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Conventional or Shariah Compliant Investment: Performance Evaluation of Mutual Funds in Pakistan

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Abstract

The current study was initiated to compare the performance of conventional and *Shariah*-compliant mutual funds in Pakistan, keeping in view the contradictory opinions found in the literature in this regard. The data utilized to conduct the analysis covered the time span 2013-2021. Assessment of risk and return tradeoff was made with three ratios, namely Jenson's alpha, Treynor ratio, and Sharpe ratio by evaluating the monthly returns of conventional and *Shariah*-compliant mutual funds. The findings revealed that *Shariah*-compliant mutual funds outperformed conventional funds in terms of absolute risk measure, higher Sharpe ratio, and low coefficient of variation. While, in terms of funds' exposure to systematic risk, mixed results were obtained for both types of funds. The results produced sufficient information about the risks and returns associated with the two kinds of mutual funds which would enable fund managers and investors to make informed decisions while selecting the best mutual fund, thus generating maximum returns and with minimum risks.

Keywords: conventional mutual funds, *Shariah*-compliant mutual funds, risk adjusted returns

Introduction

Mutual funds provide a means to raise funds from those investors who have a desire to invest but possess low capital. This is achieved through combining their pool of investment in professionally managed funds. It provides an opportunity to obtain the benefit of portfolio diversification with minimum cost. According to the World Bank, "Mutual fund is a type of managed collective investment scheme that pools money from many investors to purchase securities" (The World Bank, 2022). The funds raised by mutual funds companies from investors are pooled to purchase financial securities, such as bonds, stocks, and other money market securities and

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hybrid financial instruments. Mutual funds perform like financial instruments and are traded in stock markets. Their value is determined through NAV (net asset value). They provide an opportunity to investors who lack the financial expertise needed to enjoy returns via professionally managed mutual funds returns. Mutual funds are divided into two sub-categories. The first comprises conventional mutual funds which are based on the principles of interest-based returns. The second comprises *Shariah*-compliant mutual funds which are based on Islamic principles (Merdad et al., 2016). The securities constituting Islamic mutual funds are based on the prime principle that they are free from the element of usuray, that is, instead of interest the underlying principle is that of profit and loss, since interest is strictly prohibited in Islam (Usmani, 2002).

Mutual funds mostly invest in stocks due to investor preference since stocks can be traded in stock markets. These funds can be segmented further on the basis of their types, types of markets, investors, and distribution channels (Arti et al., 2020). Another major and broad classification of mutual funds is between *Shariah*-compliant and conventional mutual funds due to the key differences in the underlying financial instruments. The key difference between *Shariah*-compliant mutual funds vs conventional mutual funds is that the former are free from speculation *(gharar)* and interest *(riba).* While, in conventional funds, the only significant factor is that of return or profit. On the contrary, Islamic mutual funds assure that investment is made only in those assets which are *Shariah*-compliant.

In the year 2019, the worldwide market of mutual funds was approximately $54.93 trillion which is expected to reach $101.2 trillion by the end of 2027, with an 11.3% compound average growth rate (Arti et al., 2020). During the last five years, Islamic mutual funds have reported higher growth in comparison to their conventional counterparts. The assets under the management of Islamic mutual funds have an approximate value of $130 billion, with 13% annual growth rate (Andrieux, 2022). Islamic investment is also regarded as ESG compliant investment. So, Islamic mutual funds are also a choice for those investors who desire to invest in ESG compliant funds for their ethical portfolios (Andrieux, 2022).

It is pertinent to study the risk and return profile of conventional and *Shariah*-compliant mutual funds, generally in the perspective of global trends and particularly in the context of Islamic countries. In Pakistan, mutual funds have reported tremendous growth during the last decade in

terms of the increased number of AMCs (asset management companies). Various fund types and their volume of growth was observed to be 18.83% during the period 2020-2022 (Mutual Funds Association of Pakistan [MUFAP], 2022). Mutual funds play a significant role to raise capital for public and private sectors in the form of debt and equity in the country, as the demand for funds in the public and private sectors has grown over the years. Pakistan has a very low saving ratio, that is, 6.8% of GDP as domestic saving as per the Economic Survey of Pakistan, 2020. Mutual funds serve an imperative role to raise this saving rate in order to achieve sustainable growth by incentivizing small investors, while addressing the challenges of increasing awareness and outreach to retail investors. Investment in mutual funds is beneficial for the regulated and documented economy, while mobilizing excess money to the sectors which efficiently use the funds.

The current study is an attempt to explore and compare the risk and return profile of conventional and Islamic mutual funds in order to assess their performance. This study will help investors and fund managers to make well-informed decisions regarding the selection of investment funds. It contributes to the existing literature on mutual funds through the application of Capital Asset Pricing Model (CAPM) with python which is a high level programming language. As per the knowledge of the author, this is the first study in the context of PSX which provides risk and return tradeoff of all conventional and Islamic mutual funds' performance by analyzing the funds of equity schemes, balanced scheme, asset allocation, fund of funds, capital protected scheme, index tracker scheme, income scheme, aggressive fixed income scheme, commodity scheme, and money market scheme offered by AMCs for both conventional and Islamic mutual funds.

