Conventional Mutual Funds Out Perform Islamic Mutual Funds in the Context of Pakistan: A Myth or Reality

Muhammad Zeeshan1*, Jiabin Han1, Alam Rehman2, Kashif Saleem3, Raza Ullah Shah4, Amir Ishaque5, Naveed Farooq6, Arif Hussain7

1College of Business Administration, Liaoning Technical University, Liaoning province, Xing Cheng, 125105, China, 2Faculty of Management Sciences, National University of Modern Languages, Pakistan, 3Qurtuba University of Science and Information Technology, D.I Khan, Pakistan, 4Department of Management Sciences, Qurtuba University, D I Khan, Pakistan, 5Air University School of Management, Air University, Islamabad, Pakistan, 6Abdul Wali Khan University Mardan, Pakistan, 7Department of Management Sciences, Abdul Wali Khan University, Mardan, Pakistan. *Email: abobakarmzk1@gmail.com

Received: 14 May 2020
Accepted: 29 June 2020
DOI: https://doi.org/10.32479/ijefi.10090

ABSTRACT
Mutual Funds enable small investors to enjoy the benefits of the capital market instruments with small amount using the expertise of professional managers. This study examines the risk adjusted performance, timing and selection abilities of conventional and Islamic mutual funds in the context of Pakistan. The emergence of Islamic portfolio in the recent years has put mutual fund investors in puzzle, whether to opt for Islamic or conventional funds. The study analyzes 90 (ninety) open ended funds data, which is comprised of 45 each from Islamic and conventional funds, selected randomly over the period of 2011-2019, from the existing population of open-ended mutual funds. We employ asset pricing models i.e. CAPM (1966), and Fama French three factors (1993) model, to measure the risk adjusted performance, and Treynor and Mazuy (1966) model for predicting their selectivity and timing abilities. The results demonstrate that Conventional funds perform better than Islamic funds in term of risk adjusted performance, and conventional funds predict better market timing and selection abilities than its Islamic portfolio. The study has certain implications for the managers of the assets management companies in selecting their best portfolios, making timely investment and will, also be useful for the investors in knowing funds, which perform better.

Keywords: Risk Adjusted Performance, Market Timing and Selection Abilities, Open Ended Mutual Fund, PAKISTAN
JEL Classifications: G22, G12

1. INTRODUCTION
Investing in mutual fund is a common phenomenon, but the recent emergence of Islamic portfolio in Islamic world has put many mutual fund investors in test. In this regard, investors in mutual fund are divergent in their choices and likings. This study attempts to examine both conventional and Islamic funds, to understand their risk adjusted performance, timing abilities and selectivity skills, in order to provide a clear picture about risk and return associated with these both portfolio, to investors in this emerging area. In lieu of the puzzle to go for conventional or Islamic portfolio, this study will provide a clear picture to investors, and will help in their investment choice. Mutual funds are the specialist in fund management, channelizing the savings of small investors in profitable business avenues to generate healthy and safer return for the investors. Mutual funds exploit targeted business opportunities in the capital and money markets to better make tradeoff between risk and return (Rehman and Baloch, 2016). Mutual funds can also be called as the asset management companies that help the investors to invest their money in profitable instruments such as stocks, bonds and money markets. Majority of investors prefer investment in mutual fund, as an investment...
choice in the financial market for small investors characterized by diversified investment attributes. In essence, mutual funds help small investors to enjoy the investment choice, who do not possess the investment skills in the capital market. In this regard, asset management companies play a vital role to facilitate these small investors (Shah et al., 2005). Mutual funds turned out to be the largest financial intermediaries due to the number of assets it owns across the world, which account for more than $45 trillion (Factbook, 2014). Mutual funds are the investment vehicle, which helps the economy by channelizing the savings of individuals and institutions into the financial market. Mutual fund provides low transaction cost, liquidity, diversification and professionally managed portfolio for investors. The values of assets invested in mutual funds have been increased significantly in the last decade as compared to the direct ownership of common stock. This tremendous growth of MF signifies the interest of investors in the safer investment choice of mutual fund (Huhmann and Bhattacharyya, 2005; Rehman and Baloch, 2016).

