Islamic Mutual Funds' Financial Performance in Adverse Economic Conditions: A Case of Pakistan

*Nadia Iftikhar
** Iftikhar ul Amin

Abstract

The theme of the study was to check the widely debated phenomenon of the performance of Islamic mutual funds in terms of risk and return in adverse economic situations as compared to conventional funds in the Pakistani context. The traditional risk adjusted return performance measures of Sharpe ratio, Treynor ratio, Jensen alpha were used. It was observed that the unique feature of Islamic funds performing better than conventional funds in economic downturn conditions also holds in Pakistan's economy by looking at the impact of the global financial crisis (2008-09) on the comparative performance of conventional and Islamic mutual funds.

Keywords: Mutual Funds, Islamic Fund Performance, Pakistan, JEL Classification: G23, G11.

1) Introduction

The seminal studies of Sharpe (1964) and Jensen (1968) put forth the argument regarding the relevance of mutual fund performance and the efficient market hypothesis. The research that followed contradicted the conclusions of these two studies and hence started the long standing debate that still continues[1]. The debate is further aggravated by the fact that mutual funds as an industry has witnessed remarkable growth in recent years with the international mutual funds' assets amounting to 23.13trillion dollars at the end of 2011[2]. A similar trend has been seen in Pakistan where the industry has been showing tremendous growth
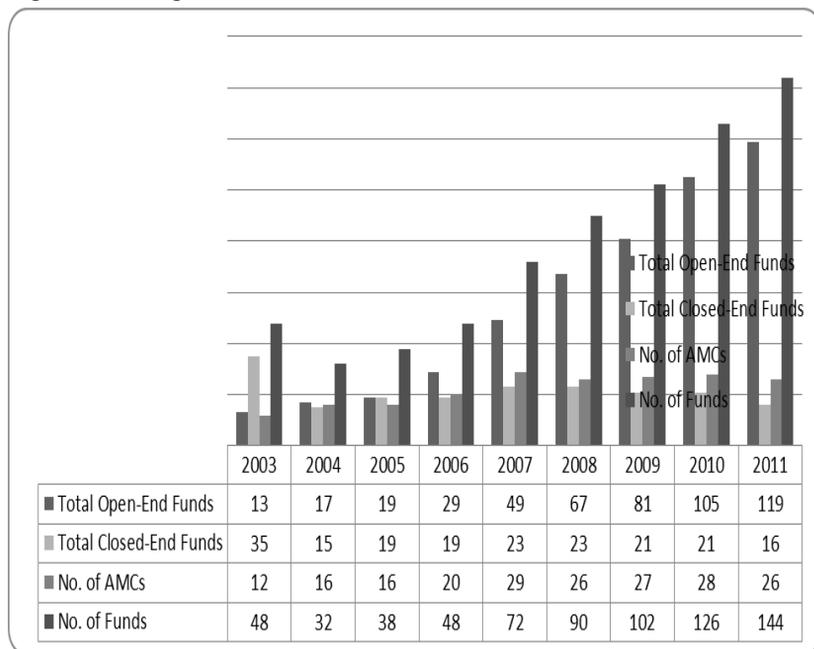
* **Nadia Iftikhar** (corresponding author), Assistant Professor, Institute of Management Sciences, Peshawar, Pakistan

Iftikhar ul Amin, Assistant Professor, Institute of Management Sciences, Peshawar, Pakistan

specifically in the last half of the previous decade. This growth could be attributed largely to the capital market reforms and liberalized terms of investment that were introduced in the 1990s and 2000s (Fig. 1).

However, this particular period (2006 onwards) is of special interest due to both the growth in mutual fund industry and the financial crises that hit the financial markets world over. This period also saw the introduction of a variety of mutual funds based on investment styles and objectives in the market. Islamic mutual funds are one such category that has been growing at an average of 64 percent over a five year period, 2006-2010 (Mahmud & Mirza, 2011). Islamic mutual funds were launched in the early 1990s after the approval of equity investments by sharia scholars around the world, but it was not until the last half of 2000s that they were introduced in the Pakistan's mutual fund industry. The introduction of equity indices like FTSE global Islamic index series, Dow Jones Islamic Market Index (DJIMI), the Malaysian Islamic index and the Karachi Meezan Islamic index, KMI30 has been another milestone, wherein the investors have credible benchmarks for comparisons.