The remainder of this study is arranged as follows. In section 2, a brief overview of the relevant literature of mutual funds is presented. In section 3, the data, summary statistics, and methodology are presented. Finally, in sections 4 and 5, the empirical results of the data analysis are reported and the conclusion of the study is presented, respectively.

Literature Review

Mutual funds provide an opportunity to invest in financial securities such as stocks, bonds, and other financial instruments by creating a pool of money from investors. The income is shared with the investors in proportion

to the number of units held by them. In this way, mutual funds provide access to investors who want to optimize their returns through a diversified portfolio via the option to invest in multiple securities of well-diversified and professionally managed portfolios, which is impossible to manage for a single investor. Fund managers charge fees for the management of funds. Mutual funds also provide liquidity as close-ended mutual funds can be traded in secondary financial markets, while open-ended funds can be redeemed at their NAV.

Very few studies have been conducted in the perspective of risk and reward tradeoff of conventional and Islamic mutual funds. Furthermore, in the context of PSX, no study has been witnessed. So, the current study is an attempt to address this research gap and aims to empirically analyze the performance of conventional and Islamic mutual funds by comparing all offered funds of both types. Moreover, it explores their risk and return characteristics in the context of PSX to formulate strategies for fund managers and investors. The performance of mutual funds can be assessed by calculating returns or through the assessment of risk (Pratama et al., 2018). Furthermore, their performance is also dependent upon the fund managers' appetite for risk as well as their management style. A study (Babalos et al., 2015) in the context of US equity mutual funds which assessed mutual funds via parametric estimates of their efficiency scores reported that funds are dependent upon investment style and size.

A comparison of mutual fund performance with financial markets n ASEAN countries reported that mutual funds most rapidly perform in response to risk, as compared to return related performance of the markets (Qureshi et al., 2017). The literature on the performance evaluation of mutual funds revolves around the use of factor models and the altered standard model to calculate alpha. (Mateus et al., 2019) reported that the adjusted standard model performs better as compared to standard models and provides comprehensive fund performance information. A study conducted in the context of Chinese mutual fund industry reported that the Fama-French five factor model outperformed other models; moreover, CAPM (capital asset pricing model) provided a better estimate of alpha (Sha & Gao, 2019). So, in the current study, CAPM was utilized to calculate alpha to assess and compare the performance of Islamic and conventional mutual funds.

In the literature, some mutual funds have been classified as socially responsible mutual funds. In some studies, they have been referred to as ethical mutual funds and their performance has been compared with conventional mutual funds (Statman & Glushkov, 2016; Edwards & Samant, 2003). Through the analysis of 3920 socially responsible mutual funds, it became evident that such funds performed better than the funds engaged in carbon emission and fossil fuel consumption (Soler-Domínguez et al., 2021). Another study reported that socially responsible investment SRI reported a higher Sharpe ratio as compared to other funds (Geczy et al., 2021).

The synergy of *Shariah*-compliant mutual funds and socially responsible investment funds was explored by Yesuf and Aassouli (2020). The authors reported an insignificant difference of returns between *Shariah*-compliant mutual funds and socially responsible funds. In the US equity market, Islamic fund performance with SRI provided mix results in different time frames, calculated through the CAPM methodology. While, the superiority of return over conventional funds was observed during the entire time frame of the study, that is, 1987-2018 (Climent & Soriano, 2020).

The literature contains studies with contradictory views related to the risk and return comparison of Islamic mutual funds with conventional mutual funds. Some studies report the superior returns of Islamic mutual funds as compared to conventional funds. Through the analysis of 129 Islamic mutual funds with 350 conventional mutual funds in the context of Malaysia, it was concluded that both types of funds outperformed in comparison to the market. Moreover, Islamic mutual funds outperformed conventional mutual funds. Alam and Ansari (2020) empirically analyzed the performance of conventional and Islamic mutual funds and concluded that there is an insignificant difference of returns between both funds. Islamic stocks index is highly volatile as compared to conventional stocks index, although the former reported greater stability in case of crisis (Rejeb & Arfaoui, 2019). Kingdom of Saudi Arabia (KSA) is the largest *Shariah*-compliant mutual fund market. An empirical investigation of 39 Saudi mutual funds reported that *Shariah*-compliant and conventional mutual funds has outperformed with their relative benchmark (Rahahleh & Bhatti, 2022).

