

EXAMINING THE RELATIONSHIP BETWEEN FUND SIZE AND FUND PERFORMANCE OF MUTUAL FUNDS IN PAKISTAN

Yasir Alam^{*1}, Muhammad Faheem Jan², Dr. Nisar Khan³, Umar Waqas Khattak⁴,
Saad Ahmad⁵

Received: 26 October, 2023 Revised: 20 December, 2023 Accepted: 25 December, 2023 Published: 31 December, 2023

ABSTRACT

This study aims to evaluate the performance of Islamic vs conventional equity funds over seven years, from 2012 to 2018, to provide insights for small investors seeking investment opportunities in the capital market. The study utilizes the FAMA French 3-factor model as a measurement tool to evaluate the performance of mutual funds. The dataset consists of daily data from 35 Pakistani open-ended equity mutual funds traded in the MUFAP. Among these funds, 22 are considered conventional equity funds, while 14 are Islamic equity funds. The findings reveal that the FAMA French 3-factor model yields favorable results for two factors considered. Specifically, HML and Market factors demonstrate positive outcomes, indicating promising performance. However, the SMB factor does not yield the desired results. These contrasting outcomes suggest differences between Islamic and conventional equity funds, most notably in their performance as measured by the FAMA French 3-factor model. The implications of these findings are significant for both investors and fund managers, as they highlight the need for a careful evaluation of fund characteristics and performance metrics when making investment decisions. Therefore, it is recommended that investors consider these factors in their decision-making process to optimize their investment outcomes.

Keywords: Islamic Mutual Funds, Conventional Mutual Funds, FAMA French 3 Factor Model, Fund Performance, Equity Funds

INTRODUCTION

Mutual funds serve as investment schemes where funds are pooled from investors and allocated across various securities, including bonds, stocks, and money-market instruments, to reduce risks and maximize returns (Shah, 2017). These funds play a crucial role in a country's capital market by channeling the savings of households and small investors into profitable business avenues such as bonds, stocks, and similar assets. Essentially, mutual funds operate as assets management companies (AMCs) that manage the funds contributed by individual and institutional investors, investing them in diverse securities. The primary purpose of mutual funds is to alleviate the challenges faced by small investors who may need more information, investment skills, and risk tolerance by enabling them to invest their savings in profitable portfolios (Shah, 2017). In this way, mutual funds bridge the gap between investors and the complexities of the market, facilitating access to investment opportunities for individuals and institutions alike.

Mutual funds were initially inceptioned in the Netherlands in 1774 due to a significant decline in their banking sector. Following suit, North America embraced the concept in 1924, and since the 1980s, mutual funds have gained prominence as a substantial investment pool worldwide (Shah, 2017). Pakistan introduced its first mutual fund in 1962, known as the Investment Corporation of Pakistan (ICP), which was later publicly offered as the National Investment Trust (NIT) in 1966 (Shaikh et al., 2019). The sector of mutual funds in Pakistan is regulated by the Mutual Fund Association of Pakistan (MUFAP). Over the past decade (2003 to 2014), the Pakistani mutual fund industry has witnessed significant growth, with the assets under management (AUM) of management companies reaching Rs. 456 billion in June 2014, compared to Rs. 51 billion in June 2003 (Arshad et al., 2017). As of June 2017, 233 funds were operating under 20 asset management companies, with the AUM standing at Rs. 622.35 billion, representing a 27% increase from the previous year (Asad et al., 2019).

Usually, mutual funds can be classified into two major categories, namely open-ended and closed-ended, and these funds are further classified into several categories, namely shariah compliant funds, fixed income schemes, money market funds, asset allocation funds, equity funds and balanced funds (Bessler et al., 2018). The evolution and diversification of mutual funds in Pakistan demonstrate their growing significance as a famous investment avenue within the country's financial landscape.