The world has witnessed an increasing trend in the mutual fund industry, specifically in developing countries. This particular investment choice is highly preferred by all kinds of investors. Emerging markets always exhibit lower volatility than developed markets, due to the lower diversification Barry (1998). Pakistan is a developing country where both conventional and Islamic funds are traded on mutual fund association of Pakistan (Rehman and Baloch, 2016). The Shariah-advisory board for investment dealing with mutual funds of the Islamic portfolio, and prefer investment in those portfolios which are characterized by are Shariah-compliant and its structure and operations are based on pure financial structure. Islamic mutual funds do not allow investment in those funds that are non Shariah-compliant, i.e. weapons, tobacco, alcohol, pornography, biotechnology aimed at human cloning and organizations mainly relying on debt financing. These funds also prohibit investment in interest based instrument, such as bonds, treasury bills, warrants, certificate of deposits, and options etc. Moreover, these funds also dislike investment in organizations engaged in speculation (Maysir) and excessive uncertainty, which is called, Gharar (Abdelsalam et al., 2014). Many other researchers, also have the same kind of findings (Hayat and Kraeussl, 2011; Shanmugam and Zahari, 2009).

During early 1990s, the financial and capital market of Pakistan started liberalization due to privatization attempts by the ruling regime, afterwards in 2000s and onward the mutual funds industry drastically expended in term size and assets value in Pakistan. The growth was, mainly due to the interest of both domestic as well as foreign investors, who invested heavily in the mutual funds industry. MF business in Pakistan highly expended after the privatization of ICP. In 2002, very few open ended and closed-end mutual funds were operated, which accounted for the US $318 million in 2005, and by end of the year 2010 the number of open-end mutual funds reached in size and value and accounted for US $1469 million (Mahmud and Mirza, 2011).

National Investment Trust (NIT) was established as a pioneering mutual fund in Pakistan in 1962. At present, Pakistani mutual fund industry worth the US $ 4.329 billion and 200 mutual funds are trading under the supervision of 20 asset management companies (Rehman and Baloch, 2016). Pakistan is an Islamic Republic State where both conventional and Islamic fund are traded on MUFAP. AI- Meezan mutual fund established in 1995 was the first Islamic MF in Pakistan. Currently, Islamic MF net assets value is about US $1.47 billion. The assets value of Islamic MF is comparatively lower, than the Conventional MF in Pakistan as the Islamic portfolios of reserves are still in infancy stage (Rehman and Baloch, 2016).

In Pakistan, mainly two kinds of MF i.e. open-ended and closed-ended are traded, which are further explored and divided based on numerous categories on the basis of their styles i.e. equity scheme, income scheme, money market scheme, balanced scheme, asset allocated scheme, sharia complaint scheme, aggressive fixed income fund etc.

Islamic mutual funds started its growth with a reasonably good pace, since the industry liberalized in the 1990s. This quick growth is prospered, due to the large quest for Shariah-compliant instruments, sound legal and regulatory framework of Islamic financial system, and the demand from the potential conventional investors and skills of the industry in bringing well dynamic and innovative Islamic instruments in the mutual fund industry as the desire and need of the investors (Hasan and Dridi, 2010). Islamic equity funds are being preferred by Muslim investors, as an investment choice in Shariah-compliant products (Derigs and Marzban, 2009).

Market timing and stock selection are very vital for the managers as better timing and right stock selection can ensure superior fund performance. Selectivity showing holding the stock, which will better perform in future, while the market timing is an investment in the market situation when the market shows upward trend so called a bullish trend and discouraging investment when market predicting down ward trend (Lee and Rahman, 1990). Numerous studies across the globe have explored the managers timing skills as well as selection skills, but the same is found rare in the context of Pakistan, particularly investigating conventional and Islamic fund for the aforementioned managers abilities cannot be find in the relevant literature. Emerging economies have shown less efficiency as compared to the developed market, and it provides managers with an abnormal return most often (Huij and Verbeek, 2007).

