds
5. Income Funds
6. Islamic Funds

Asset Allocation Funds. These Funds give a verity of investments in all types of securities to diversify or minimize the risk for investors. In this type of Fund all portfolios created with the preference of maximum diversification of risk in all categories of assets or securities. All assets with low maintenance cost are selected for the portfolio. The portfolios are created keeping in view the investor needs and propensities to absorb risks. To create asset allocation Fund Portfolios, the manager select different types of securities like domestic and foreign stocks, government securities and some other vehicles. It is a time saving mechanism to invest in different modes through a single Fund by offering investment opportunities in a wide rage of securities.

Capital Protected Funds. Capital Funds actually provide a benefit to the investors by offering a pre-determined return at a determinable future date, which is the primary objective of these Funds. Capital protected Funds have the word "protected" in their names. Without this word (protected) the Funds can not be added to this category.

Equity Funds: These Funds are considered high risk investments because they offer investments in medium and long term equities. They provide return through appreciation of these equities as also through dividends. Long term investment offers growth of return under growth schemes.

Fund of Funds*:* Fund of Fund offers investments completely in some other Fund just like an individual Fund which invests in different securities or stocks. This type of Fund is described as Funds which may include for example, private equity Fund. The Funds which invest initially in hedge Funds are called hedge Funds. Such investment can start with very small investment and can be a precious opportunity for small investors.

Income Funds: The Main objective of this Fund is to provide a regular income to investors. This type of Fund, generally invests in fixed income securities, like bonds, debentures and government securities etc. Income Funds are considered medium to low risk holding investments.

Islamic Funds: These types of Funds are managed and monitored by shariah advisory councils and invest only in shariah compliant stocks.

Literature Review

Selection of appropriate mutual Funds that offer high return or perform best of all is a complicated job. Before 1960 the investors depended on rate of the return to calculate the portfolio performance because of the ignorance to measure this risk. Risk plays a leading role to calculate the portfolio performance. At the beginning, the portfolio theory of the sixties provided that the risk was calculated by beta as the coefficient of variation in risk. Many researchers have done their research to evaluate the performance of mutual Funds with main work on US mutual Funds (Jensen 1968; Carlson 1970; McDonald 1974; Firth 1977; Lehmann and modest 1987). Typically, the performance was calculated by using Sharpe index, Treynor index and Jensen index. Performance evaluation of the portfolios from investment point of view was first described by Treynor in 1965, Sharpe in 1966, and Jensen in 1968. Moreover, the researchers found proofs of the continuation with the mutual Fund performance about short-term horizons (Götzmann & Ibbotson 1994; brown & Götzmann 1995; Gruber 1996).

Previous research described the selection of securities and timing of investment as a skill to evaluate the performance, First time selection of securities and proper direction about it for investors was described in sixties (Treynor & Mazuy in 1966; Henriksson & Merton 1981; Grinblatt & Titman 1989b).

In 1966 the portfolio excess return was calculated by adjusting the total risk of market for the security. This calculation was done for thirty four mutual Funds in the specific time period from 1945-1963. It also described that the expenses of mutual Funds varied (sharp 1966).

The performance evaluation of a portfolio investment by adjusting excess return (i.e. average of risk free rate) is less than average return of security for checking the percentage of market risk and performance of the portfolio investment (Treynor 1965).

After Sharpe and Treynor research, another statistical measure was introduced in 1968 that evaluated the mutual Funds performance based on management skills and selection of the securities to introduce a risk free portfolio for the investors. For this purpose the data was collected in a specific time period 1955-1964. In this research it was observed that stock prices could not provide advantage to buy or hold securities. This research had proved that mutual Fund investment was better than any other market investment (Jensen 1968).

To calculate abnormal performance of mutual Fund, the use of standard mutual Fund performances are unreliable and if style of particularly Fund is different from value weighted market portfolio then it is difficult to calculate abnormal performance of mutual Funds (Kothari & Warner 2001).

Generally, a reverse relation exists between security selection and market timing. Asset management is ordinarily having negative market timing skills, if valued in models (Treynor & Mazuy 1966; Henriksson & Merton 1981). Negative market timing decisions of asset managers still seem to be compensated by the higher choice and skills. Proofs of the negative respect have completely been demonstrated in the United States and in United Kingdom as well internationally through evaluation of Fund turnover (Cumby & Glen 1990; Coggin, Fabozzi & Rahman 1993; Bollen & Busse 2001).