Figure 1. The growth of mutual funds in Pakistan (2003-2011)

	2003	2004	2005	2006	2007	2008	2009	2010	2011
■ Total Open-End Funds	13	17	19	29	49	67	81	105	119
▪ Total Closed-End Funds	35	15	19	19	23	23	21	21	16
■ No. of AMCs	12	16	16	20	29	26	27	28	26
■ No. of Funds	48	32	38	48	72	90	102	126	144

Source: www.mufap.org

This study is aimed at assessing the comparative performance of the Islamic mutual funds with conventional mutual funds, particularly in the economic downturn period thereby also examining the unique feature of Islamic funds performing better than conventional funds in adverse economic conditions (Said et. al, 2005; Fikriyah et. al, 2007; Merdad et. al, 2010). This feature of Islamic funds still remains unexplored in Pakistan.

The rest of the paper is organized as follows; section 2 talks about the existing literature on the said subject, section 3 introduces the dataset for the study, section 4 discusses the methodology, section 4 presents the findings and section 5 concludes the research.

2) Literature Review

The literature regarding mutual funds could be broadly categorized into performance evaluation and the determinants of performance of mutual funds. This study deals with performance evaluation and hence the focus remains on studies in the former category. Numerous research studies have been carried out worldwide to assess the performance of mutual funds. For example, Cumby and Glen (1990) analyzed fifteen mutual funds based in US which were diversified internationally between 1982 and 1988. They used the Jensen measure and a method known as the positive-period-weighting measure. The findings confirmed that mutual funds were unable to beat the market. Cai, Chen & Yamada (1997) revealed that Japanese funds were underperforming as compared to the benchmarks. A possible reason was the dilution effect caused by inflows of funds. Dahlquist, Engstrom & Soderlind (2000) tested the attributes of Swedish mutual funds and confirmed that small equity funds showed good performance. Moreover, funds with low fees were also amongst them along with those having high trading activity and good past performance. The Indian mutual funds market was analyzed by Rao (2003) in a bearish market period (1998-2001) using the risk adjusted return measures of Sharpe, Treynor, Jensen and Fama measures. These measures demonstrated that most of the sampled funds met the expectations of the investors and gave excess returns whereas their premium compensated for the total risk. Eling & Faust (2010) termed Swiss funds as unable to completely outperform the traditional benchmarks.

Performance evaluation has been the subject of many studies in Pakistan too. See for example Shah & Hijazi (2005); Sipra (2006); Afza &Rauf (2009); Khalid, Abbas & Shah (2010); Nafees, Shah &Khan (2011); Gohar, Ahmed &Niazi (2011); Zaheer, Mir & Saeed, (2011);

Mahmud & Mirza (2011); Rasheed & Qadeer (2012); Shah, Iqbal & Malik (2012). However, the performance of Islamic mutual funds in comparison with conventional funds has still remained unexplored. Specifically the comparative performance in the context of economic downturn periods has not been examined yet. Nevertheless, certain international studies have focused on the role of ethical funds or socially responsible funds since they are considered to be in principle closer to the ideology behind the Islamic funds.

Statman (2000) inspected the socially responsible mutual funds and assessed their performance against the two benchmarks i.e. Domini social index (DSI) and S&P 500 Index for the period of 1990-98. He used Jensen alpha and *eSDAR* (excess standard deviation adjusted returns) measures to assess performance. Socially responsible funds did not outperform both the DSI and S&P 500 indices but they did outperform the conventional mutual funds. Similarly, Hakim and Rashidian (2004) studied the performances of Shariah compliant index DJIM, DJW index and DJS index through capital asset pricing model. The results of the study disclosed that DJIM did well in comparison with Dow Jones world index (DJW) but could not keep up in comparison with the Dow Jones Sustainability index (DJS).

