# Comparative Valuation between Islamic and Conventional Mutual Fund

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## Abstract

In this study we have evaluated the performance of conventional and Islamic mutual funds in Pakistan. The evaluation was done on the bases of risk and return, Risk Adjustment Performance, diversification, selectivity and timing of the funds. The data set consisted of 125 funds in which 94 was conventional while 31 were Islamic mutual funds. The results indicated that Islamic mutual fund performed better with Sharpe ratio -3.045 which is better than conventional mutual funds (-3.7152) . Both funds have underperformed from their benchmark, Islamic mutual funds were well diversified ($R^2$=0.99) while conventional mutual fund had low diversification rate ($R^2$=.48). The overall performance of Islamic mutual fund having less risk rate 1.03 percent and giving average return higher than the market average return while the conventional mutual fund risk rate is 4.41 percent but the average rate of return is below the market return.

**Keywords:** Conventional mutual fund; Islamic mutual fund; Risk Adjustment Performance; diversification; selectivity and timing.

## Introduction

Muslim represents 22.43% of the world population, since the last five decade Muslims have increased by over 235 percent; by comparison with other religious Islam is the second largest religious in the world while the first is Christians (CIA world's fact book 2009). Hassan (2001) estimated that the investment rate of Muslim is growing 15% annually in a market which is not yet fully exploited.

Globally there are two financial systems operating at a same time, the Islamic finance system and conventional finance system. The Islamic finance system offers financial products, which act in accordance with Islamic Law (Shariah), while conventional finance system operates it function on

interest base. Islamic finance had a tremendous growth in the last decade with a growth rate of 15% in the mid-1900(Hamid and Azmin, 2001; Aggarwal and Yousef, 2000). There have been various debates on both of the financial systems in which most of the research have found that the Islamic finance system has perform better than the conventional in the bearish financial crisis period (Abdullah, et al. 2007, Kräussl & Hayat, 2008, Mansor & Bhatti, 2009). In Recently times the Vatican considered Islamic Finance principles to western bank as a set for worldwide financial crisis. According to 'L'Osservatore Romano, the Islamic banking scheme may assist to overcome world financial crisis. The Vatican argued that the banks should look at the moral rules of Islamic management to refund confidence amongst their clients at a minute of global system crisis.

The literature is full of studies which have been done to find out which financial system has performed better that is Islamic financial system or conventional financial system. For comparing these financial system their major focus are on banking sector but you will find very few researches that have comprised evaluation of Islamic and conventional mutual funds. So our study is focusing on the Islamic and conventional mutual funds of Pakistan. Pakistan mutual fund industry has been increasing rapidly with a growth rate of 23.95 percent in the end of fiscal year 2010-11, while a 7.87 percent in the last quarter. Conventional open end funds net assets grew by 8.94 percent to Rs 187.225 billion in 4Q-FY10-11 and Islamic open end funds raised by 14.52 percent to Rs 35.313 billion during the quarter (MUFAP annual report 2010-11). In this research we will evaluate the mutual fund industry and to check whether the performance of Islamic mutual fund is better than the conventional mutual fund, or vice versa. We expect that the Islamic Mutual Fund may possibly perform better than the Conventional counterpart due to the fund has shown it's massively growth in the recent past.

As a result, this study is important because it will provide investors and regulators an overviews and insights on the performance of the Islamic mutual Fund concurrently with the Conventional mutual fund, and the industry in particular. The findings shall benefit them especially if they plan to invest or participate in the mutual funds industry, in an emerging market like Pakistan.

## Literature Review
A large amount of research has been done on the performance of mutual fund. Different researchers have used different model to evaluate performance of mutual funds. The literature is full of evaluating either one of the mutual fund but very few studies will be found on the comparison of the two mutual funds. Our studies will compare the two mutual fund system through different evaluating model.