Some researchers observed that higher selectivity performance is very important to evaluate the Funds performance and it was only due the mutual Fund managers (Chang & Lewellen 1984; Henriksson 1984; Bello & Janjigian 1997). To evaluate the performance the forecasting of some micro and macro factors can improve the investment decisions (Lee & Rahman 1990).

In Malaysia, some researchers analyzed the data of thirty-one mutual Fund during 1990-1995 and that selectivity and market conditions did not provide full information for investment decisions. On selectivity performance the investment trusts was a positive relation, while the timing performance was negatively related. The results also described that manager did not perform well to measure the actual investment timings which was an important selection for investment decisions (Treynor & Mazuy 1966.

Mutual Funds performance was calculated for a specific time period from 1982-1988 by using the Jensen ratio. For this purpose fifteen international Funds were selected which were operating in US financial markets. The results were very positive with high returns because of global difference (Cumby & Glen 1990).

Researches on mutual Fund performance were taken in some developed countries where the investment was in boom. A professor conducted a study on performance appraisal of Greek mutual Funds which derived positive correlation between risk and return in the majority of mutual Funds (Artikis 2003).

Some researchers decided that on an average all types of Funds behave against market conditions. Concerning the relation efficiency comparison there were no important differences in the turnover under all types of the Funds. The study also found that the degree of the diversification of the investment trust Funds was low and under expectations (Rozali & Abdullah 2006).

A study where the researchers concentrate upon anomalous performance of the mutual Funds and calculate mutual Fund performances standard, are defective and can run out to wrong conclusions. Also it is hard to discover anomalous performance if there is particularly a Fund whose style and qualities differ from those of the worth-loaded market portfolio (Kothari and Warner 2001). A structural analysis was presented about mutual Funds (Lobell 1961).

The problem of the Survivorship Naggings and mutual Fund performance was stated in a study, that only those Funds survived which exaggerated measured performance. In the vast majority of cases a Fund which disappears is not dissolved, but becomes in another Fund,

often melted within the same family of the Fund (Elton, Gruber & Blake 1996).

Some researchers have examined a potential conflict between mutual Fund investors and mutual Fund companies. Their intention was to investigate the risk-taking behavior of Funds in the light of the agency respect between the Fund and customers (Chevalier & Ellison 1997).

Risk-Return Relationship based on collected data from stock exchange calculated debt and equity ratio that described insignificant correlation for required return in all regression results; comparison between the performance of the mutual Fund, portfolio of risk free asset and the market portfolio, which has a beta equal to the risk of the Fund make a clear difference for the performance of mutual Funds (Fama 1972).

There is a contrary relationship between expense ratio and performance of the mutual Funds because this cost effect of the return of portfolio investment also examined cost increases if Fund manager use an active trading style (Carhart 1997).

A study founded that Funds with lower transaction cost performed well as compared to high transaction cost Funds. Recent studies examined the performance of individual stocks in Fund manger portfolio. A brokerage commission is not the only cost for investor this is rather the start of expenses. Brokerage commission is the tip of the transaction costs iceberg (Daniel 1999; Grinblatt & Titman 1992).

Investors can earn a high return by taking high risk. Mutual Funds provide services to minimize the risk and maximize the return by using some tools to diversify this risk for investment decisions and expense are directly correlated with returns (Khouri 1993).

2.1. Hypotheses

H_o: Mutual Funds perform significantly against equity market performance in Pakistan.

H_1: Mutual Funds do not perform significantly against equity market performance in Pakistan.

Methodology

Sample and Data Collection

Among the population only closed ended mutual Funds active from 2001-2008 were selected as sample. As Funds were not available in all eight years therefore in order to find the ratios for the performance of the mutual Fund, each year performance was taken separately to make significant results by taking average of these ratios.

As many as 23 mutual Funds were taken in to account in these Funds. Almost 8 Funds remained active from 2001 to 2008 for which the data was available from 2001-2008, such as: Almeezan mutual Fund, Asian stock Fund Ltd, Dominion stock Fund Ltd, 1st capital mutual find, Golden arrow selected stock Fund Ltd, prudential stock Fund Ltd, Safeway mutual Fund and Tri-star mutual Fund. Investic mutual Fund was available only in 2003-2008. Pakistan premier Fund was available in 2004-2008. Some Funds were available in 2005-2008, like PICIC growth Fund, PICIC investic Fund, Atlas Fund of Fund and Pakistan strategic Fund,. PICIC energy Fund and First Dowood mutual Fund were present in 2006-2008. Some Funds were present in 2007-2008 like NAMCO balance Fund, Meezan balance Fund, UTP-large cap Fund and BMA principle guaranteed Fund. JS value Fund was available in 2008 only. Therefore only those Funds, which were available by 2008, were taken into account. The Fund not existing in 2008 were not taken in sample size.