Market conditions also impact the comparative performance of Islamic funds versus other types of funds. Islamic funds have been found to perform better in bearish conditions while conventional funds gave better returns in bullish situations as compared to Islamic funds, therefore, Islamic funds could be used in portfolios as hedging tools (Fikriyah, Taufiq & Shamsher, 2007). There was no statistical proof to suggest any above-average returns or associated with investing in Shariah compliant mutual funds and sharia screening did not have any adverse impact on returns (Elfakhani, Hassan & Sidani, 2005).

Shariah/ethical screening, according to some scholars, could lead to loss in returns. However, Hassan, Antoniou & Paudyal (2005) assessed the impact of ethical restrictions and screening on performance of investments. They compared the Dow Jones Islamic Index DJMI with Dow Jones Index-Americas for the period 1996 to 2003. They analyzed performance of both indices through traditional risk adjusted indices and single factor, Fama French 3 factor and Carhart four factor models. Their results illustrated that there was no significant adverse impacts on Islamic investments by imposing ethical screenings on them. A similar study in Spain by Izquierdo & Matallin-Saez (2008) used the multifactor regression model containing certain benchmarks related to investment style and the bootstrap method for ethical funds. It was

found that the financial performance of ethical funds was either superior or same as the rest of the funds.

Merdad, Hassan & Alhenawi (2010) investigated the comparative performance of 28 islamic and conventional mutual funds through Sharpe, Treynor, Jensen and some risk variant measures. The findings confirmed the results of the previous studies that Islamic funds were unable to beat conventional funds in full and bullish periods but these Islamic funds outperformed those conventional mutual funds in bearish and financial crises period.

The trend of Islamic funds showing better performance than their conventional counterparts was also tested for Malaysia. Sharpe, Treynor and Jensen ratios were used to evaluate performances of 128 Islamic mutual funds on monthly basis for the period of January 1990 to April 2009. The results indicated that on average these funds outperformed the Conventional funds as well as the proxy for market portfolio (Mansor & Bhatti, 2011). Similarly, Hoepner, Rammal & Rezec (2011) found Islamic funds to show better performance in the more developed Islamic financial markets. While these funds were competitive with international equity benchmarks, funds from Western countries with less Islamic assets tend to show significantly inferior performance. The Islamic funds were inclined towards growth oriented stocks with respect to investment style. Funds originating from Muslim economies also exhibited a preference for small capitalization stocks.

Gallais-Hommono (2012) while comparing shariah compliant versus conventional funds using Sharpe, Sortino and Information ratio stated that only 25% of measured ratios show an over-performance of the SC-funds. The SC-funds have had, over the two economic downturn periods studied, similar performances as their conventional counterparts.

3) Data

The data was collected from various sources. Net Asset values (NAVs) of the open-end mutual fund were extracted from the corresponding asset management company's website. Annual T-Bill rates (risk free rate) were obtained from the State Bank of Pakistan (SBP) website which was further divided by 12 to figure out monthly risk free rate since monthly returns were used in the study. For finding yearly results average monthly returns were used to calculate Sharpe, Treynor and Jensen Alpha measures. Historical Benchmark proxy data of KSE 100 Index was collected from the website www.marketwatch.com. Funds'

standard deviations and betas were calculated from their risk adjusted monthly returns.

An initial sample of 71 open ended funds was selected on the basis of the availability of data. Funds having age of 1 year or less than 1 year were excluded from the study. The reason for their exclusion was that funds having age of 1 year or less than 1 year could not show relatively reasonable performance. Once the screening was done, 60 funds were left. 43 funds, which made up for seventy percent (70%) of the population, were selected from Islamic and Conventional open end mutual funds groups. So at the end 14 Islamic funds and 29 Conventional funds were selected for the purpose of this study.