Islamic and Conventional Funds

Islamic equity funds, which adhere to Shariah and legal standards, have been found to perform well and even outperform conventional mutual funds during financial crises and bullish periods, as they are considered more risk inclined (Fan, 2018; Fatima & Haroon, 2018; Hussain, 2017). In Pakistan, both Shariah-compliant and conventional funds are traded on the MUFAP, with the industry consisting of 20 asset management companies offering 200 different mutual funds valued at \$4.329 billion (Rehman & Baloch, 2016). The first Shariah-compliant mutual fund, Al-Meezan Mutual Fund, was established in 1995, but the valuation of its assets still lags behind conventional mutual funds, currently standing at approximately \$1.47 billion (Rehman & Baloch, 2016). Islamic mutual funds growth gained momentum after the liberalization of the industry in the 1990s, catering to the demand for innovative yet Shariah-compliant investment instruments (Ahmad et al., 2017). The conventional mutual fund industry in Pakistan has gained significant recognition globally, with 14 funds from Pakistan ranking among the top hundred equity funds based on returns, including Golden Arrow Selected Stock Fund (GASF) and Safeway Mutual Fund (Alaabed et al., 2019). Performance measurement tools such as the CAPM and Fama-French models, which consider factors like size, value, and investment, have been used to assess mutual funds' performance in Pakistan (Iraj & Ali, 2019; Baloch & Rehman, 2016; Ielasi et al., 2018; Koutsokostas & Papathanasiou, 2017). These models shed light on the association between risk and expected return, with size and value factors significantly explaining Pakistani mutual fund returns (Baloch & Rehman, 2016).

Significance of the Study

The present study aims to investigate the influence of the size of the fund on mutual fund performance, with a particular focus on both conventional and Islamic funds dealing with MUFAP. Pakistan's mutual fund sector has attained substantial focus worldwide and has observed substantial increases in recent savings mobilization. Furthermore, the market of Islamic mutual funds has attained identification because of the offering's availability from big asset management organizations like UBL and Al-Meezan mutual funds. Although besides this improvement, the industry of mutual funds in Pakistan still needs to catch up to the developed economies. Hence, this study is significant in shedding light on mutual fund performance in Pakistan, including conventional and Islamic funds, and exploring the influence of fund size on their performance.

Literature Review

Fund Size and Fund Performance

Koutsokostas, Papathanasiou & Baloch (2019) conducted a study on US-based open-end mutual funds from 1954 to 1963 and found that the sample funds had a lower Sharpe ratio than the benchmark. He also suggested that fund performance is not significantly related to fund size, but well-performing funds tend to have lower expense ratios. More considerable funds enjoy economies of scale, spreading their fixed costs over a more extensive net asset base and providing opportunities for fruitful investments that smaller funds may lack (Lam, 2005). Indro et al. (1999) investigated the influence of fund size on fund performance and found a significant negative relationship. Ferris & Chance (1991) also observed a negative relationship between fund performance and size. Chen et al. (2004) examined US equity mutual funds and revealed an inverse connection between the performance of funds and size, primarily due to liquidity issues. However, other studies such as Robert (1988), Afza & Rauf (2009), Sevick and Tufano (1997), and Elton et al. (2012) observed a direct linkage between the size of the fund and performance, attributing it to cost advantages and economies of scale. Afzal & Rauf (2009) studied the performance of open-end funds from 1999 to 2006 and found that previous performance, fund size, and expense ratio insignificantly influenced fund performance.

Nawaz & Nazir (2010) investigated Pakistani mutual funds and found that management fees and fund size

positively influenced fund-flow performance. Sirri & Tufano (1998), Lynch & Musto (2003), and Khorana (2001) found that past performance affects fund inflows and outflows. Kothari and Warner (2001) applied the Fama-French three-factor and Carhart four-factor models and concluded that the three-factor model performed better. Furthermore, Mallin et al. (1995) developed the matched-pair technique, and Henriksson & Merton's (1981) model was used to measure timing ability. Cross-sectional analysis revealed that ethical and non-ethical funds had similar returns, and no market timing ability was observed. Management fees were found to be a significant variable in the Jensens measure, while book/market equity and tilts on HML represented relative distress and earnings levels (Fama & French, 1995).