Methodology

In Pakistan, 312 mutual funds are managed by 18 Asset Management Companies (AMCs) which include open funds, exchange traded funds, and VPS (pension) funds. An increase of 19% in the Asset Under Management (AUM) of these funds has been reported since the last year (MUFAP, 2022). While the asset under management (AUM) growth for the conventional mutual funds was 26.46% and for *Shariah*-compliant funds it was 8.39%, as of 30th June 2022. Saudi Arabia and Malaysia are the top two shareholders of Islamic mutual funds in the world, while Pakistan's mutual fund industry stands at the 4th position. AMCs provide investment opportunities to local and international investors by offering equity scheme, balanced scheme, asset allocation fund, fund of funds, capital protected scheme, index tracker scheme, income scheme, aggressive fixed income scheme, commodity scheme, and money market scheme. These schemes are available both for conventional and Islamic mutual funds. In the year 2022, the highest sales rate was reported by the money market mutual funds (The Pakistan Credit Rating Agency, 2022).

The current study analyzed the performance of conventional mutual funds under the categories of equity scheme, balanced scheme, asset allocation fund, fund of funds, capital protected scheme, index tracker scheme, money market scheme, income scheme, and aggressive fixed income scheme. Whereas, the performance of Islamic mutual funds was evaluated under *Shariah*-compliant equity scheme, *Shariah*-compliant balanced income scheme, *Shariah*-compliant asset allocation scheme, *Shariah*-compliant fund of funds, *Shariah*-compliant capital protected scheme, *Shariah*-compliant index tracker scheme, *Shariah*-compliant money market scheme, *Shariah*-compliant income scheme, and *Shariah*-compliant fixed income scheme. The performance evaluation of both types of funds was carried out by utilizing monthly returns for the period 2013-2021. Monthly returns were calculated on the basis of the weighted average returns of all schemes. The KSE-100 index was used as the benchmark and the T-bills rate was used as the proxy of risk-free rate. The data was extracted from multiple sources, that is, from the respective websites of the Mutual Funds Association of Pakistan (MUFAP), Pakistan Stock Exchange (PSX), and State Bank of Pakistan (SBP).

To calculate the risk adjusted returns of mutual funds, absolute and relative measures were calculated, that is, Sharpe ratio, Jensen's alpha with

Capital Asset Pricing Model (CAPM), and Treynor's ratio due to their reported validity.

Sharpe ratio was introduced by Sharpe (1966) to evaluate mutual funds' performance. It is expressed as the over and above return from the risk free rate which a portfolio can generate. As a general rule of thumb, the higher the ratio the better the portfolio performance is. It is calculated as follows:

$$S_p = \frac{R_p - R_f}{\sigma_p} \quad (1)$$

where

R_p = Return of mutual funds

R_f = Risk free rate proxied by one-month T-Bill rate

σ_p = Volatility of mutual funds return

Treynor's ratio measures the performance of the portfolio of returns against benchmark return, unlike the Sharpe ratio. This ratio is calculated as follows:

$$T_p = \frac{R_p - R_f}{\beta_p} \quad (2)$$

where

R_p = Return of mutual funds

R_f = Risk free rate

β_p = Systematic risk measure of mutual funds

Jensen's alpha is derived by using Capital Asset Pricing Model (CAPM). Due to the reported efficiency of this model to calculate expected returns in the presence of systematic risk, risk adjusted expected returns of Islamic and mutual funds were calculated using this model. The beta is a measure to report sensitivity in order to capture systematic risk, that is, the movement in market returns.

Under CAPM, the expected return of any security is calculated as follows:

$$R_p = R_f + \beta_i (R_m - R_f) \quad (3)$$

$$\alpha = R_p - [R_f + \beta_i (R_m - R_f)] \quad (4)$$

where

R_p = Mutual funds expected return

R_f = Risk free rate of interest

β_i = Sensitivity or systematic risk associated with mutual funds

R_m= Expected return of the market

Positive alpha value indicates that mutual funds are performing better than the market.

In order to analyze the data, multiple libraries of python were utilized for the evaluation of risk adjusted performance of both Islamic and conventional mutual funds.

Results and Discussion

Descriptive statistics of both conventional and *Shariah*-compliant mutual funds are presented below in Table 1.

Table 1

Descriptive Statistics of Conventional and Shariah-Compliant Mutual Funds Monthly Returns

Mutual Funds Categories	Mean	Standard Deviation	Skewness	Kurtosis	Min	Max
Equity	2.7019	8.8405	0.5859	0.3952	-18.75	26.5600
Income	8.0936	4.3835	1.4681	2.8563	-0.820	23.1700
Money Market	7.3696	2.6565	1.4848	2.6164	4.4000	18.5600
Aggressive Fixed Income	8.1246	5.7198	1.1220	2.4695	-7.370	28.3400
Asset Allocation	0.8125	2.8595	-0.2784	2.2350	-10.75	8.2800
Balanced	0.8700	3.9493	-0.3974	2.4350	-15.08	12.0100
Capital protected	0.4338	0.6108	1.1050	5.4800	-1.320	3.4600
Fund of Funds	0.6713	2.7418	-0.4112	3.8654	-11.14	9.2500
Index Tracker	0.7074	4.3880	0.3204	1.5653	-10.52	16.1800
Shariah-Compliant Equity	1.0676	6.0423	-0.2652	2.8593	-23.74	21.4500
Shariah-Compliant Income	6.7228	2.6942	0.5094	-0.4438	1.6900	13.20000
Shariah-Compliant Money Market	6.5754	2.4641	1.1493	1.1684	1.5600	15.1700
Shariah-Compliant Aggressive FI	7.5022	4.7452	2.1858	19.5760	-12.30	38.17000