For this purpose the secondary data was collected from the B-recorder website for market index prices on monthly basis. Net Asset Value (NAV) was not used in the working to measure the ratios, instead KSE 100 index against the prices of all close-ended mutual Funds operating in Pakistan were collected on the monthly basis.

For risk free rate, the values of T-bills of twelve months were taken from the state bank report. T-bills rates were also on monthly basis. Data for twenty three Funds was collected in different time periods. All Funds data was treated on monthly basis then take average of the results per annum to remove the time period difference problem.

Measurement Ratios

This study approach is quantitative and the performance has been measured through five different ratios which are described as under:

Sharpe Ratio. Sharp ratio (1966) is a composite measure in which the standard deviation is used to measure the portfolio risk that divides the return of the Fund after the reduction of risk free rate in the same time period. This model was used to measure the success of a well managed portfolio in the reflection for the unit of the risk against return. This ratio also considers the portfolio manager's skill on the basis of the rate of return achievement and diversification, considering whole risk of the portfolio/Fund.

In the working of this ratio the data of Fund was collected from B-recorder, also called market price of Fund to calculate the returns of these values. The previous values were deducted from current values then divide with the previous values. The mean of the returns is calculated in excel sheet through statistic formula and taken average of these yearly calculated mean or averages of returns. In excel sheet the standard deviation is calculated on annual basis. After collecting the averages and standard deviations of Fund returns annually, the sharp ratio was calculated through the formula of this ratio.

Through these prices yearly ratio results of each Fund was available, then the average of these yearly ratios were calculated to arrive at a single value of Sharpe ratio of each Fund. The process was repeated for 23 times to take the final results that are presented in the following table-1 of Sharpe ratio.

$$S = (Rp - Rf) / \sigma p$$

Where:

S = (Sharpe ratio to evaluate performance)

Rp = (average of Funds actual return during a specified time period on the basis of market prices predict the risk of the Fund/portfolio)

Rf = (average of T-bill or Risk-free rate of return during the same time period)

σp = (standard deviation of returns for the Fund).

Treynor Ratio. Treynor's ratio was introduced in 1965 by Treynor. This is a ratio to find the portfolio or Fund performance, which measures the risk with beta and calculates portfolio's market risk premium comparative to its beta. To find this ratio the returns of the given data of risk free rate and Fund prices is calculated then the mean values or average of these returns on annual basis, is determined and used as nominator of the Treynor's ratio.

To calculate the denominator of this ratio the data of market index is calculated from Karachi Stock Exchange website (KSE) and then correlation between the Fund returns and index returns is determined through statistical formula. This correlation divided by variance of Fund returns provides the value of Beta (βp). These values were used in the given formula of Treynor's ratio and calculated the value on annual basis to evaluate the performance of the close-ended mutual Funds. Finally, the average of the yearly values for each Fund was calculated to get a single value for each Fund. This process was repeated for 23 times to calculate the performance of all twenty three close-ended mutual Funds.

Securities or Funds have two types of risks from the investment point of view, i.e. systematic risk and unsystematic risk. Unsystematic risk cab be diversified by the company but systematic risk can not be removed, instead it can be calculated for investment purposes. In this ratio the denominator of the ratio, beta predicts the value of the systematic risk of a security. Through this ratio we can calculate the return per unit risk of the Fund to invest in portfolio. Also through this ratio the systematic risk can be minimized through managed portfolio of selected Fund with lower beta.

$$T = (Rp - Rf) / \beta p$$

Where:

T = (Treynor's ratio to evaluate the performance measurement of the Fund)

Rp = (Average rate of return for Fund during a specified time period)

Rf = (T-bill or Risk-free rate of return during the same time period)

βp = (Beta of the Fund/portfolio)

Jensen's Alpha. Jensen's alpha was introduced by Jensen in 1968 through the following formula in terms of realized return, assuming that CAPM model is empirically valid. This ratio calculates the abnormal risk of the portfolio that shows the difference between actual earned rate of return and expected rate of return with specific market conditions and portfolio risk.