This research extends the current literature by conducting the comparative analysis of mutually traditional and Islamic MF, to understand about their market timing and selectivity abilities, which have not been previously explored in the context of Pakistan. Secondly, most of the researches previously have applied conventional methods, similar to quick ratio and Trynor ratio to predict the funds risk adjusted performance, while we predict the same using CAPM and Fama French 3-factor model, analyzing both conventional and Islamic portfolios.

This paper has been synthesized in five sections. The first section contains the background and introduction of the paper. The second section highlights and explains the literature, pertinent to the
variable’s relationship and hypothesis development. The third section discusses the methodology in brief. Forth section showing the empirical results, while the last and fifth section provides the details about the findings and conclusion.

2. LITERATURE REVIEW

There exists a plethora of literature in the realm of a mutual fund. Many studies have done to examine different issues related to mutual funds, such as MF presentation, flow of performing relationship, the performance of funds as far as their persistence is concerned, smart money effect, timing skills and selection ability of fund managers etc. This paper investigating the timing and selection skills of the fund managers with a view to generate superior risk adjusted performance. (Treynor and Mazuy, 1966) was a pioneer to develop a model, to examine the timing and selection skills of the managers professionally performing their duties in asset management companies. Afterwards, Henriksson and Merton (1981) developed a new model for testing, how timely the managers of these AMCs cope with changes in the market in time when the stock is undervalued and how these managers select the portfolios of different assets.

Numerous studies have been conducted in Pakistan, explaining and analyzing the funds’ performance; majority of them applied the traditional measures i.e Sharpe ratio, Treynor and Jensen alpha in evaluating the funds’ performance (Afza and Rauf, 2009; Nazir and Nawaz, 2010). Some other in the same line also used these ratios while predicting mutual fund performance in pakistani context (Shah et al., 2012; Sipra, 2006). These studies asserted that the funds underperform the market due to diversification issue confronted to these managers. Sipra (2006) investigated the Pakistani mutual funds’ performance and observed that majority of the funds are not performing up to the mark and very limited number of these are meeting the target, while considering the benchmark.

The performance evaluation and determination of successful fund managers has got the quantum of debate for both investors, and academicians. The academicians are interested in significant evidence of funds having superior performance, as it would reject the efficient market theory. Contrary to this, investors are interested to know about the funds’ performance as the same is expected to provide significant information to investors in their investment decisions. These investors based their decisions purely on the performance of these funds. Mutual Fund is one of the important areas in the field of finance. The earlier researches, who evaluated the funds and portfolio return, documented significant relationship between risk and return and properly analyzed these relationship (Jensen, 1945; Sharpe, 1966; Treynor, 1965). After the significant contribution by the above-mentioned research, the funds and stock evaluation continued across various countries of the world in both developed and developing nations. Investors are interested in two important aspects to determine the mutual fund manager’s ability for the healthier functioning of MF. One is market timing ability and the second is stock selection ability. Market timing skill refers to correctly evaluating the market direction and creating the portfolio accordingly. While, stock selection skill refers to estimate the movement of individual stocks in relation to the market, and evaluate these stocks, as these are over-valued or under-valued (Treynor and Mazuy, 1966).

Mainly, in the literature of fund performance, various tools were used to predict, evaluate and measure the in evaluating mutual performance of mutual funds (Jensen, 1945; Sharpe, 1966; Treynor, 1965). The same kinds of measures were, also tested in predicting mutual fund performance by numerous researchers (Elton et al., 1993; Jensen, 1968). In the same plethora, Kothari and Warner (2001) measured mutual fund performance through these measurement tools. Many other researchers follow the same method of fund performance (Carhart, 1997; Haslem, 2008). Majority of these studies documented that mutual funds are not the best instrument to beat other instruments in the capital market and termed the investment in it as the last option. While, on contrary, Ippolito (1989), and Lee and Rahman (1990) predict that mutual funds risk adjusted performance is up to the mark. Many other researchers, also proved the positive risk adjusted performance of mutual funds and concluded that mutual funds perform well (Grinblatt and Titman, 1989; Hendricks et al., 1993). Although, many of them focused on the performance evaluation of mutual funds and few studies have investigated the market timing and selectivity skill of fund manager. There are two important dimensions for investor to analyze the fund manager ability of generating superior performance; these are market timing skills and stock selection skills (Treynor and Mazuy, 1966).