Lewis & Mackenzie (1999) conducted a study on ethical investing and found that ethical investors were willing to sacrifice financial requirements to address their ethical concerns. Dubofsky (2010) reported that outflows or inflows could harm the performance of short funds due to abrupt transaction costs and anticipated flows. Several studies reported a negative relationship between fund performance and manager changes (Kostovetsky & Warner, 2015; Gallagher & Nadarajah, 2004; Chevalier & Ellison, 1999; Khorana, 1996); however, Luther et al. (1992) examined trust and ethics and found that the market index outperformed due to ethical considerations. Rakowski (2010) found that funds with unpredictable outflows underachieve those with less volatility, contradicting Berk & Green (2004), who suggest that withdrawals can benefit underperforming funds. The outcomes can be explained by factors such as anticipated manager strategy changes, the firing of poorly performing managers, the disposition effect, and investor inactivity. Nafees et al. (2011) reported that mutual funds perform lower than the portfolios in the capital market of Pakistan. Mirza & Mahmud (2011) evaluated the performance of Pakistani mutual funds from 2006 to 2010 using excess returns and benchmark evaluation. Luckoff (2011) also reported that previous performance could not be considered a precise indicator for measuring future performance while utilizing Fama French and Carhart's three-factor and four-factor models. Bangash (2012) examined the impact of fees and expenses on the performance of European mutual funds and found a significantly negative relationship between fees

charged and fund performance. Other studies explored the connection between turnover ratio and risk-adjusted performance, risk and pay-performance sensitivity, fund size and performance, macroeconomics and mutual fund performance, and the impact of governance factors on mutual fund performance in different contexts.

Equity Mutual Funds

Sharmeen, Salim, and Takibur (2010) assessed Bangladeshi equity mutual fund performance using a risk-return model and found that the performance of equity funds could be more stable over time. Grima, Pace, and Hili (2016) examined the performance evaluation of equity mutual funds invested in the US, emerging markets, and European equity funds. They collected data from 137 equity funds from 2004 to 2014 and applied a regression model, concluding that significant equity funds outperformed small and medium-sized portfolios. They also found that high-risk funds generated high returns, and investors in emerging markets were willing to accept high risk for the potential of high returns. Deb (2019) investigated the downside risk disclosure of Indian equity funds using the Value at Risk (VAR) measurement and found that Indian equity mutual funds also exhibit reasonable downside risk.

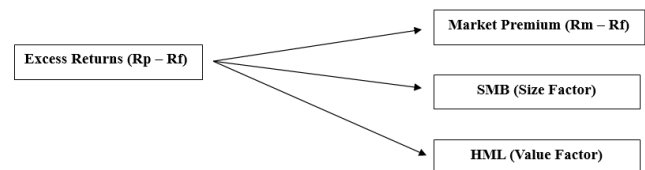
Conventional Vs Islamic Mutual Funds

Carhart (1997) empirically examined the US fund market and found a negative relationship between fund returns and fund turnover. Gregory et al. (1997) used a matched pair approach to analyze 18 UK ethical and 18 conventional funds and concluded no significant difference in returns between the two samples. Cai et al. (1997) applied two-factor and three-factor models and found that the market factor had a more significant impact on fund returns than the size and value factors. Arshad (2013) determined that fund characteristics significantly impact fund returns, while Kostovetsky and Warner (2015) argued that fund flows increase after a manager change. The Fama and French model introduced the three-factor model, which improved the explanatory power of the CAPM. They found that changes in excess portfolio returns were not well explained by portfolio and market returns, and they also did not support the predicted positive relationship between market risk and average stock returns. The Fama and French model suggested that portfolios based on book-to-market, earning-to-price, and market