To calculate this ratio there are two methods, first one is through regression and the other one is through formula which is as follows:

$$\text{Jensen's alpha} = \alpha = \sum Y/n - \beta \sum X/n$$

$$\beta = (n \sum XY - \sum X \sum Y) / (n \sum X^2 - (\sum X)^2)$$

For regression method this formula can be used to calculate the Jensen alpha.

$$\text{Jensen's alpha} = \alpha_i = Ri - (Rf + \beta_i (Rm - Rf))$$

In the above stated first method $\sum X$ is equal to the summation of (Ri – Rf) and is calculated by finding difference between the return of Fund and return of risk free rate of returns and then calculated their sum. $\sum Y$ is equal to the summations of (Rm - Rf) that is the difference between market index return and t-bills return on the monthly basis. The sum of these monthly values gives a single value at the end of each year.

To calculate their ratio the beta is calculated by stated formula. For $\sum XY$ i calculate the product of X and Y and the summation are calculated. For $\sum X \sum Y$ multiply the summation values of X and Y. For $\sum X^2$, the square of X is found and then calculated to summation. For $(\sum X)^2$ after summation of values of X, made square of it. After calculating all these terms the value of beta is calculated through formula putting all these values in it. To calculate alpha, the formula stated above is used and all values are inserted as done before.

$$E(Ri) = RFR + \beta i [E(RM) - RFR]$$

Where

$E(Ri)$ = (The expected return on Fund or portfolio *i)*

RFR = (The rate of return of T-bill or treasury stock)

δi = (The systematic risk (beta) for Fund or portfolio *i)*

$E(RM)$ = (The expected return of the market portfolio or return of market index)

Sortino Ratio. Sortino Ratio was introduced in 1994 by Sortino and Price. Pedersen and Satchell had proved the risk/return frontier in 2002.This ratio measures the risk-adjusted return of an investment asset or portfolio. It is a modification of the Sharpe ratio but treats only those returns falling below to the expectation or required rate of return, of a user-specified target. The Sharpe ratio penalizes both downside and upside risk equally. It is thus a measure of risk-adjusted returns to treats risk more rationally than the Sharpe ratio. To calculate this ratio the return of data such as Funds prices and risk free rates are determined. Return deviation from mean is calculated as Ri - average of Ri values, then the square of negative returns is calculated to find average of these values.

(Average values of Fund return "R" – Average value of risk free return "T") / Average value of down side risk "DR" = Sortino Ratio "S"

$$S = (R - T) / DR$$

To take a single value of this ratio for each mutual Fund, the average of all monthly results of ratio was found out. To calculate the performance the process was repeated for twenty-three times and arranged according to the type of Funds and described the performance in simple order form. This ratio was similar to the sharp ratio but dealt with only negative returns.

$$S = (R - T) / DR$$

Where

R = (The asset or portfolio realized return)

T = (The target or required rate of return for the investment)

DR = (The downside risk.)

The performance of the closed-ended mutual Funds is given below to compare the results and describe the results in chapter four.

Informational/ Appraisal Ratio. Information ratio, also known as an "appraisal ratio", measures a portfolio' average return in excess in comparison to the benchmark portfolio and divided by the standard deviation of the excess returns. The information ratio is a measure of risk-adjusted return that can be calculated by the following formula:

$$IR_i = (R_i - R_{i\,b}) / \delta_{ER} = ER_i / \delta_{ER}$$

To calculate this ratio, the return of the selected Fund price data and the return of bench mark are calculated. Bench mark is taken as a standard performance of Fund like Asian Stock Fund Ltd. This Fund is selected as a bench mark because in previous calculated ratios it was almost at the same top position in performance.

According to formula the difference between the return of the Fund and the return of the bench mark is determined and then divide by the standard deviation of the excess return. Excess return is calculated by taking difference between return of the Fund and the return of the bench mark, thereafter the standard deviation is calculated.

The nominator of the following ratio is a representation of investor's ability of the portfolio construction by selecting the best Fund. The denominator of the ratio is the measurement of unsystematic risk. After calculation of this ratio on the monthly basis, the average of these monthly results was taken into a single value of this ratio. The process was repeated for 23 times to find the performance of mutual Funds individually.