Mutual Funds Categories	Mean	Standard Deviation	Skewness	Kurtosis	Min	Max
Shariah-Compliant Asset Allocation	0.8458	3.5365	-0.1078	3.2397	-13.45	13.0500
Shariah-Compliant Balanced	0.7760	3.4170	-0.2446	1.5590	-13.08	10.25
Shariah-Compliant Capital protected	0.8874	2.3776	0.2771	3.4030	-8.230	8.5300
Shariah-Compliant Fund of Funds	0.8116	3.3693	-0.1425	2.5168	-12.38	12.2600
Shariah-Compliant Index Tracker	0.8455	6.3293	-0.1032	2.7996	-24.11	23.0300

The overall pattern of the weighted average returns of all selected conventional and mutual funds are presented via box plot in Figure 1 and Figure 2.

Figure 1

Box Plot of Conventional Mutual Funds Monthly Returns

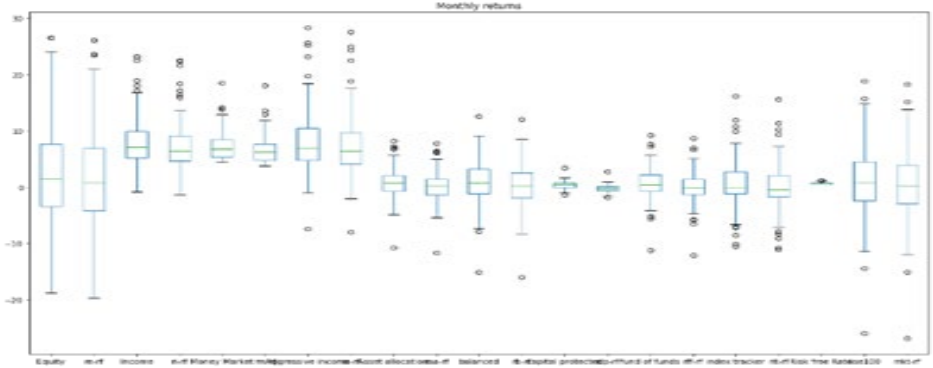
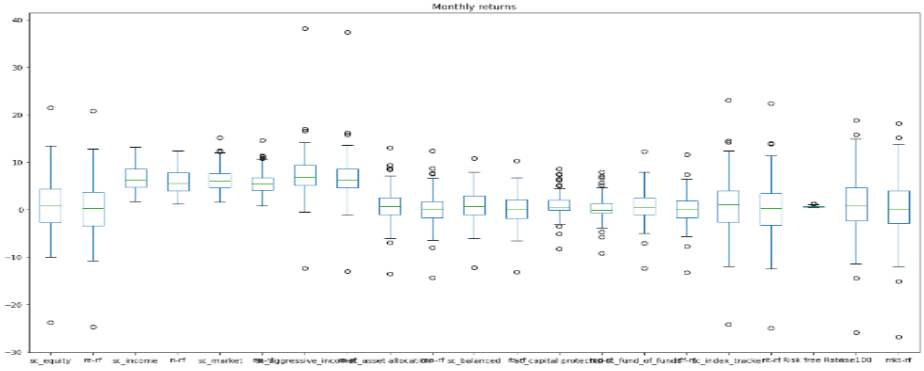


Figure 2

Box-Plot of Shariah-Compliant Mutual Funds Monthly Returns



The historical trend of summarized returns are presented below in graph 2-3.