capitalization factors provide better insights into excess returns. Hamilton et al. (1993) compared screened funds and found no difference in average return, while Fama & French (1993) discovered that size and value factors significantly affect fund performance. They developed a three-factor model for evaluating mutual fund performance, which revealed that the value and size factors had a more significant impact on returns than the market factor. Hudson (2005) found that ethical investors' actions did not impact the shock yield market returns and ethical firms' share prices. Bauer et al. (2005) analyzed an international database of mutual funds. They discovered no significant differences in risk-adjusted returns between conventional and ethical funds, although there was a catching-up phase before ethical funds delivered comparable financial returns. Bello (2005) compared conventional and socially responsible (SR) funds and found no significant differences in performance measures, rejecting the assumption that ethical screening affects diversification and overall performance. Studies by Sidani, Hassan, and Elfakhani (2006) and Hassan, Rubio, and Merdad (2012) confirmed that Islamic mutual funds were similar to conventional funds' performance. However, they provided hedging advantages during market declines. Bris et al. (2007) found that fund closures were often driven by new money inflows and a focus on investing in small companies. Abdullah et al. (2007) compared Islamic and conventional unit trust funds in Malaysia and found that Islamic funds performed better in market declines but slightly underperformed the benchmark index. Coval and Stafford (2007) highlighted the risk of large outflows leading to liquidity-motivated fire sales and distorting fund performance. Wilson and Pollet (2008) investigated the effects of fund size on mutual funds and found evidence of flaws in scaling. Other studies (Renneboog et al., 2008a; Renneboog et al., 2008b; In et al., 2014; Das and Rao, 2014) confirmed Bello's findings on the performance of SR funds. Dangi et al. (2008) predicted capital outflows before manager replacement for underperforming funds. Rezac, Hoepner, and Rammel (2009) analyzed the performance of Islamic equity mutual funds and found that some underperformed benchmarks, particularly in Western countries, while Gulf Cooperation Council and Malaysian funds did not significantly underperform. Mansor and Bhatti (2009) observed that Islamic funds were more minor than conventional funds. Alam and Rajjaque (2010)

found that Islamic portfolios underperformed in the Euro market due to lower leverage in the bull market. Mirza and Mirza (2011) studied Pakistan's mutual fund performance. They found that Islamic funds demonstrated more robust growth than income funds, while conventional funds had negative excess returns due to high T-bill rates and an underdeveloped bond market. The decision-making power of investors between Islamic and conventional funds may differ due to religious and moral considerations (Renneboog et al., 2006; Bollen, 2007). Investors in Islamic funds may be willing to sacrifice potential profits from conventional funds due to their religious or moral values.

Theoretical Framework



Research Methodology

The research methodology used in this study involved quantitative analysis and employed the Fama and French 3-factor model to measure mutual fund performance. The data collected focused explicitly on equity funds traded by the Mutual Fund Association of Pakistan (MUFAP) over seven years. The research utilized pooled OLS and fixed effects models for data analysis, encompassing aspects such as research design, data collection, sample selection, and measurement of variables. Secondary data was collected from various sources, including the MUFAP, Business Recorder, and Pakistan Stock Exchange (PSX) websites. The study examined 35 open-ended equity funds, comprising 21 conventional and 14 Islamic funds, out of the 274 open-end funds operating in Pakistan. Net asset value (NAV) data was collected from the MUFAP database daily and transformed into monthly figures. Monthly T-bills rates were obtained from Business Recorder and merged with the mutual fund data, using these rates as a proxy for risk-free rates. Additionally, monthly data on share prices and several shares from the PSX 100 index were collected from Business Recorder to calculate HML and SMB factors and link them to stock financial data.

Variable Measurement

Dependent Variable

The excess return of the portfolio ($R_p - R_f$) is the dependent variable. Excess return is that return which is earned by the stock. Excess returns differ between the portfolio's return and the risk-free rate. The excess portfolio return is the return which is earned by the stocks. It is also known as Alpha.

Independent Variables

The excess return of the market (market risk premium), value factor (HML) & Size factor (SMB) are the independent variables.

Excess Return of Market

The market's excess return is the difference between the market return and the risk-free rate. At the same time, the size factor (market capitalization) is the difference between the small and extensive stocks (SMB) returns. Moreover, the value factor (Market to book) is the difference between the return of the High B/M and the return of Low book to market (HML). This model is tested by EGB (2004) and Verbeek & Huiji (2007) in developing countries to evaluate mutual-fund performance. At the same time, Baloch & Rehman (2016) tested the same model in Pakistan. To calculate the excess return of the market: the return of the market minus the risk-free rate.