The traditional performance evaluation measures are insufficient to examine and analyze the timing as well as selection skills of the mutual fund managers. Most of the past researchers measure the timing skills and selection abilities through Treynor and Mazuy (1966) model, Black et al. (1972) model, Francis and Fabozzi (1979) model, Henriksson and Merton (1981) model etc. Treynor and Mazuy (1966) investigated mutual funds timing and selection skills of funds managers and got very significant results for the analysis. Similarly, Henriksson and Merton (1981) analyzed mutual funds timing and selection ability, and got very week and poor results for the funds timing abilities, as three out of one hundred and sixteen evidenced better timing abilities. That is why Pakistani funds need to be investigated for their timing and selection abilities.

Chang and Lewellen (1984) investigated the timing and selection ability of mutual fund managers. They used parametric statistical procedure for examining the market timing and selectivity of 67 mutual funds during the 1970. Their empirical results suggest that mutual fund managers have no skillful market timing, and no superior stock selection ability. While in similar study, Chen and Stockum (1986) analyzed the timing, selection skills and beta of mutual funds. The study revealed that around thirty percent of funds have selectivity concern and fourteen percent have market timing inabilities. Likewise, Chen and Ainsworth (1992) evaluated US based funds and predicted that five funds displayed positive market timing ability while 23 funds exhibited minimal timing ability of fund managers. According to, Elton et al. (2003), mutual funds, which perform well actually pay attractive incentives to the fund managers and they show superior selection ability as compare to those funds that provide less or no incentives. In addition, to
these poor performing managers who provided lesser incentives to increase their fund's risk in the period following low performance. Mutual fund managers facing challenge to better time the market and to collect right portfolio of undervalued stock (Filippas and Psoma, 2001). Many researchers argued that there is no significance difference in the performance and timing skills of conventional and Islamic funds (Elfakhani et al., 2005). Timing ability is vital for the fund performance as it documents a better performance of a fund in the market (Low et al., 2007). While in similar study, Hassan et al. (2007) analyzed the Malaysian funds and argued that Islamic funds are the superior performers than conventional funds in market, characterized by bearish trend and conventional do well, when the market is having bullish trend. A study exploring the timing and selection capabilities of assets mangers in the context of Hong Kong evidenced that majority of the managers of mutual funds have poor timing and selecting abilities to generate return above the capital market does offer (Abdel-Kader and Qing, 2007). The recent literature on mutual fund studies predicting the funds selection and timing skills, and confirmed mixed results. Chen et al. (2010) analyzed different funds and predicted that the selected equity funds are not superior in term of their timing and selection skills in comparison to the other styles. In a similar study, Cici and Gibson (2012) predicted the low performance of funds is mainly due to its weak timing skills and stock selections. While in similar study, Puckett and Yan (2011) reported positive results for the fund’s managers in respect to both characteristics, i.e. timing and selectivity and considered that mutual funds have better timing and selectivity. Huang and Wang (2014) analyzed 146 bond funds, examining their performance, and reported, significant positive timing abilities based on only 1-month forecasting not for longer span. Based on the above literature, the following hypotheses are developed to analyze the Pakistani conventional and Islamic funds.

Research hypothesis

H$_1$: Conventional Funds perform better than Islamic funds.

H$_2$: Conventional funds have better selectivity skills than Islamic funds.

H$_3$: Conventional funds have better timing abilities than Islamic funds.

H$_4$: Conventional funds are riskier than Islamic funds.

3. DATA AND METHODOLOGY

3.1. Population and Sample Description

The population of the current literature includes all funds operating on MUFAP under the management of around 20 AMCs. The study employs random sampling technique for the analysis of 90 open ended mutual funds, representing both conventional and Islamic categories. Further these two categories i.e. Islamic and conventional funds have been bifurcated in different styles of funds i.e. equity fund, income funds, balanced funds, asset allocated fund and aggressive fixed income funds. The study analyses 45 Islamic and 45 conventional funds to predict the results and test the hypothesis.