Figure 3

Monthly Return of Conventional Mutual Funds

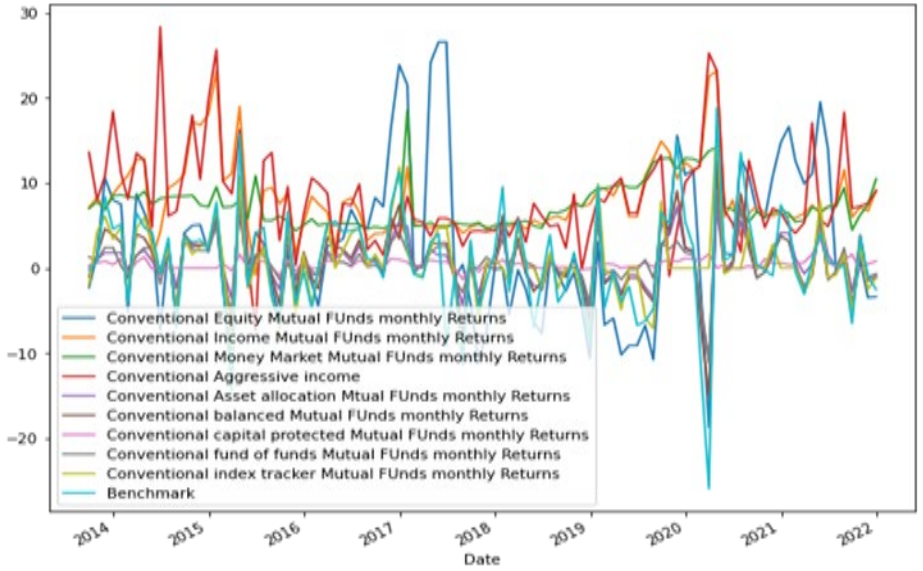
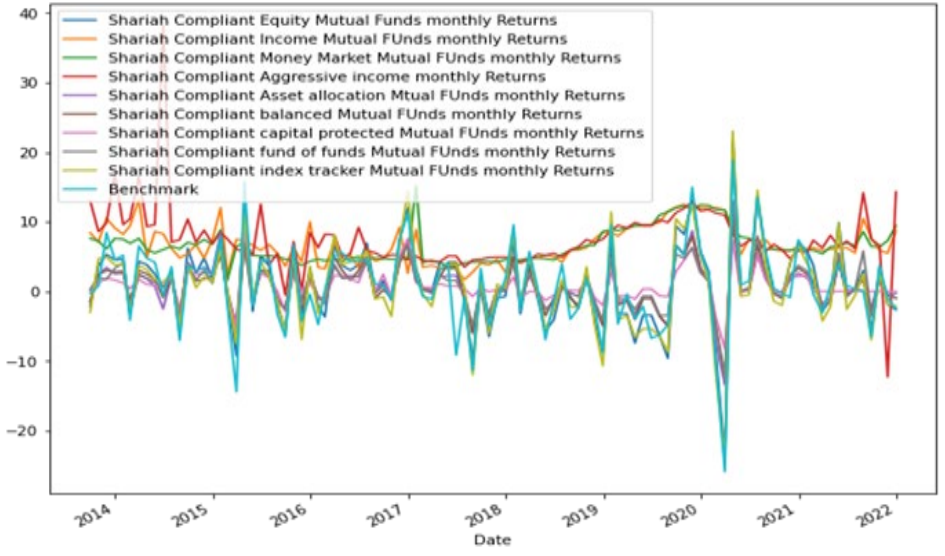


Figure 4

Monthly Return of Shariah-Compliant Mutual Funds



In order to compare the performance of the selected nine (9) conventional mutual funds with their *Shariah*-compliant counterparts, absolute risk analysis as well as risk adjusted return analysis was performed. The results were compared accordingly. The results are presented below in Table 2.

Table 2

Mutual Funds Performance Analysis Using Sharpe, Treynor, CV, and SD

Mutual Funds Categories	Risk Adjusted Measure		Absolute Risk Measure	
	Sharpe Ratio	Treynor Ratio	Coefficient of Variation (CV)	*SD*
Equity	0.8025	2.4749	86.37%	8.8405
Income	6.0051	186	47.37%	4.3835
Money Market	9.1628	3520	28.71%	2.6565
Aggressive Fixed Income	4.5775	308.892	61.81%	5.7198
Asset Allocation	2.6451	16.299	31.71%	2.8595
Balanced	0.1918	0.3714	41.42%	3.9493
Capital protected	-1.2283	-9.148	7.75%	0.6108
Fund of Funds	0.0254	0.0542	30.80%	2.7418
Index Tracker	0.0443	0.1142	47.42%	4.3880
Shariah-Compliant Equity	0.2385	0.4678	58.01%	6.0423
Shariah-Compliant Income	8.1692	314.668	34.24%	2.6942
Shariah-Compliant Money Market	8.7621	-557.1590	31.66%	2.4641
Shariah-Compliant Aggressive F. Income	5.0920	240.430	60.05%	4.7452
Shariah-Compliant Asset Allocation	8.7621	11.512	37.96%	3.5365
Shariah-Compliant Balanced	0.1264	0.2525	36.90%	3.4170
Shariah-Compliant Capital protected	0.3439	0.7189	27.10%	2.3776
Shariah-Compliant FOF	0.1646	0.3286	36.46%	3.3693
Shariah-Compliant Index Tracker	0.1062	0.2109	60.24%	6.3293

Several studies have reported the impact of risk on the return of mutual funds. In order to determine absolute risk, the risk proxy of the standard deviation of funds was calculated. The results indicated that the highest risk

is associated with the conventional equity funds is 8.8045 reported standard deviation(risk proxy), while the *Shariah*-compliant equity funds reported as 6.60432 Standard Deviation. Furthermore, the same performance of conventional funds was reported in the case of conventional income, money market, fixed, aggressive fixed income, asset allocation, and balanced funds, in comparison to *Shariah*-compliant funds. While, in the case of index tracker, fund of funds, and capital protected funds category, *Shariah*-compliant funds reported higher absolute risk in comparison to their conventional counterparts. On average, *Shariah*-compliant mutual funds reported lower absolute risk.