For measuring the mutual fund performance through a relative sensitivity measure beta, there was a need for a benchmark (market). Through a benchmark, the fund manager could judge the mutual fund's performance whether it is underperforming or outperforming it. Based on the previous studies KSE 100 Index was considered a reasonable benchmark for this study. KMI 30 Index could also be used for Islamic funds performance evaluation but KMI 30 Index was a relatively new index introduced in September, 2008. Therefore, KSE 100 Index was the best available choice of benchmark for assessing both conventional and Islamic funds performance.

4) Methodology

The objective of this study pertained to the phenomenon observed about Islamic mutual funds that they perform better in adverse economic situations as compared to conventional funds. The research attempted to find out whether this feature holds in Pakistan's economy or not? For checking this unique feature, an analysis of the performance of mutual funds was done for the economic downturn period of 2008-09. For this purpose, the traditional risk adjusted return measures of (1) Sharpe ratio (2) Treynor ratio and (3) Jensen alpha were used.

a) **Sharpe Ratio: D**eveloped by William F. Sharpe (1960), this ratio measures the risk adjusted return performance. It is calculated by subtracting the risk free return from portfolio or fund's return and the result divided by the standard deviation of the portfolio or fund's return. This ratio is also known as **reward-to-variability ratio, thereby** helping us to determine how much an investor is earning excess return (risk premium) on per unit of total risk. Therefore a higher sharpe ratio is preferred.

b) **Treynor Ratio: Also known as the reward-to-volatility ratio**, it was developed by Jack Treynor. This ratio is similar to Sharpe ratio but instead of standard deviation, the

systematic risk is considered for measuring portfolio's risk premium. So Treynor ratio helps to show the excess earnings of a portfolio at per unit of systematic risk. A portfolio scoring higher than another on Treynor ratio will be the better portfolio.

c) **Jensen Alpha Measure:** Jensen alpha was used to determine the abnormal return of a portfolio which the portfolio actually earned over and above the theoretical expected return. The theoretical return is that return which it should have to earn in a given market conditions and the risk of the portfolio.

$$\alpha_p = R_p - \left(R_f + \beta_p\left(R_m - R_f\right)\right)$$

5) Findings and analysis:

In this section, the results of 43 open end-mutual funds' analysis are discussed based on the methodology adopted for this study. This section is further divided into three sections based on each performance measures results i.e. (1) Sharpe Ratio (2) Treynor Ratio (3) Jensen Alpha. Every fund was analyzed separately by each performance measure. Each ratio was calculated for each fund by using its average monthly returns.

5.1 Sharpe Ratio Results

The results of the Sharpe ratio of each category of mutual funds i.e. Income funds, Asset allocation funds, balanced funds and Equity funds are given in Table 2. A fund's performance was considered to be better if its value according to Sharpe ratio was higher than other funds.

After analyzing the results in Table 2 of income funds, the Islamic funds showed reasonably good performance than Conventional funds. In comparison to market Sharpe ratio, in adverse conditions years, there was just one fund from each comparative group of Islamic and Conventional funds which outperformed the market. But Islamic fund's (Pak Oman Advantage Islamic Income fund) outperforming ability in that very period was quite better than Conventional fund (Nafa Income Fund).

The results of the Asset Allocation funds (Table 2) revealed that the performance of Islamic funds was slightly better than conventional funds. While in market comparison, two funds from each group outperformed the market in adverse period but Islamic funds did well from conventional funds.

In analyzing balanced funds of both industries, the results showed that Islamic balanced fund performance was poor than conventional

balanced funds and especially in the adverse period. No fund from both industries could beat the market in that period.

Islamic equity funds performed poor than conventional funds with two out of three Islamic funds demonstrated a good performance than conventional funds and especially the performance of Atlas Islamic stock fund was very extraordinary in adverse period. It also outperformed the market. 2 out of 3 Islamic funds and 5 out of 10 equity funds outperformed the market.

5.2 Treynor Ratio Results

The Treynor ratio results of each category of mutual funds i.e. Income funds, Asset allocation funds, balanced funds and Equity funds are given in Table 3. A fund's performance was considered to be better if its value according to Treynor ratio was higher than other funds.