One of the initial studies to evaluate the performance of mutual fund was done by Friend et al. (1962). In their study they verify whether the mutual fund outperform the market. Annual data from 1953 to 1958 of 152 mutual funds was analyzed. In 1965, Friend et al. study consisted of the randomly constructed portfolios of mutual fund, they concluded that mutual fund have not performed superior to random constructed portfolio. Later on kalman and jerry (1968) commented on the study done by them and friend and Vickers are largely irrelevant to the empirical issue of the quality and value of mutual fund management.

Jack L.Treynor (1965) suggested a new measure for the performance of portfolio by incorporating the fund's return volatility, which is the average excess return on the portfolio. It was simple yet meaningful manner volatility. This was followed by Shape's (1966) reward to variability measure that is average excess return on the portfolio divided by the standard deviation of the portfolio. Treynor & Mazuy (1966) developed a methodology for testing mutual funds' historical success in anticipating major turns in the stock market and found no evidence that the funds had successfully outguessed the market. Jensen's (1968) classic study developed an absolute measure of performance based upon the Capital Asset Pricing Model and reported that mutual funds did not appear to achieve abnormal performance when transaction costs were taken into account.

Mostly all the researches consist of these primarily three models to measure the performance of portfolio just like McDonald (1974) used sharpe ratio, Treynor ratio and Jensen's alpha to measure the

performance of 123 mutual funds using monthly data from 1960 to 1969. He indicated that majority of the mutual fund didn't not outperform the New York stock exchange (NYSE) index.

Mallin etal. (1995) and M'Zali and Turcotte (1998) both used Sharpe and Treynor ratio to measured the performance of ethical funds and non-ethical. They concluded that ethical funds outperform the market index. Majority of funds for both group underperform the market index

In the 1990s the concept of Islamic mutual funds was initiated and the initial studies on Islamic mutual funds was conducted by Annuar et al. (1997), he evaluated 31 Malaysian mutual funds by using Treynor and Mazuy model (1966) for the period 1990-1995. It was concluded that Malaysian mutual fund outperforms their benchmark but the market timing was poor.

Elfakhani et al. (2005) checked the performance of Islamic mutual fund for the period 1997 to 2002. They concluded that there was no statistical difference in the performance of the mutual funds compared to their respective indices. They concluded that the performance of Islamic mutual funds was improving with time, as the fund managers were gaining more experience and sense of the market. However, the possibility exists that the result could be biased due to the short time frame in which the study was conducted. Throughout the duration of the study, the industry was still in its early stage of the development, indicated by poor transparency, insufficient experience of fund managers in fund management, and a rather limited diversification in portfolio funds.

In the study of Hoepner et al. (2009) they used a unique dataset of 262 Islamic equity funds from 20 countries and 4 regions from September1990 to April 2009. They used One factor model and 3 factor model of Fama and French (1993) and Carhart (1997) 3 level Carhart model, and conditional 3 level Carhart model. They concluded that Islamic funds from eight nations (mostly from the western regions) significantly underperform their international equity market benchmarks, and funds from only three nations over perform their respective market benchmarks. Second, only small stocks have an effect on Islamic funds. Third, Islamic funds from the Gulf Cooperation Council (GCC) or Malaysia did not significantly underperform their respective benchmarks or were affected by small stocks. Finally, they asserted that Islamic equity funds "exhibit a hedging function, as their investment universe is limited to low debt/equity ratio stocks."

Shamsher et al. (2000) used Sharpe, Treynor Ratios and Jensen's alpha on 41 actively- and passively-managed mutual funds in Malaysia 1995 - 1999. It was found that there was No significant difference in performance between actively- and passively-managed funds and both underperform the market portfolio and have diversification levels less than 50 percent the diversification level of the market index (Kuala Lumpur composite Index - KLCI). Selection skills of active fund managers are not better than those of the passive fund managers and both do not outperform the market in terms of selection.

Chenet at al. (1992) valuated 93 mutual funds for the period of 1977 to 1984, using Quadratic market model in conjunction with a systematically varying parameter regression method. They recommended that there is Trade-off between market timing and security selection skills and Fund managers do not possess the market timing skills.