For the comparison of the relative performance of mutual funds, CV or the coefficient of variation (which is a relative measure of dispersion that is expressed as the ratio of standard deviation to its return) has been reported as the preferred measure over the single criterion of risk measurement through standard deviation. The higher value of CV indicates greater variation and higher risk. The results indicate that the highest CV was reported for conventional equity funds (86.37%), while the CV for *Shariah*-compliant equity funds was lower (58.01%). Similarly, a higher CV of conventional mutual funds as opposed to *Shariah*-compliant funds is reported in Table 2 for the categories of income, aggressive fixed income, and balanced funds.

The comparison of conventional and *Shariah*-compliant mutual funds in terms of risk adjusted performance is demonstrated in Table 2. The table indicates the higher Sharpe ratio of Islamic mutual funds as compared to conventional mutual funds. Moreover, it also shows that conventional capital protected funds have a negative Sharpe ratio. The results indicate that *Shariah*-compliant mutual funds have higher risk adjusted returns calculated through the Sharpe ratio.

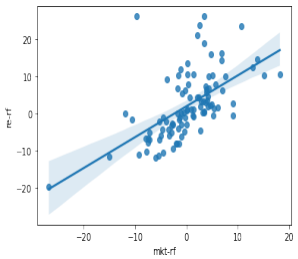
Another risk adjusted measure namely Treynor's ratio reported mixed results, in general. Treynor's ratio, popularly known as 'reward to volatility' ratio, is a measure of portfolio excess return per unit of systematic risk. Except capital protected conventional mutual funds and *Shariah*-compliant money market funds, all other funds were found to have a positive Treynor's ratio. This finding indicates that these funds have excess positive returns in ratio to systematic risk.Although, conventional mutual funds generated better values in comparison to Islamic mutual funds.

CAPM is widely employed to determine the expected returns of mutual funds with respect to their performance in consideration of systematic risk. Figure 5 and Figure 6 graphically depict the derivation of betas for both conventional and *Shariah*-compliant mutual funds. CAPM provides the mechanism to assess financial security prices. It also reflects the required return that fund managers desire to achieve while investing in a particular security. The security market line represents this relationship graphically, while the slope represents the beta. The beta is a relative measure of market risk, that is, the degree of change in the assets required return with respect to the change in market return. The higher the beta the steeper is the plotted line and it reflects higher risk.

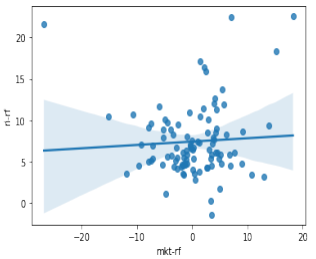
To capture the volatility of returns in response to systematic risk, the graph of conventional funds shows that conventional mutual funds, such as equity, asset allocation, funds of funds, index tracker, and capital protected funds have a steep slope. It reflects these funds' sensitivity to market risk. While, income, money market, and aggressive fixed income funds have a flatter curve which shows their insensitivity to market risk.

Figure 5

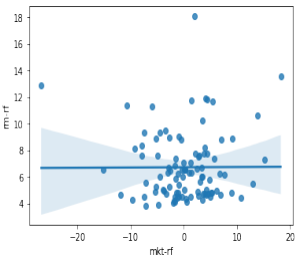
Capital Asset Pricing Model (CAPM) of Coneventional Mutual Funds