3.2. Data Procedures and Management

We analyzed conventional and Islamic funds in term of their risk adjusted presentation, timing abilities and selection abilities for the period 2011-2019. We collected the daily NAV data of all sample funds and converted in the fund log return by using formula as current NAV minus previous NAV divided by current NAV. We collected 100-index daily data and converted into monthly data through Stata command month identifier and then calculated the index return. We collect T-bills data on daily basis and converted into monthly data. We also collect the day-to-day share prices data of all registered companies for calculating the small minus big (SMB) and High minus low (HML). We merged financial data with share price and calculated market capitalization and book to market ratio. We generated size and BM rankings of firms in each year, size based on Big and small while B/M based on Low, Medium, and High. We generated six portfolio returns in each month, Portfolios are BL, BM, BH, SL, SM, SH, where B represent big size and S for small size. L M, and H showing Low, Medium and High B/M ratios. Finally, we generated SMB and HML factors, as $SMB = (SL + SM + SH)/3 - (BL + BM + BH)/3$ while calculated HML as $(SH + BH)/2 - (SL + BL)/2$.

3.3. Mutual Fund Performance Measures

3.3.1. CAPM model

$$R_i = \alpha + \beta (R_m-R_f) + \varepsilon$$

Where $R_i$ will show the kind of risk premium which will be associated with offered stock and $\beta (R_m-R_f)$ show the projected risk premium of the model capital asset price model (CAPM), and $\alpha$ is the intercept.

This paradigm has been tested by many previous researchers in analyzing MF presentation (Huij and Verbeek, 2007; Rehman and Baloch, 2016).

3.3.2. Fama French 3-factor model

$$R_i = \alpha + \beta_1(R_m-R_f) + \beta_2(SMB) + \beta_3(HML) + \varepsilon$$

Where $R_i$ is showing actual risk premium on a given stock, small minus big showing the size factor, which shows the difference in return on a portfolio that consists of small caps funds and large caps funds. HML predicting and showing the difference in high book to markets and portfolio of low book to market stocks, while $\alpha$ is the intercept. Huij and Verbeek (2007) tested this model in their mutual fund performance evaluation studies in developed countries, while the. Same model has been tested in the context of Pakistan Rehman and Baloch (2016).

3.4. Market Timing and Selection Ability Measures

Analyzing the timing and selection abilities of funds, the following models have been tested.

3.4.1. Treynor Mazuy model

Treynor and Mazuy (1966) developed a path breaking model for testing the timing abilities and selection abilities of the fund’s managers. This is an extension of the Jensen model, where a quadratic term is added to it. Following TM model has been used to predict the results.

$$(R_p-R_f) = \alpha + \beta^* (R_m-R_f) + \gamma^* (R_m-R_f)^2 + \varepsilon_{pt}$$
Where, $p$ is return of the fund, $R$ represent risk free rate, $R_m$ means return of the market portfolio, whereas $e_p$ = error term, while $\alpha$, $\beta$ and $\gamma$ shows the parameters of the TM model.

4. DATA ANALYSIS EMPIRICAL RESULTS

Table 1 predicts the brisk adjusted presentation of traditional and MF. The findings are based on the styles of funds i.e. Equity, Income, Asset Allocation, Balanced and Aggressive income. The results demonstrate that conventional equity funds have better risk adjusted performance than Islamic funds as their respective alphas been predicted by CAPM is very close to zero suggesting the better adjustment of risk and return by conventional funds, the same equity funds also showing better performance for conventional funds as compared to Islamic funds based on Fama French -3 factor model due to the fact that their alphas are closer to zero as compare to the counterparts Islamic funds. Similarly, income funds also showing better trade of risk and return for conventional funds based on both CAPM and Fama French-3 factor over counterpart Islamic income funds. The generated alphas through both CAPM and Fama French 3-factor also predicting better performance for conventional funds than their counterparts Islamic asset allocated funds as the conventional funds alphas of both assets pricing model reveal better tradeoff for risk and return evident from the alphas of this style of funds closer to zero for conventional fund then Islamic funds. The balanced Islamic funds showing better trade of risk and return as compared to its counterparts conventional balanced funds as Islamic balanced funds alpha is touch closer to zero than their counterparts conventional balanced funds. Aggressive fixed income also showing better results for conventional funds as compared to its counterpart Islamic funds.