Where:

IRi = (Information ratio of Fund)

Ri = (The average return of Fund during the specified time period)

Rb = (The average return for the benchmark or Asian Stock Fund Ltd during the same time period as the Fund)

δER = (The standard deviation of the excess return during the specific time period)

Result & Discussion

Descriptive statistical measures were taken to evaluate the performance of 23 closed-ended chosen mutual Funds. The results of these ratios explained in different types of categories which were derived from the investors' point of view. In other words the performance of Funds was evaluated in the following categories. To calculate the performance of Funds, five ratios or statistical measures and the consummated results were used according to the ratios in all categories.

1. **Asset Allocation Funds**- In this category we have four close-ended funds named as: We Balance Fund, Pakistan Strategic Fund, NAMCO Balanced Fund and JS Value Fund.

   Sharpe Ratio. According to the Table-1 which explains the results of this ratio "We Balanced Fund" perform better than others and have a highest value e.g. 0.826778. "JS Value Fund" has the lowest value e.g. -0.5837577. Other two lies in middle of these values.

   Treynor Ratio. According to the table-2 which explains the results of this ratio "We Balanced Fund" perform better than others and have a highest value e.g. 0.28085569. "Js Value Fund" has the lowest value e.g. -0.0935956. Other two lies in middle of these values.

   Jensen's Alpha. According to the table-3 which explains the results of this ratio "NAMCO Balanced Fund" perform better than others and have a highest value e.g. 0.013463. "Pakistan Strategic Fund" has the lowest value e.g. -0.021758. Other two lies in middle of these values. These results are opposite to the previous ratios.

   Sortino Ratio. According to the table-4 which explains the results of this ratio "NAMCO Balanced Fund" perform better than others and have a highest value e.g. -2.6729788. "We Balanced Fund" has the lowest value e.g. -7.0927726. Other two lies in middle of these values.

   Informational Ratio / Appraisal Ratio. According to the table-5 which explains the results of this ratio "We Balanced Fund" perform better than others and have a highest value e.g. -0.101701. "Js Value Fund" has the lowest value e.g. -0.435861. Other two lies in middle of these values. "Asian stock Fund Ltd" is Bench mark to calculate this ratio**.**

2. **Capital Protected Funds**- In this category we have only one fund named as "BMA Principle Guaranteed Fund" the results of this fund according to different ratios are the following:

   Sharpe ratio. According to table-1 the result of "BMA Principle Guaranteed Fund" in this ratio is -0.267889.

   Treynor Ratio. According to table-2 the result of "BMA Principle Guaranteed Fund" in this ratio is -0.0329762.

   Jensen's Alpha. According to table-3 the result of "BMA Principle Guaranteed Fund" in this ratio is -0.019106.

   Sortino Ratio. According to table-4 the result of "BMA Principle Guaranteed Fund" in this ratio is -2.83779882.

   Informational / appraisal Ratio. According to table-5 the result of "BMA Principle Guaranteed Fund" in this ratio is -0.143968655. "Asian stock Fund Ltd" is Bench mark to calculate this ratio.

3. **Equity funds**- In this category we have fourteen funds named as Asian Stocks Fund Ltd, Safeway Mutual Fund, 1st Capital Mutual Fund Ltd, PICIC Investment Fund, Pakistan Premier Fund, First Dawood Mutual Fund, Golden Arrow Selected Stocks Fund Ltd, PICIC Growth Fund, PICIC Energy Fund, Prudential Stocks Fund Ltd, Investec Mutual Fund Ltd, Tri-Star Mutual Fund Ltd, Dominion Stock Fund Ltd, and UTP-Large Cap Fund. The results of these funds according to the fowling ratios are stated as:

   Sharpe ratio. According to the table-1 which explains the results of this ratio "Dominion Stock Fund Ltd" perform better than others and have a

highest value e.g. 0.12579741. "PICIC Growth Fund" has the lowest value e.g. -0.5508444. Other funds lie in middle of these values.

Treynor Ratio. According to the table-2 which explains the results of this ratio "Prudential Stocks Fund Ltd" perform better than others and have a highest value e.g. 0.3018716. "Dominion Stock Fund Ltd" has the lowest value e.g. -0.3275255. Other funds lie in middle of these values.