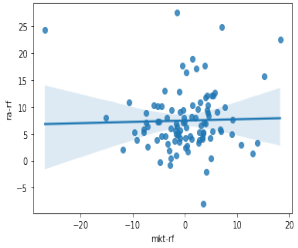
CAPM of Equity Funds



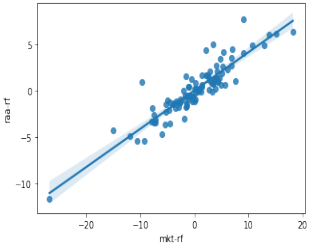
CAPM of Income Funds



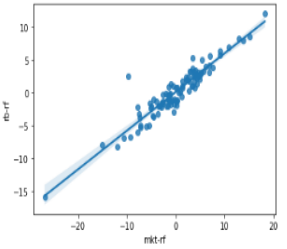
CAPM of Money Market Funds



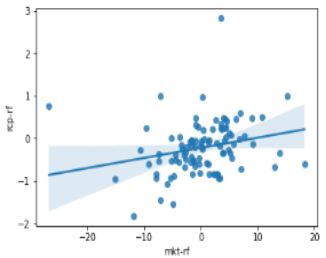
CAPM of Aggressive Fixed Income Funds



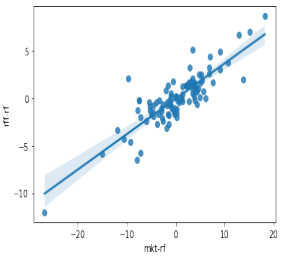
CAPM of Asset Allocation Funds



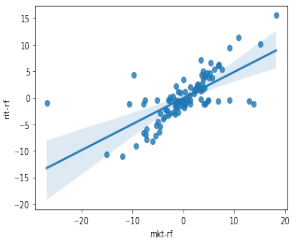
CAPM of Balanced Funds



CAPM of Capital Protected Funds



CAPM of Fund of Funds

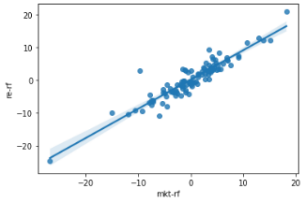


CAPM of Index Tracker Funds

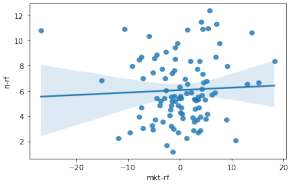
In case of *Shariah*-complaint mutual funds, CAPM model graph presented in Figure 6 depicts that 6 out of 9 Islamic mutual funds were responsive to market risk, while 3 funds namely income, money market, and aggressive fixed income funds showed insensitivity to market risk.

Figure 6

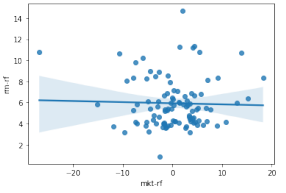
Capital Asset Pricing Model (CAPM) of Shariah-Compliant Mutual Funds



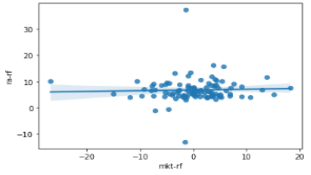
CAPM of Equity Funds



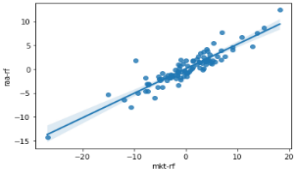
CAPM of Income Funds



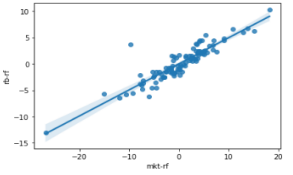
CAPM of Money Market Funds



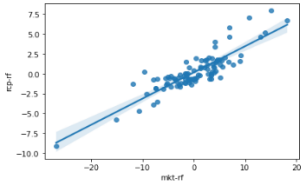
CAPM of Aggressive Fixed Income Funds



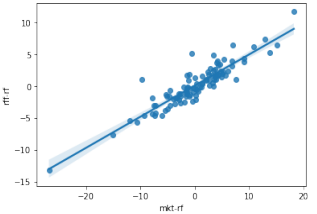
CAPM of Asset Allocation Funds



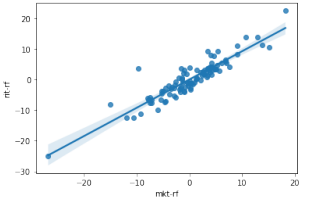
CAPM of Balanced Funds



CAPM of Capital Protected Funds



CAPM of Fund of Funds



CAPM of Index Tracker Funds

The value of Jensen's alpha derived via the CAPM model, the value of beta, and their test results for conventional mutual funds are presented in Table 2. The table shows that equity, income, money market, aggressive fixed income, and asset allocation funds have positive alpha values, while capital protected, fund of funds, and index tracker funds have negative alpha values depicting that they do not outperform the benchmark. Moreover, the positive alphas of equity, income, money market, and aggressive fixed income funds are statistically significant. It reflects these funds have reported superiority of performance over the benchmark on risk adjusted basis.