The results of Table 3 illustrated that income funds from both categories did not show good performance similar to the results of Asset Allocation funds where the performance of both groups was not significantly different. Two funds from each group beat the market in this period. The results of Treynor ratios of balanced funds showed that Islamic funds did a good job in worse period relative to conventional funds. Moreover, not a single fund from both the groups was able to outperform the market in the worse economic period. Equity fund results demonstrated that Islamic mutual funds did fairly good in worse economic period relative to conventional mutual funds and almost all the Islamic equity funds outperformed the market in that worse period.

5.3 Jensen Alpha Results

The Jensen Alpha measurement results of each category of mutual funds i.e. Income funds, Asset allocation funds, balanced funds and Equity funds are given in Table 4.

According to Jensen alpha measure the Islamic income funds' performance in the whole period was better than the conventional funds whereas in Asset Allocation funds' analysis, the performance of Islamic and conventional funds was not significantly different in this case. In the balanced funds category, similar to Treynor ratio, the Islamic funds performed better in bad economic period (2008-09) relative to conventional funds. Contrary to this, Jensen alpha measure results of equity funds demonstrated that Islamic funds relatively underperformed as compared to conventional funds.

After analysis of all four open ended mutual fund categories through risk adjusted returns measures of Sharpe, Treynor and Jensen alpha it was evident that Islamic funds performed better than conventional

funds in the worse economic period. Although some Islamic funds like balanced funds and equity funds did not outperform the conventional funds at Sharpe and Jensen ratio respectively. On the basis of return analysis, Islamic funds showed 46% losses while conventional funds showed 64% losses in the worse economic period of 2008-09 collectively.

6. Conclusion

The purpose of this study was to find whether the condition that Islamic funds perform better than conventional funds in worse economic conditions, holds or not in Pakistani economy. So it was proved through the results like previous studies of (Said et. al, 2005; Fikriyah et. al, 2007; Merdad et. al, 2010) that this special feature also exists in Pakistan's economy. This result might be quite useful for the investors and fund managers since they can use the Islamic funds as a hedging tool in their portfolios to avoid risk in worse economic situations. Islamic funds are governed by specific screening and investing restrictions and can only invest in the bonds and stocks of Shariah Compliant companies. These funds were found to withstand the recessionary pressures better than conventional stock funds. Thus the upscale growth of Islamic funds that continued even after the recession of 2008-09 is an evidence of the growing interest of investors in this specific category.

References

Afza, T. & Rauf, A. (2009). Performance Evaluation Of Pakistani Mutual Funds. *Pakistan Economic and Social Review*, 47(2), 199-214.

Cai, J., Chan, K. C., & Yamada, T. (1997). The performance of Japanese mutual funds. *Review of Financial Studies*, *10*(2), 237-274.

Cumby, R.E & Glen, J.D. (1990). Evaluating the Performance of International Mutual Funds. *The Journal of Finance*, 45(2), 497-521.

Dahlquist, M., Engström, S. & Söderlind, P. (2000). Performance and Characteristics of Swedish Mutual Funds. *Journal of Financial and Quantitative Analysis*, 35 (03), 409-423.

Eling, M., & Faust, R. (2010). The performance of hedge funds and mutual funds in emerging markets. *Journal of Banking & Finance*, *34*(8), 1993-2009.

Elfakhani, S., Hassan, M. K., & Sidani, Y. (2005, December). Comparative performance of Islamic versus secular mutual funds. In *12th Economic Research Forum Conference in Cairo, Egypt* (19-21).

Abdullah, F., Hassan, T., & Mohamad, S. (2007). Investigation of performance of Malaysian Islamic unit trust funds: comparison with conventional unit trust funds. *Managerial Finance*, *33*(2), 142-153.

Gallais-Hamonno, G. (2012). Comparative Performances of Sharia-Compliant versus Conventional Funds. In *29th International Conference of the French Finance Association (AFFI)*.

Gohar, R., Ahmed, S., & Niazi, U. (2011). Performance comparison of mutual funds in Pakistan. *African Journal of Business Management*, *5*(14), 5583-5593.