Jensen's Alpha. According to the table-3 which explains the results of this ratio "Safeway Mutual Fund" perform better then others and have a highest value e.g. 0.5020871. And "Prudential Stocks Fund Ltd" has the lowest value e.g. -0.046988. Other funds lie in middle of these values.

Sortino Ratio. According to the table-4 which explains the results of this ratio "Dominion Stock Fund Ltd" perform better then others and have a highest value e.g. -5.327532. . "Safeway Mutual Fund" has the lowest value e.g. -10.859428. Other funds lie in middle of these values.

Informational / Appraisal Ratio. According to the table-5 which explains the results of this ratio "Tri-Star Mutual Fund Ltd" perform better than others and have a highest value e.g. -0.0872749. "UTP-Large Cap Fund" has the lowest value e.g. -0.327451. Other funds lie in middle of these values. "Asian stock Fund Ltd" is Bench mark to calculate this ratio.

4. **Funds of Funds-** In this category we have only one fund named as "Atlas Fund of Funds" the results of this fund according to different ratios are the following:

   Sharpe ratio. According to table-1 the result of "Atlas Fund of Funds" in this ratio is -0.442581.

   Treynor Ratio. According to table-2 the result of "Atlas Fund of Funds" in this ratio is -0.1104862.

   Jensen's Alpha. According to table-3 the result of "Atlas Fund of Funds" in this ratio is -0.019009.

   Sortino Ratio. According to table-4 the result of "Atlas Fund of Funds" in this ratio is -5.9492366.

   Informational / appraisal Ratio. According to table-5 the result of "Atlas Fund of Funds" in this ratio is -0.11835. "Asian stock Fund Ltd" is Bench mark to calculate this ratio.

5. **Income Funds-** In this category we have only one fund named as "Pak Oman Advantage Fund" the results of this fund according to different ratios are the following:

   Sharpe ratio. According to table-1 the result of "Pak Oman Advantage Fund" in this ratio is -0.4901099.

   Treynor Ratio. According to table-2 the result of "Pak Oman Advantage Fund" in this ratio is -0.2629962.

   Jensen's Alpha. According to table-3 the result of "Pak Oman Advantage Fund" in this ratio is 0.020534.

   Sortino Ratio. According to table-4 the result of "Pak Oman Advantage Fund" in this ratio is -13.74528.

   Informational / appraisal Ratio. According to table-5 the result of "Pak Oman Advantage Fund" in this ratio is -0.038668. "Asian stock Fund Ltd" is Bench mark to calculate this ratio.

6. **Islamic Funds-** In this category we have two funds named as "Al-Meezan Mutual Fund" and "Meezan Balance Fund" the results of this fund according to different ratios are the following:

   Sharpe ratio. According to table-1 the result of "Al-Meezan Balance Fund" in this ratio is -0.0442219 and result of "Meezan Balance Fund" in this ratio is -0.4977711.

   Treynor Ratio. According to table-2 the result of "Al-Meezan Balance Fund" in this ratio is 0.00363607 and result of "Meezan Balance Fund" in this ratio is -0.08227.

   Jensen's Alpha. According to table-3 the result of "Al-Meezan Balance Fund" in this ratio is 0.0080113 and result of "Meezan Balance Fund" in this ratio is -0.013941.

   Sortino Ratio. According to table-4 the result of "Al-Meezan Balance Fund" in this ratio is -0.2881983 and result of "Meezan Balance Fund" in this ratio is -3.6169998.

   Informational / appraisal Ratio. According to table-5 the result of "Al-Meezan Balance Fund" in this ratio is -0.138419 and result of "Meezan Balance Fund" in this ratio is -0.358794. "Asian stock Fund Ltd" is Bench mark to calculate this ratio.

Findings and Conclusion

Major Findings

The results measures provided under different ratio almost similar relation between risk and return except Sortino Ratio, because it dealt only with downside risk. The Ranking differentials through various measures indicate fluctuating environment of Pakistan money markets. However, in the light of varying investment objectives, the results of Funds different, in measures, causing dissimilarities in their ranking. This indicates that close-ended mutual fund industry is not a flourishing stage in Pakistan.

Research Limitations

The Performance period was selected between the year 2001 to year 2008 because many Funds were introduced in this period; hence maximum data was available for these years.

Implications

The results suggest Fund managers to adopt such strategies that could provide maximum benefit to the investors. The study provides analytical comparison between different closed ended Mutual Fund companies providing significant guidance for fund managers as well as the investors.