This table shows the results of risk adjusted performance of conventional and Islamic funds operating on MUFAP in Pakistan. The funds’ performance has been evaluated with asset pricing models i.e. CAPM and Fama French 3-factor model. All conventional and Islamic funds have been sorted in five portfolios based on their styles. Each style having 9 funds on average for both conventional and Islamic.

Table 2 predicts the results of TM model explaining the selectivity, risk timing abilities of the different styles of Conventional funds. As mentioned earlier the funds have been ordered based on their styles i.e. equity, Income, asset allocation, balanced and aggressive fund. The different parameters i.e. Alpha, beta and gamma tell about selection ability, risk and timing ability of fund managers. The alpha value of the model showing positive value for all styles portfolios except aggressive income fund, which determines that all categories of conventional funds have the selectivity abilities except the one fund i.e. aggressive income fund which posits negative alpha, signifying no selection ability. The results show higher beta value for equity funds as compared to other styles of the conventional funds, suggesting that equity funds are riskier than its other styles portfolios in the same conventional funds family, which have lower beta values. The results indicate that asset allocated, and balanced funds possess negative gamma values, documenting their week timing abilities while the rest of funds styles showing positive gamma value predicting their positive and good timing abilities.

The table discusses the analysis of Treynor and Mazuy Model for Conventional funds. The results have been based on sample period of 2011-2019. The estimated model is $(R_p-R_f) = \alpha + \beta(R_m-R_f) + \gamma(R_m-R_f) + e_p$. The alpha showing the selectivity, beta represent risk whereas gamma predicting the market timing abilities of fund managers. ***, **, * indicate the significance at 1%, 5% and 10% level, respectively.

Table 3 predicts the results of TM model portray the selectivity, risk timing abilities of the different styles of Islamic funds. All the Islamic funds have been ordered based on their styles i.e. equity, Income, asset allocation, balanced and aggressive fund. The model’s parameters i.e. Alpha, beta and gamma predict the selection ability, fund risk volatility and timing ability of fund managers. The alpha value of the model showing negative values for income funds, asset allocated and balanced fund, which implies that these funds have no selection abilities while equity funds and aggressive fixed income funds show positive alpha value,
documenting their selection abilities. The results also predicting higher beta value for equity Islamic fund as compared to other styles of the same family, which suggests that equity funds stand more risky as compared to the other counterpart styles portfolios in the same family. The results report negative gemma values for asset allocated and balanced funds, which documents their lack of timing abilities skills and hence these funds do not invest in time frame which leads to healthier return, while the rest of funds showing positive gemma values, signifying their good timing abilities. Over all the Islamic funds show good timing abilities.

The Table 3 shows the results of Treynor and Mazuy Model for Islamic funds. The study covers period from 2011 to 2017. The estimated model is \( p - \alpha = \beta \cdot (Rm - Rf) + \gamma \cdot (Rm - Rf) + \epsilon \). The parameters of the model alpha, beta and gamma explain the funds selectivity, risk and market timing. **, *** indicate the significance at 1%, 5% and 10% level, respectively.

### 5. CONCLUSION

This paper evaluates the Pakistani mutual funds in term of risk adjusted performance, selectivity and timing abilities of the conventional as well as Islamic funds in Pakistan. Pakistan is a developing and emerging Islamic country, where mutual fund industry has witnessed tremendous growth over the last few years, and the industry offer portfolio of conventional and Islamic funds to attract different classes of investors. As a matter of fact, the researchers and AMCs have concern about the performance, selection abilities and timing abilities of the prevailing two types of fund and wanted to understand which class of funds better perform in term risk adjustment, selection and timing the market. The study analyzed the data covering period from 2011 to 2019. We employed Asset pricing models i.e. CAPM and Fama French-3 factor model to analyze the funds risk adjusted performance and TM model to analyze the funds, selection and timing abilities.