Portfolio Formation

All the listed stocks on PSX 100 index are allocated based on Market capitalization and M/B ratio. Market cap is divided into small and extensive portfolios. The stocks whose market capitalization is above the median are considered extensive stocks (B), and those whose market capitalization is below the median are considered small stocks (S). Moreover, all these stocks are divided into three portfolios: High, Medium & Low B/M ratios based on B/M equity each year. These stocks are divided based on their breakpoint, which means the top 30% of stocks are considered low, the Middle 40% as Medium, and the Bottom 30% as High.

Moreover, after that, the study created six monthly portfolios; the portfolio is the intersection of 2 sizes (Small & Big) and three value portfolios (High, Medium & Low). Furthermore, these six portfolios are (S/H, S/M & S/L and B/H, B/M & B/L). Moreover, all the portfolios are made yearly.

Return of Portfolio

The portfolio return refers to the (gain or loss) or measures the individual stock's return. The return of the individual stocks is calculated as follows:

$$R_{it} = \ln(P_t / P_{t-1})$$

While P_t & P_{t-1} , this is the closing price on the day t & $t-1$. The study used the above formula to calculate the individual stock return and the market portfolio return. For the calculation of market portfolio return, the study used the market's historical data.

Estimation of SMB

$$SMB = 1/3 \cdot (SL + SM + SH) - 1/3 \cdot (BL + BM + BH)$$

Estimation of HML

$$HML = 1/2 \cdot (SH + BH) - 1/2 \cdot (SL + BL)$$

Statistical Model and Analysis

Many researchers, Huiji & Verbeek (2006) and EGB (2004), used this model to study the performance evaluation of mutual funds.

$$(R_i - R_f) = \alpha_i + \beta_1 (R_m - R_f) + \beta_2 (SMB) + \beta_3 (HML) + \epsilon_i$$

$R_i - R_f$ is the dependent variable which represents the excess portfolio return. $(R_m - R_f)$ show the market premium, SMB represent the size premium, and HML represents the value premium; these three are the independent variables. While α is the intercept, this study used different models. First, to check heteroskedasticity, the correlation coefficient matrix, Fixed effects model and Durbin Watson statistics were used.

Heteroskedasticity Test

Basically, Heteroskedasticity means the error variance is not constant for whole individual in the sample.

Correlation Analysis

Correlation coefficient is used to measure that how strong connection between the two variables.

Durbin Watson Test

Durbin Watson statistics is for to check autocorrelation. The Durbin Watson value is always between 0 and 4. The value of 2 it means there is no autocorrelation show in the sample. When the value is from 0 and less than 2 it means that there is positive autocorrelation and when the value is 2 to 4 it shows that there is negative autocorrelation in the sample.

Findings & Discussion

This study used the Fama & French model to measure the performance of mutual funds. First, the study has applied the pooled Ordinary Least Square (OLS) model. In this OLS model, the result is incorrect, which means the Heteroskedasticity shown in this model is because the R-square is too low, i.e. 0.045651 is insignificant. Also, the F-statistics is insignificant; the F-statistics P-value is 1.51e-29. Moreover, the study runs the white test for (heteroskedasticity) correction. In the white test, the null hypothesis is not present, which means the

model is unhealthy and presents heteroskedasticity; the error variance is not constant among the individuals in the sample.

Heteroskedasticity Test

The result for the white test is that the P-Value for heteroskedasticity in this test is **0.001854**, it is insignificant, and the p-value is inferiority **0.05**. So, we will reject the null hypothesis, which means it is wrong because the model affects present heteroskedasticity, which means the error variance is not constant.