Abderrezak (2008) found that Islamic funds performed poorly against their respective indices. The co movement of IEFs returns with the market, measured by the betas, is low. Further, he found poor evidence for selectivity. IEFs are significantly affected by small cap firms and growth preference stocks. However, he did not find any significant performance differences between Islamic and ethical funds using Fama's performance measures. Finally, he found that IEFs do suffer from lower diversification.

## Data and Measures
The data consist of all the mutual funds listed with the Mutual Funds Association of Pakistan. There are 119 open-end funds and close-end fund are 15 in number. In open-end funds 94 are conventional while remaining 31 are Islamic open-end funds. As far as 15 close-end funds are concerned 13 are conventional and the rest two are Islamic close-end fund.

In the study we have used daily net asset values (NAVs) of the open-end funds from the time of their incentive to November 2011. The information was obtained from the official site of mutual fund association of Pakistan.

The following measures were used to evaluate the Islamic and conventional mutual fund.

### i. Sharpe Ratio

The Sharpe ratio was used to determine reward per unit of risk, it is also known as reward to volatility ratio. It is calculated using the following model

$$SR = \frac{R_p - Rf}{\sigma_p} \tag{1}$$

In this equation "SR" is the Sharpe ratio, $R_p$ is the Portfolio return, $Rf$ is Risk free rate and $\sigma_p$ is the standard deviation of the Portfolio. The higher the Sharpe Ratio, the better the performance.

### ii. Treynor Ratio

The Treynor ratio is also a measure of reward to volatility, but it has uses β (beta) instead of standard deviation. It is also called the risk-adjusted measure of return based on systematic risk.

$$TR = \frac{R_p - Rf}{\beta_p} \tag{2}$$

Where "TR" is Treynor ratio and $\beta_p$ is the beta of portfolio.

### iii. Jenson Alpha

Jenson's Alpha is the average returns on the portfolio over and above the expected return that predicted by the capital asset pricing model (CAPM)

Jenson alpha is calculated as:

$$\alpha_p = R_p - Rf + \beta_p(Rm - Rf) \tag{3}$$

Where $\alpha_p$ is the Jenson alpha, $R_p$ is the return of portfolio, $Rf$ is the risk free rate, $\beta_p$ is the beta of portfolio and $Rm$ is the return of the market.

### iv. Modigliani & Modigliani

Modigliani & Modigliani (M2) is a new technique (Fall 1997) that is closely related to the Sharpe Ratio. The idea is to lever or de-lever a portfolio (i.e., shift it up or down the capital market line) so that its standard deviation is identical to that of the market portfolio.

$$M^2 = \left(\sigma_M \middle/ \sigma_i\right)\left(R_i - R_f\right) + R_f \tag{4}$$

The M$^2$ of a portfolio is the return that this adjusted portfolio earned. This return can then be compared directly to the market return for the period.

### v. Treynor-Mazuy Timing Model

The Treynor-Mazuy model (1966) was used to measure the manager's timing ability of shifting a fund's beta up during a market rise and lowering it during overall stock market decline. It is defined by including the squared market risk premium in the CAPM model. If the value of $\beta_t$ is positive, then this indicated that the market timing ability was successful

$$R_p = Rf + \alpha + \beta(R_m - Rf) + \beta_t(R_m - Rf)^2 + \varepsilon \tag{5}$$

### vi. Fama's Decomposition Measures

With the help of Fama's decomposition we can be able to measure the ability of fund manager to select undervalued securities (priced lower than their true value at a point of time) in order to earn higher returns.

$$\text{Fama Decomposition} = (R_p - Rf) - \frac{\sigma_p}{\sigma_m}(R_m - Rf) \tag{6}$$

A positive high value indicates that the fund has achieved superior returns and investor's are benefited out of the selectivity exercised by the Fund Manager.