Conclusion

According to the Sharpe and Treynor measures, the performance of Funds with positive (Sharpe or Treynor) ratios is a preferable performance because the adjusted return against per unit risk is better as compared to the negative ratios. According to Jensen's alpha results, those Funds are better performer in the market who have positive alpha and this is indication of the systematic risk adjustment by premium. Sortino ratio considers only the downside risk adjustment against the investors' benefit. According to the informational ratio, the positive results provide a batter choice of Funds that indicates the good performance with the comparison of the benchmark portfolio. It also provides adjusted excess return against per unit excess risk with respect to the benchmark portfolio.

All the measures explain the relationship between risk & return. The ranking of these ratios, in different categories, indicate the performance of the Funds from investment point of view with the preference of risk. The results also exhibit that in all measures the ranking of Funds changed due to the fluctuating environment of market, which is not suitable for the performance of closed-ended mutual Funds. The negative results of all measures indicated the unsatisfied performance of these Funds which means that the Fund industry is not at a flourishing stage in Pakistan

Table-1: Performance of close-ended mutual funds through Sharpe Ratio

Sharpe Ratio			
Asset Allocation Funds	1	WE Balanced Fund	0.82677788
	2	NAMCO Balanced	-0.1249117
	3	Pakistan Strategic Fund	-0.458911
	4	JS Value Fund	-0.5837577
Capital Protected Funds	1	BMA Principle Guaranteed Fund	-0.267889
Equity Funds	1	Dominion Stock Fund Ltd	0.12579741
	2	Tri-Star Mutual Fund Ltd	0.08535844
	3	Asian Stocks Fund Ltd	0.01191471
	4	Investec Mutual Fund Ltd	-0.1137597
	5	Golden Arrow Selected Stocks Fund Ltd	-0.1279294
	6	Safeway Mutual Fund	-0.1322549
	7	Prudential Stocks Fund Ltd	-0.2633173
	8	UTP-Large Cap. Fund	-0.3162827
	9	Ist Capital Mutual Fund Ltd	-0.3326201
	10	First Dawood Mutual Fund	-0.3478085
	11	Pakistan Premier Fund	-0.3927869
	12	PICIC Investment.Fund	-0.4098475
	13	PICIC Energey Fund	-0.4098964
	14	PICIC Growth Fund	-0.5508444
Fund of Funds	1	Atlas Fund of Funds	-0.4442581
Income	1	Pak Oman Advantage Fund	-0.4901099
Islamic Funds	1	Al-Meezan Mutual Fund	-0.0442219
	2	Meezan Balance Fund	-0.4977711
Market price	1	KSE Index	0.01023015

Table-2: Performance of close-ended mutual funds through Treynor Ratio

Treynor Ratio			
Asset Allocation Funds	1	WE Balanced Fund	0.28086
	2	Pakistan Strategic Fund	0.12902
	3	NAMCO Balanced	0.06991
	4	JS Value Fund	-0.0936
Capital Protected Funds	1	BMA Principle Guaranteed Fund	-0.033
Equity Funds	1	Prudential Stocks Fund Ltd	0.30187
	2	Asian Stocks Fund Ltd	0.07852
	3	Tri-Star Mutual Fund Ltd	0.04765
	4	First Dawood Mutual Fund	-0.0004
	5	Golden Arrow Selected Stocks Fund Ltd	-0.0344
	6	UTP-Large Cap. Fund	-0.0477
	7	PICIC Energey Fund	-0.0631
	8	PICIC Investment.Fund	-0.0749
	9	Investec Mutual Fund Ltd	-0.0871
	10	PICIC Growth Fund	-0.0964
	11	Pakistan Premier Fund	-0.124
	12	Ist Capital Mutual Fund Ltd	-0.2256
	13	Safeway Mutual Fund	-0.2406
	14	Dominion Stock Fund Ltd	-0.3275
Fund of Funds	1	Atlas Fund of Funds	-0.1105
Income	1	Pak Oman Advantage Fund	-0.263
Islamic Funds	1	Al-Meezan Mutual Fund	0.00364
	2	Meezan Balance Fund	-0.0823