Hakim, S., & Rashidian, M. (2004, December). How Costly is Investors' Compliance with Sharia. Economic Research Forum.

Hassan, A., Antoniou, A., & Paudyal, D. K. (2005). Impact of Ethical Screening on Investment Performance: The Case of the Dow Jones Islamic Index. *Islamic Economic Studies*, *12*(2), 67-97.

Hoepner, A. G., Rammal, H. G., & Rezec, M. (2011). Islamic mutual funds' financial performance and international investment style: Evidence from 20 countries. *The European Journal of Finance*, *17*(9-10), 829-850.

Izquierdo, A. F. & Matallin-Saez, J. C. (2008) Performance of Ethical Mutual Funds in Spain: Sacrifice or Premium? *Journal of Business Ethics* , 81(2), 247-260

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

Khalid, S. I., Abbas, M. Z., & Shah, D. S. (2010). Performance Evaluation of Close-ended Mutual Funds by Investment Objectives in Pakistan's Economy. *Interdisciplinary J. Contemp. Res. Bus*, 193-213.

Lee, C. & Rahman, S. (1990). Market Timing, Selectivity and Mutual funds Performance: An Empirical In-vestigation. *Journal of Business*, 63, 261 – 278.

Mahmud, M.& Mirza, N. (2011). An Evaluation of Mutual Fund Performance in an Emerging Economy: The Case of Pakistan. *The Lahore Journal of Economics* , 16(SE), 301-316.

Mallin, C., Saadouni, B., & Briston, R. (1995). The Financial Performance of Ethical Investment Funds. *Journal of Business Finance & Accoun , 22* (4), 483-496.

Mansor, **F.**, & **Bhatti**, **I.M.** (2011). Risk and Return Analysis on Performance of the Islamic Mutual Funds: Evidence from Malaysia. *Global Economy and Finance Journal*, 4(1), 19-31.

McDonald, J. G. (1974). Objectives and Performance of Mutual Funds, 1960-1969. *The Journal of Financial and Quantitative Analysis , 9(* 3), 311-333.

Merdad, **H.**, **Hassan**, **M.K.**, & **Al-Henawi**, **Y.** (2010). Analysis of Islamic versus Conventional Mutual Funds in Saudi Arabia. *Islamic Economics*, 23(2), 161-198.

Nafees, B., Shah, M.A. & Khan, S. (2011). Performance evaluation of open end and close end mutual funds in Pakistan. *African Journal of Business Management*, 5 (28), 11425-11434

Rao, N. S & Ravindran, M. (2003), Performance Evaluation of Indian Mutual Funds, [Online] available at http://ssrn.com/abstract=433100

Rasheed, H., & Qadeer, A. (2012). Performance Evaluation of Survivorship-Biased Open-Ended Mutual Funds in Pakistan. *International Research Journal of Finance and Economics*, (82), 6-14.

Shah, A. & Hijazi, T. (2005). Performance Evaluation of Mutual Funds in Pakistan. *The Pakistan Development Review*. 44 (4), 863–876.

Shah, I. U., Iqbal, J., & Malik, M. F. (2012). Comparative valuation between Islamic and conventional mutual fund. *International Research Journal of Finance and Economics*, (96), 28-34.

Sipra, N. (2006). Mutual fund performance in Pakistan. *Centre for Management and Economic Research (CMER) Working Paper*, Lahore University of Management Sciences, Lahore, Pakistan.

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

Statman, M. (2000). Socially Responsible Mutual Funds. *Financial Analysts Journal , 56(*3), 30-39.

Veit, E. T., & Cheney, J. M. (1982). Are mutual funds market timers?. *Journal of Portfolio Management*, *8*(2), 35-42.

Zaheer, Z., Mir, A. S., & Saeed, A. (2011). Performance Persitence of Mutual Funds in Pakistan. *International Journal of Academic Research*,*3*(5), 109-116.