Table 1. Heteroskedasticity Test

Variables	Coeff	Std. Err.	t-stats	Sig.
Const.	185453	9983.22	18.58	6.54E***
SMB	-61687.6	86621.5	-0.7122	0.4764
HML	185900	73973.5	2.513	0.012**
MarketERRmtRft	-1120.29	535.263	-2.093	0.0364**
sq_SMB	-61433.4	32109.2	-1.913	0.0558*
X2_X3	-5206.33	2864.6	-1.817	0.0692*
X2_X4	36.8229	1955.71	0.01883	0.985
sq_HML	2138.56	937.31	2.282	0.0226**
X3_X4	-3597.59	1437.64	-2.502	0.0124**
sq_MarketERRmtRft	7.73115	6.07464	1.273	0.2032
Summary Statistics				
Unadj. R-Sq.	0.008931			
Test stats. TR ²	26.256663			
Sig. P(Chi-Sq (9) > 26.256)	0.001854			

Correlation Analysis

The table of the Correlation matrix indicates that there are relationships between independent variables. Calculate the correlation matrix to check the multi-collinearity between independent variables. The above table 2 shows that there is no multi-collinearity between the independent variables. The table indicates that the correlation coefficient between HML & market premium is 0.1497, which means it is free from multi-collinearity. The correlation coefficient between market premium & SMB is 0.1497, and the correlation coefficient between market premium & HML is 0.1487, so there is no multi-collinearity among the variables because the correlation coefficient between the variables is less than 0.80. As per Cramer & Bryman (2001), multi-collinearity among two variables occurs if the correlation value exceeds 0.80.

Table 2. Correlation Analysis

Variables	SMB	HML	MarketERRmtRft
SMB	1		
HML	0.1497	1	
MarketERRmtRft	0.1432	0.1487	1

Fixed Effect Model

Table 3 above shows the results of the fixed effect model and the Hausman test application on the models to show that the model will be the best for analysis by rejecting the null hypothesis through significant Chi-square p-value. The table shows the result of Fama and French three factors model to assess the variance in the dependent variable through independent variables. The Rp-Rf is the dependent variable in this table, whereas the SMB, HML and Market ERmtRft (Rm-Rf) are the independent variables. The table results indicate that the p-value

of SMB (size factor) is insignificant 0.2349 because it is more than its significant level, 0.05. The p-value of HML (Value factor) and Market premium are significant. Both p-values are 0.0131 and <0.0001, respectively, and the p-value of both are below 0.05. Many researchers, Huiji & Verbeek (2006) and EGB (2004) used Fama & French 3 factors model for the studies of performance evaluation of mutual funds. The above table shows the R-square value of 0.376, which shows that 38 per cent effects on the dependent variable (Rp-Rf). The F= 47.22, and the p-value (F) is 6.4e-265, which means that the p-value (F) is significant and is less than its significant level. So it means that the model is statistically significant.

Table 3. Fixed Effect Model

Variables	Coeff.	Std. Err.	t-Stats	Sig.
Const	408.845	11.8951	34.37	0.0001***
SMB	12.3823	10.4224	1.188	0.2349
HML	3.11965	1.25724	2.481	0.0131**
MarketERRmtRft	3.36469	0.249846	13.47	0.0001***

Summary Statistics

Mean Dep Var.	551.2561	SD Dep Var.	403.7898
SSR	2.99E+08	SE Regr.	321.0515
R-Sq.	0.375782	Within R-sq	0.068149
F(37, 2902)	47.2166	P-value(F)	6.40E-265
Log Like.	-21121.06	AIC	42318.13
SC	42545.6	HQ	42400.03
Rho	0.198608	DW	1.584988

Durbin Watson Test

So, in this model, the Durbin-Watson value is 1.56. It means there is positive autocorrelation in the error term in the sample, and the p-value for Durbin Watson is 2.10386e-014. It is less than its significant level, so reject the null hypothesis at a 5% significant level.