Findings of the paper suggest that on overall basis conventional fund outperform its counterpart. Furthermore, the result posits that Conventional fund have better selection and timing ability than its counterpart. One reason of the underperformance of Islamic funds in competing to the conventional portfolio is that Islamic funds have some constraints and impotent to invest in non-Islamic businesses. Therefore, it can be argued that conventional funds enjoy the freedom in the selection of securities for investment and thus have the opportunity for better performance.

This study provides practical implications for investors, asset management companies and academicians. This research will benefit the AMCs in Pakistan to gain trust and confidence of investors for investment in their portfolio. The study suggests that equity and income funds have witnessed as being a risky fund’s portfolio for Islamic as well as Conventional funds. The study has policy implications for investors and academicians. This research, if uses advance performance measures; such as Fama French three factors model, Carhart four factors model and Fama French five factors model would be an addition to the current literature, and a comparative study on Pakistani and Malaysian funds if conducted for using the same estimation techniques will be a quality novel research work in future. Moreover, a study comparatively analyzing the open-ended mutual funds’ performance of various Islamic countries in Asia will be a unique robust study.

### REFERENCES

Abdel-Kader, M., Qing, K.Y. (2007), Risk-adjusted performance, selectivity, timing ability, and performance persistence of Hong Kong mutual funds. Journal of Asia-Pacific Business, 8(2), 25-58.

Abdelsalam, O., Fethi, M.D., Matallin, J.C., Tortosa-Ausina, E. (2014), On the comparative performance of socially responsible and Islamic mutual funds. Journal of Economic Behavior Organization, 103, S108-S128.

Afza, T., Rauf, A. (2009), Performance evaluation of Pakistani mutual funds. Pakistan Economic Social Review, 47(2), 199-214.

Barry, E.F. (1998), Method and Apparatus for Improving Object Selection on a Computer Display by Providing Cursor Control with a Sticky Property. United States: Google Patents.

Black, F., Jensen, M.C., Scholes, M. (1972), The capital asset pricing model: Some empirical tests. In: Studies in the Theory of Capital Markets, Vol. 81. New York: Praeger. p79-121.

Carhart, M.M. (1997), On persistence in mutual fund performance. The Journal of Finance, 52(1), 57-82.

Chang, E.C., Lewellen, W.G. (1984), Market timing and mutual fund investment performance. Journal of Business, 1984, 57-72.

Chen, C.R., Stockum, S. (1986), Selectivity, market timing, and random beta behavior of mutual funds: A generalized model. Journal of Financial Research, 9(1), 87-96.

Chen, D., Ainsworth, A. (1992), Glucan administration potentiates immune defence mechanisms of channel catfish, Ictalurus punctatus Rafinesque. Journal of Fish Diseases, 15(4), 295-304.

Chen, Y., Ferson, W., Peters, H. (2010), Measuring the timing ability and performance of bond mutual funds. Journal of Financial Economics, 98(1), 72-89.

Cici, G., Gibson, S. (2012), The performance of corporate bond mutual funds: Evidence based on security-level holdings. Journal of Financial Quantitative Analysis, 47(1), 159-178.

Derigs, U., Marzbann, S. (2009), New strategies and a new paradigm for Shariah-compliant portfolio optimization. Journal of Banking Finance, 33(6), 1166-1176.

Elfakihani, S., Hassan, M.K., Sidani, Y. (2005), Comparative Performance of Islamic Versus Secular Mutual Funds. Egypt: Paper Presented at the 12th Economic Research Forum Conference in Cairo.

Elton, E.J., Gruber, M.J., Blake, C.R. (2003), Marginal Stockholder Tax Effects and Ex-dividend Day Behavior-Thirty-Two Years Later. Paper Presented at the AFA 2004 San Diego Meetings.

Elton, E.J., Gruber, M.J., Das, S., Hlavka, M. (1993), Efficiency with costly information: A reinterpretation of evidence from managed portfolios. The Review of Financial Studies, 6(1), 1-22.

Factbook, M. F. (2014), Investment Company Institute. In: May.