Table 3

Conventional Mutual Funds Risk Adjusted Return

Mutual Funds Categories	Alpha (α)	Beta (β)	Adjusted-R^2
Equity	1.8490** (2.572) [0.012]	0.8286*** (7.239) [0.000]	0.342
Income	7.4326*** (17.242) [0.000]	0.0405 (0.590) [0.556]	0.007
Money Market	6.7180*** (26.296) [0.000]	0.0019 (0.047) [0.963]	0.010
Aggressive Fixed Income	7.4676*** (13.1320) [0.000]	0.0242 (0.267) [0.790]	0.009
Asset Allocation	0.0610 (0.503) [0.616]	0.4122*** (21.333) [0.000]	0.821
Balanced	0.0753 (0.555) [0.580]	0.5893*** (27.260) [0.000]	0.882
Capital protected	-0.2231*** (-3.732) [0.000]	0.0238** (2.495) [0.014]	0.050
Fund of Funds	-0.0705 (0.298) [0.627]	0.3723*** (16.178) [0.000]	0.725

Mutual Funds Categories	Alpha (α)	Beta (β)	Adjusted-R^2
Index Tracker	-0.0637 (-0.2030) [0.839]	0.4926*** (9.878) [0.000]	0.494

Note. ( ) represents value of t-statistics, * indicates that H_o rejected at 5% level of significance, p*<0.10, p**<0.05, p***<0.001, [ ] indicates p-value

The beta value of 1 reflects that asset response is similar to the market risk, while beta value greater than 1 shows that asset response is higher than the market risk. On the contrary, beta value less than 1 indicates that the asset is less responsive to market risk. Table 2 shows that the beta values of all conventional mutual funds are less than 1. While, the beta value of conventional equity mutual funds is close to 1 and remains significant, which indicates these funds' sensitivity to the market risk. All in all, 6 out of 9 conventional mutual funds have significant beta values which shows that these funds are exposed to systematic risk.

Table 4

Shariah-Compliant Funds Risk Adjusted Returns

Mutual Funds Categories	Alpha (α)	Beta (β)	Adjusted-R^2
Shariah-Compliant Equity	0.1996 (0.8830) [0.3800]	0.8903*** (24.716) [0.000]	0.860
Shariah-Compliant Income	6.0670*** (23.4540) [0.000]	0.0193* (0.468) [0.641]	0.008
Shariah-Compliant Money Market	5.9269*** (25.168) [0.000]	-0.0106 (-0.284) [0.777]	0.009
Shariah-Compliant Aggressive Fixed Income	6.8441*** (14.610) [0.000]	0.0285 (0.382) [0.703]	0.009
Shariah-Compliant Asset Allocation	0.0693 (0.483) [0.630]	0.5146*** (22.504) [0.000]	0.836
Shariah-Compliant Balanced	0.0044 (0.031) [0.975]	0.4946* (21.876) [0.000]	0.828

Mutual Funds Categories	Alpha (α)	Beta (β)	Adjusted-R^2
Shariah-Compliant Capital protected	0.1562 (1.328) [0.187]	0.3287*** (17.539) [0.000]	0.756
Shariah-Compliant Fund of Funds	0.0415 (0.298) [0.767]	0.4884*** (21.982) [0.000]	0.830
Shariah-Compliant Index Tracker	-0.0301 (-0.118) [0.907]	0.9214*** (22.640) [0.000]	0.838

Note. ( ) represents value of t-statistics, * indicates that H_o rejected at 5% level of significance, [ ] indicates *p*-value

The Jensen' alpha of Islamic mutual funds, the value of beta, t-value, adjusted r squared, and *p*-values are presented in Table 4. The table shows that out of the 9 Islamic mutual funds, 8 reported positive alpha values which is indicative of the fund managers superiority of performance over the benchmark. *Shariah*-compliant income, money market, and aggressive fixed income funds have significant alpha values. For the analysis of systematic risk the beta measure is used as proxy of systematic risk ,for all these funds beta values are less than one and 6 out of 9 funds have significant values of beta which indicates their sensitivity to systematic risk. The value of adjusted r squared indicates the extent to which funds value is explained by the benchmark. Table 2 and Table 3 indicate that as compared to conventional funds, *Shariah*-compliant funds are closely aligned with the movement in the benchmark. Moreover, the performance of *Shariah*-compliant funds is relatively more connected with benchmark performance. So, in terms of exposure to systematic risk, it was found that both conventional and Islamic funds are exposed to it, although *Shariah*-compliant funds are more connected with the benchmark performance.

Conclusion

In the current study, the performance of conventional mutual funds and *Shariah*-compliant mutual funds was analyzed in terms of their risk and return characteristics. The results indicate that in terms of absolute risk measure, Islamic mutual funds outperform their respective conventional counterparts. Moreover, they have a higher Sharpe ratio and a low coefficient of variation. While, in terms of systematic risk exposure and

Treynor's ratio comparison, mixed results were obtained. Most of the funds reported a positive Treynor's ratio. The findings indicate that both *Shariah*-compliant and conventional mutual funds have beta values less than 1 (which are significant). Moreover, the performance of *Shariah*-compliant funds is more connected with the benchmark. The findings also indicate that investors can generate the superiority of return through investing in *Shariah*-compliant funds, as they are less exposed to absolute risk. Furthermore, in terms of systematic risk, both conventional and *Shariah*-compliant mutual funds show the same performance results. In the future, studies may be initiated to evaluate the performance of both funds with the application of multiple factors model and through the evaluation of globally available mutual funds.

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