APPENDIX

Table 1. Year-wise average returns of Islamic and conventional mutual funds

Average monthly returns (%)	2007	2008	2009	2010
KSE100 Index	3	-0.6	-3	3
Islamic Mutual Funds				
Islamic equity funds	0.3	-0.56667	-0.4	1.266667
Asset Allocation funds	4	-0.025	0.1	0.32
Income funds	0.7	0.4	0.2	0.06
Balanced funds		-0.4	-0.5	1.5
Conventional mutual funds				
Income funds	0.542857	0.31	-0.39	0.26
Equity funds	3.628571	-1.1	-2.68	1.42
Asset Allocation funds	-1.1	-1.12	-1.36667	0.233333
Balanced funds	2.1	-0.5	-1.4	1.266667

Source: Author's calculations

Table 2: Results for Sharpe ratio

	2007	2008	2009	2010	2008–2009 (Average)	2007–2010 (Average)
Islamic Mutual Funds						
Equity Funds	-0.43333	-0.28667	-0.22333	-0.09333	-0.255	-0.25917
Balanced Funds		-0.47	-0.16	0.12	-0.315	-0.17

	2007	2008	2009	2010	2008-2009 (Average)	2007-2010(Average)
Asset Allocation Funds	0.485	-0.26	0.092	-0.192	0.054	-0.01267
Income Funds	-0.65	-0.39667	-0.26	-0.53	-0.273	-0.406
Conventional Mutual Funds						
Equity Funds	0.554286	-0.25875	-0.2	0.078	-0.2045	0.0055
Balanced Funds	0.445	-0.31667	-0.26667	0.073333	-0.29167	-0.06417
Asset Allocation Funds	-0.19	-0.386	-0.11833	-0.19	-0.16917	-0.20722
Income Funds	-0.27714	-0.381	-0.47	-0.622	-0.4255	-0.44708

Source: *Author's calculations*

Table 3: Results for Treynor ratio

	2007	2008	2009	2010	2008-2009 (Average)	2007-2010(Average)
Islamic Mutual Funds						
Equity Funds	0.003333	0.43	-0.34	-0.01333	0.045	0.02

Balanced Funds		-0.04	-0.04	0.01	-0.04	-0.02333
Asset Allocation Funds	0.0	-0.0275	0.006	-0.0854	0.009	-0.02368
Income Funds	0.17	0.636667	0.058	-1.406	0.266	-0.67267
Conventional Mutual Funds						
Equity Funds	0.027143	-0.0275	-0.078	0.004	-0.069	-0.02983
Balanced Funds	0.03	-0.06667	-0.06333	0.005333	-0.04833	-0.0195
Asset Allocation Funds	-0.04	-0.04	-0.04167	-0.08067	-0.0325	-0.06024
Income Funds	0.068571	0.549	1.989	-0.124	1.269	0.796167

Source: *Author's calculations*

Table 4: Results for Jensen alpha

	2007	2008	2009	2010	2008–2009 (Average)	2007–2010 (Average)
Islamic Mutual Funds						
Equity Funds	-0.01067	-0.006	0.007333	-0.01433	0.000667	-0.00592
Balanced Funds		-0.007	-0.001	-0.01	-0.004	-0.006
Asset Allocation Funds	0.017	-0.00325	0.00248	-0.0146	0.00118	0.00254
Income Funds	-0.003	-0.007	-0.0086	-0.0092	-0.0069	-0.00763
Conventional Mutual Funds						
Equity Funds	0.009286	-0.00375	-0.0082	-0.0141	-0.00845	-0.00734
Balanced Funds	0.0025	-0.00567	-0.00233	-0.00833	-0.004	-0.00378
Asset Allocation Funds	-0.031	-0.0108	-0.00483	-0.01767	-0.00433	-0.01032
Income Funds	-0.00686	-0.0072	-0.0127	-0.007	-0.00995	-0.00846

Source: *Author's calculations*

References:

[1] See [McDonald (1974); Veit & Cheney (1982); Lee & Rahman (1990)]
[2] www.mufap.com.pk