Filippas, N., Psoma, C. (2001), Equity mutual fund managers performance in Greece. Managerial Finance, 27(6), 68-75.

Francis, J.C., Fabozzi, F.J. (1979), The effects of changing macroeconomic conditions on the parameters of the single index market model. Journal of Financial Quantitative Analysis, 14(2), 351-360.

Gribbitt, M., Titman, S. (1989), Mutual fund performance: An analysis of quarterly portfolio holdings. Journal of Business, 62(3), 393-416.

Hasan, M., Dridi, J. (2010), Put to the test Islamic banks were more resilient than conventional banks during the global financial crisis. Finance Development, 47(4), 46.

Haslem, J.A. (2008), Why do mutual fund investors employ financial advisors? The Journal of Investing, 17(4), 91-94.
Hassan, M.R., Nath, B., Kirley, M. (2007), A fusion model of HMM, ANN and GA for stock market forecasting. Expert Systems with Applications, 33(1), 171-180.

Hayat, R., Kraeusl, R. (2011), Risk and return characteristics of Islamic equity funds. Emerging Markets Review, 12(2), 189-203.

Hendricks, D., Patel, J., Zeckhauser, R. (1993), Hot hands in mutual funds: Short-run persistence of relative performance, 1974-1988. The Journal of Finance, 48(1), 93-130.

Henriksson, R.D., Merton, R.C. (1981), On market timing and investment performance. II. Statistical procedures for evaluating forecasting skills. Journal of Business, 54(4), 513-533.

Huang, J.Z., Wang, Y. (2014), Timing ability of government bond fund managers: Evidence from portfolio holdings. Management Science, 60(8), 2091-2109.

Huhmann, B.A., Bhattacharyya, N. (2005), Does mutual fund advertising provide necessary investment information? International Journal of Bank Marketing, 23(4), 296-316.

Huij, J., Verbeek, M. (2007), Cross-sectional learning and short-run persistence in mutual fund performance. Journal of Banking Finance, 31(3), 973-997.

Ippolito, R.A. (1989), Efficiency with costly information: A study of mutual fund performance, 1965-1984. The Quarterly Journal of Economics, 104(1), 1-23.

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

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

Kothari, S., Warner, J.B. (2001), Evaluating mutual fund performance. The Journal of Finance, 56(5), 1985-2010.

Lee, C.F., Rahman, S. (1990), Market timing, selectivity, and mutual fund performance: An empirical investigation. Journal of Business, 63(2), 261-278.

Low, F.M., Hampton, M.B., Peskin, A.V., Winterbourn, C.C. (2007), Peroxiredoxin 2 functions as a noncatalytic scavenger of low-level hydrogen peroxide in the erythrocyte. Blood, 109(6), 2611-2617.

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, 301.

Nazir, M.S., Nuwaz, M.M. (2010), The determinants of mutual fund growth in Pakistan. International Research Journal of Finance Economics, 54(10), 1051-1060.

Puckett, A., Yan, X. (2011), The interim trading skills of institutional investors. The Journal of Finance, 66(2), 601-633.

Rehman, A., Baloch, Q.B. (2016), Evaluating Pakistan’s mutual fund performance: Validating through CAPM and fama French 3-factor model. Journal of Managerial Sciences, 10(1), 174-182.

Shah, I.U., Iqbal, J., Malik, M.F. (2012), Comparative valuation between Islamic and conventional mutual fund. International Research Journal of Finance Economics, 96(1), 28-34.

Shah, S.A., Hijazi, S.T., Hamdani, N.H. (2005), Performance evaluation of mutual funds in Pakistan. The Pakistan Development Review, 44(4), 863-876.

Shanmugam, B., Zahari, Z.R. (2009), A primer on Islamic finance. In: Research Foundation. Charlottesville, VA: CFA Institute.

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

Sipra, N. (2006), Mutual Fund Performance in Pakistan, 1995-2004. Centre for Management Economic Research. p1-14.

Treynor, J. (1965), How to rate management of investment funds. Harvard Business Review, 43(1), 63-75.

Treynor, J., Mazuy, K. (1966), Can mutual funds outguess the market. Harvard Business Review 44(4), 131-136.