Table-3: Performance of close-ended mutual funds through Jensen's Alpha

Jensen Alpha			
Asset Allocation Funds	1	NAMCO Balanced	0.013463
	2	WE Balanced Fund	0.0067422
	3	JS Value Fund	0.000981
	4	Pakistan Strategic Fund	-0.021758
Capital Protected Funds	1	BMA Principle Guaranteed Fund	0.019106
Equity Funds	1	Safeway Mutual Fund	0.5020871
	2	Tri-Star Mutual Fund Ltd	0.2320243
	3	Asian Stocks Fund Ltd	0.0971931
	4	Ist Capital Mutual Fund Ltd	0.02836
	5	Dominion Stock Fund Ltd	0.0215672
	6	Golden Arrow Selected Stocks Fund Ltd	0.0205885
	7	Investec Mutual Fund Ltd	0.0189897
	8	UTP-Large Cap. Fund	-0.00415
	9	First Dawood Mutual Fund	-0.012778
	10	PICIC Energey Fund	-0.018257
	11	Pakistan Premier Fund	-0.022249
	12	PICIC Investment.Fund	-0.026117
	13	PICIC Growth Fund	-0.034114
	14	Prudential Stocks Fund Ltd	-0.046988
Fund of Funds	1	Atlas Fund of Funds	-0.019009
Income	1	Pak Oman Advantage Fund	0.020534
Islamic Funds	1	Al-Meezan Mutual Fund	0.0080113
	2	Meezan Balance Fund	-0.013941

Table-4: Performance of close-ended mutual funds through Sortino Ratio

Sortino Ratio			
Asset Allocation Funds	1	NAMCO Balanced	-2.6729788
	2	JS Value Fund	-2.70356
	3	Pakistan Strategic Fund	-3.366538
	4	WE Balanced Fund	-7.0927726
Capital Protected Funds	1	BMA Principle Guaranteed Fund	-2.8377988
Equity Funds	1	Dominion Stock Fund Ltd	5.327532
	2	Tri-Star Mutual Fund Ltd	0.0700321
	3	Golden Arrow Selected Stocks Fund Ltd	-0.3026368
	4	UTP-Large Cap. Fund	-1.0266114
	5	Investec Mutual Fund Ltd	-1.26743
	6	Asian Stocks Fund Ltd	-1.2995791
	7	Prudential Stocks Fund Ltd	-1.3240774
	8	Pakistan Premier Fund	-1.761532
	9	First Dawood Mutual Fund	-1.7776514
	10	PICIC Investment.Fund	-1.9585897
	11	PICIC Energey Fund	-2.0925823
	12	PICIC Growth Fund	-6.8481975
	13	Ist Capital Mutual Fund Ltd	-8.81112
	14	Safeway Mutual Fund	-10.859428
Fund of Funds	1	Atlas Fund of Funds	-5.9492366
Income	1	Pak Oman Advantage Fund	-13.74528
Islamic Funds	1	Al-Meezan Mutual Fund	-0.2881983
	2	Meezan Balance Fund	-3.6169998
Market price	1	KSE Index	-10.114565

Table-5: Performance of close-ended mutual funds through Informational Ratio

Informational Ratio			
Asset Allocation Funds	1	WE Balanced Fund	-0.101701
	2	NAMCO Balanced	-0.106792
	3	Pakistan Strategic Fund	-0.127451
	4	JS Value Fund	-0.435861
Capital Protected Funds	1	BMA Principle Guaranteed Fund	-0.143969
Equity Funds	1	Asian Stocks Fund Ltd	Bench mark 0.0872749
	2	Tri-Star Mutual Fund Ltd	0.0199958
	3	Prudential Stocks Fund Ltd	-0.009269
	4	Dominion Stock Fund Ltd	-0.083134
	5	Safeway Mutual Fund	-0.101021
	6	Ist Capital Mutual Fund Ltd	-0.10352
	7	Investec Mutual Fund Ltd	-0.14763
	8	PICIC Investment.Fund	-0.148056
	9	Pakistan Premier Fund	-0.156816
	10	First Dawood Mutual Fund	-0.182588
	11	Golden Arrow Selected Stocks Fund Ltd	-0.228727
	12	PICIC Growth Fund	-0.25778
	13	PICIC Energey Fund	-0.327451
	14	UTP-Large Cap. Fund	
Fund of Funds	1	Atlas Fund of Funds	-0.11835
Income	1	Pak Oman Advantage Fund	-0.038668
Islamic Funds	1	Al-Meezan Mutual Fund	-0.138419
	2	Meezan Balance Fund	-0.358794
Market price	1	KSE Index	-0.109305

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