## Results

Table 1 show the return and risk relation of both conventional and Islamic mutual fund, which indicates that the conventional mutual fund ($\sigma p$=4.4%) are high risky then Islamic mutual fund(1.03 %) and the conventional mutual fund is more riskier then the market (1.27 %) , While Islamic mutual fund is less riskier as compare to the market(1.31%). The volatility rate of conventional mutual fund is .2362 which is higher than the Islamic mutual fund that is .1619, due to high risk and volatility the conventional mutual fund offer a higher average Return (0.12 %) which is comparatively high then the Islamic mutual fund (0.02 %), but average returns of both the Mutual funds system is offering below the risk free rate that is 1.13 percent.

**Table 1:** Return and risk

|  | Conventional mutual fund | Islamic mutual fund |
|---|---|---|
| Average Return (AR$_p$) | 0.0012 | 0.000162 |
| Average Risk Free rate (AR$_f$) | 0.0113 | 0.0113 |
| Average Return of Market(AR$_m$) | 0.0003 | 0.00029 |
| Risk ($\sigma_p$) | 4.41 % | 1.03 % |
| Risk of Market ($\sigma_m$) | 1.27 % | 1.31 % |
| Volatility($\beta_p$) | .2362 | .1619 |

The risk adjusted performance measure are shown in table 2.the conventional mutual fund Sharpe ratio is -3.7152 as compared to -3.045 for the Islamic mutual fund which shows that the Islamic mutual fund have punished the investor less than the conventional mutual fund. The Treynor ratio is also in favor of the Islamic mutual fund. The Jenson Alpha for both the mutual funds is negative which show poor selection ability for both mutual funds. The Modigliani and Modigliani (M2) is an extension of Sharpe ratio, its show that if standard deviation is kept constant for both the fund then the Islamic mutual fund will underperform the benchmark by 2.39 percent less than the conventional Mutual fund would underperform the benchmark (3.36 percent) during the overall period.

**Table 2:** Risk Adjustment Performance measure

|  | Conventional mutual fund | Islamic mutual fund |
|---|---|---|
| Sharpe ratio | -3.7152 | -3.044388513 |
| Treynor Ratio | 0.0032 | 0.191961051 |
| Jenson Alpha | -0.0127 | -0.012948571 |
| Modigliani & Modigliani | -0.0336 | -0.023917277 |

The diversification of Islamic mutual fund (R2=0.99) is much better than the conventional mutual fund (R2=0.48) as shown in table 3. Due to this lower diversification the conventional mutual fund ($\sigma p$ =4.41 percent) has high risk then the Islamic mutual funds (p=1.03 percent). The value of is positive in both cases which indicates that the market timing of fund manager was successful. The

table 3 shows that conventional mutual fund have earned superior return due to selectivity while Islamic mutual fund have not earned any superior returns because of the lack of selectivity on the part of the Fund Manager.

**Table 3:** Diversification, selectivity and timing

|  | **Conventional mutual fund** | **Islamic mutual fund** |
|---|---|---|
| $\beta_t$ | 43.3618 | 29.59423651 |
| Fama decomposition | 0.0241 | -0.002574337 |
| $R^2$ | 0.486057074 | 0.99739768 |

## Conclusions

In this study we have studied the performance of "35" Islamic and "94" conventional mutual fund from three main prospective; return and risk, risk adjusted performance and diversification, selectivity and timing of fund managers.

The results indicate that the Islamic mutual fund is low risky than the conventional mutual fund. Its average return is higher than the market average return while the conventional mutual funds entertain less average return as compared to the market average return. Hence the volatility of conventional mutual fund is higher but both of the funds provide average return less than risk free rate. According to the Modigliani and Modigliani results it is observed that both the fund have underperformed their benchmark in overall period. Due to the high volatility the conventional mutual fund is less diversified in opposition to Islamic mutual funds.

It is recommended that Islamic mutual fund should be given focus and more portfolio of less risky should be introduce because a large portion of the population is not investing in the conventional mutual fund due to contradiction with the religion belief.

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