Table 4. Durbin Watson Test

Test	Score
Durbin Watson Stats.	1.58499
P-Value	2.10E-14

Conclusion

Mutual funds are a scheme of investment in which the funds are collected from the investors and invested in various securities (like bonds, stocks and money market instruments) to reduce risk and enhance profits & returns (Shah & Bilal, 2011). Mutual funds play a vital role in a country's capital market. This study examined the impact of fund size on the performance of mutual funds in the Pakistani context. The mutual fund industry in Pakistan still has a growing stage. Only conventional and Islamic funds equity funds have been measured in this investigation. In this study, 35 conventional & Islamic equity mutual funds which existed in the period 2012 to 2018 have been selected. I have used the Fama & French (3 factors) model in this study for calculating the famous French model gathering the entire stock exchange stock price data. The study was a quantitative base approach. A fixed-effect model was used in this study. Three independent variables were used in this research that is SMB (Size factor), HML (Value factor) and market premium (Rm-Rf). In the fixed-effect model, the finding indicates that the SMB factor shows an insignificantly negative relationship with Islamic & conventional mutual funds returns, and the HML and market premium show a significant relationship with conventional and Islamic equity funds returns. So, the fama French (3-factor) model indicates that the HML (Value) factor has clarified the variation of mutual-fund returns while the SMB (SIZE) factor does not capture the returns of mutual funds. So, the fama French (3 factors) model concludes that it needs to clarify the Pakistani mutual-funds return significantly because the SIZE factor does not show positive results. These outcomes of the Fama & French (3 factors) model in different from the results of a few prior researchers; they discovered the performance of mutual funds in developed countries and the fund's managers catching well the size & value factor too (Verbeek & Huiji 2006 and EGB 2004).

In the comparative investigations, if directed in Pakistan, are suggested applying the four-factor (Carhart) model and also the Fama & French (5 factors) model to assess and measure the performance of mutual funds and also examine the close-ended mutual funds in a similar report, to get the complete picture of Pakistani mutual-funds industry.

References

- Afza, T., & Rauf, A. (2009). Performance evaluation of Pakistani mutual funds. *Pakistan economic and social review*, 199-214.
- Ahmad, W., Roomi, M. S., Ramzan, M., Zia-ur-Rehman, M., & Baig, S. A. (2015). A comparative study on performance of open and close-ended mutual funds in Pakistan. *International Journal of Accounting and Financial Reporting*, 5(1), 300-314.
- Ahmad, Y., Sun, G., & Khan, W. (2018). The Impact of Fund's Characteristics on Performance: Evidence From Equity Mutual Funds in Pakistan. *City university research journal*, 8(2), 209-218.
- Ahmad, Y., Sun, G., & Khidmat, W. B. (2017). Fund-specific determinants of performance: An empirical study of Islamic and conventional mutual funds of Pakistan. *International Journal of Economics and Financial Issues*, 7(5), 359.
- Alaabed, A., Chowdhury, M. A. F., & Masih, M. (2019). Size, correlations, and diversification: New evidence from an application of wavelet approach to the emerging Islamic mutual fund industry. *Borsa Istanbul Review*, 19, S14-S20.
- Arshad, M., Hasan, E. U., & Rehman, A. (2017). THE IMPACT OF MUTUAL FUND'S CHARACTERISTICS ON MANAGEMENT EXPENSES—EVIDENCE FROM PAKISTANI MUTUAL FUND INDUSTRY. *Pakistan Business Review*, 18(4), 993-1009.
- Asad, M., & Siddiqui, D. A. (2019). Determinants of mutual funds performance in Pakistan. *International Journal of Social and Administrative Sciences*, 4(2), 85-107.
- Bessler, W., Blake, D., Lückoff, P., & Tonks, I. (2018). Fund flows, manager changes, and performance persistence. *Review of Finance*, 22(5), 1911-1947.
- Fan, Y. (2018). Position adjusted turnover ratio and mutual fund performance. *Studies in Economics and Finance*, 35(1), 65-80.
- Fatima, S. Z., & Haroon, M. (2018). Performance Evaluation of Pakistan's Mutual Fund through CAPM and Fama French 3-Factor Model. *Archives of Business Research*, 6(3).
- Gu, Q. (2015). Size and Book-to-Market Factors in Returns.
- Hussain, N. (2017). Mutual Fund Performance, Funds and Country Specific Characteristics: A Comparative Study of Pakistan and India Equity Funds". *Journal of Poverty, Investment and Development*, 37.
- Ielasi, F., Rossolini, M., & Limberti, S. (2018). Sustainability-themed mutual funds: An empirical examination of risk and performance. *The Journal of Risk Finance*, 19(3), 247-261.
- Koutsokostas, D., & Papathanasiou, S. (2017). Mutual funds in Greece: case study of domestic equity mutual funds during a financial crisis. *Managerial Finance*, 43(7), 812-827.
- Koutsokostas, D., Papathanasiou, S., & Balios, D. (2019). Adjusting for risk factors in mutual fund performance and performance persistence: evidence from the Greek market during the debt crisis. *The Journal of Risk Finance*.
- Lam, K. (2005). Is the Fama-French three factor model better than the CAPM?.
- Mansor, F., Al Rahahleh, N., & Bhatti, M. I. (2019). New evidence on fund performance in extreme events. *International Journal of Managerial Finance*, 15(4), 511-532.
- Marzuki, A., & Worthington, A. (2015). Comparative performance-related fund flows for Malaysian Islamic and conventional equity funds. *International Journal of Islamic and Middle Eastern Finance and Management*.
- Nafees, B., Qamar, M. A. J., & Ahmed, N. (2018). Lucrativeness of Islamic vs conventional mutual funds in Pakistan. *Pakistan Business Review*, 19(4), 861-876.
- Nafees, B., Qamar, M. A. J., & Haque, A. (2017). Strategic Conduct and Performance Persistence of Mutual Funds in Pakistan. *Pakistan Business Review*, 19(3), 560-578.
- Naveed, F., Khawaja, I., & Maroof, L. (2020). Are Islamic mutual funds exposed to lower risk compared to their conventional counterparts? Empirical evidence from Pakistan. *ISRA International Journal of Islamic Finance*, 12(1), 69-87.
- Arslan, S. N. A. U. M., Nawaz, M. S., & BASHIR, D. T. (2015). Risk Adjusted Performance Evaluation of Balanced Mutual Fund Schemes in Pakistan. *Risk*, 7(1).
- Nguyen, A. N., Shahid, M. S., & Kernohan, D. (2018). Investor confidence and mutual fund performance in emerging markets: Insights from India and Pakistan. *Journal of Economic Studies*.
- Nguyen, H. T., & Nguyen, D. T. N. (2019). The impact of country-level and fund-level factors on mutual fund performance in Vietnam. *Journal of Economics and Development*, 21(1), 42-56.
- Nicolescu, L., & Tudorache, F. G. (2020). Investment behaviour in mutual funds: is it a knowledge-based decision?. *Kybernetes*, 50(10), 2726-2752.
- 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).
- Noor, A. (2020). The flow-performance relationship: evidence from Pakistani mutual funds. *Journal of Accounting and Finance in Emerging Economies*, 6(1), 145-154.

- Anwar Shah, D., Gull, S., & Parvez, G. S. (2017). Comparative performance analysis of selected Islamic and conventional mutual funds of Pakistan. *Asian Journal of Islamic Finance*, 2(1), 14-29.
- Shaikh, S. A., Ismail, M. A., Ismail, A. G., Shahimi, S., & Mohd. Shafiai, M. H. (2019). Cross section of stock returns on Shari'ah-compliant stocks: Evidence from Pakistan. *International Journal of Islamic and Middle Eastern Finance and Management*, 12(2), 282-302.
- Alwi, S., Ahmad, R., Hashim, I. Z. A., & Naim, N. M. (2019). Investigating the Islamic and conventional mutual fund performance: Evidence from Malaysia equity market. *Journal of Modern Accounting and Auditing*, 15(7), 371-384.
- Tariq, M., & Ehtesham, F. (2018). INVESTIGATING THE NEXUS BETWEEN MUTUAL FUND RETURN AND STOCK MARKET PERFORMANCE—EVIDENCE FROM PAKISTAN STOCK EXCHANGE. *IBT Journal of Business Studies (JBS)*, 1(1).
- Zeeshan, M., Han, J., Rehman, A., Saleem, K., Shah, R. U., Ishaque, A., ... & Hussain, A. (2020). Conventional mutual funds out perform Islamic mutual funds in the context of Pakistan. A myth or reality. *International Journal of Economics and Financial Issues*, 10(4), 151.

