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Performance of Islamic and Conventional Mutual Funds in Pakistan: Evidence from Open Ended Mutual Funds

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ABSTRACT

Mutual fund is a reliable investment opportunity for investors who have little knowledge or skills of investing in the capital market. This research investigated performance of 18 Islamic sharia compliant funds and 52 conventional funds, both categories involve open ended mutual funds from 2017-2018. My study is based on survivorship bias free analysis, which involve the funds that are currently operating in Pakistan and dead funds were not taken into consideration. Cross section-based analysis was observed. The data was collected from the annual reports of mutual funds and MUFAP. Correlation and regression analysis were done with the evaluation of ANOVA and descriptive statistics for the data assessment of the research. Study concluded that conventional funds, being more diversified show better results than the Islamic funds. Determinants like expense ratio and management fee have a significant impact on fund return. Determinants like fund age, NAV and fund size have insignificant impact on fund returns. The research suggests that investor should maintain a harmony between the variables in order to maximize his returns.

Keywords:
Fund return, fund age, fund size, management fee, NAV, expense ratio, correlation and regression analysis.

I. Background

Open Ended Investment companies, also known as Mutual funds pool money from individuals and organizations to keep their money invested in stocks, securities and other assets in diversified industrial sectors. These are security of investment which allows investors to transfer money to the one who are notable in managing their funds (Mobius, 2007). Investors can buy newly issued shares at the NAV. In open ended fund schemes, investors can redeem their shares and send them back to the fund at NAV. Mutual funds were introduced in 1962.

The trade body that manages the multi billion rupees assets in Pakistan is the MUFAP (Mutual Fund Association of Pakistan). It regulates the assets under management. In Pakistan the majority of mutual funds are open ended that are not traded in the secondary market such as PSX. According to the regulations, an independent trustee should be registered with the SECP who the custodian of all mutual fund assets is.

The prediction of mutual fund performance in Pakistan is drawing attention of researchers as well as investors. Research has recognized various measures through which we get the mixed results of the analysis. The purpose to invest in mutual funds is to maximize the fund returns. This purpose can be dissolved by using the forecasts involved in mutual fund performance by using fund return with the various determinants.

II. Literature Review

Mutual Fund is a wide area of research and many analysts have contributed in the area of Mutual Fund performance. This section is based on relevant fact-finding previously done by different researchers.

Naveed and Farooq (2018) conducted the analysis of performance of mutual funds in Pakistan. They have taken the data of 89 mutual funds from 1962 to 2015. Primary data collection source is Mutual Fund Association of Pakistan and State Bank of Pakistan.

In order to find out the beta for specific funds, they used the data of share price return and daily total market return. They used 10 different portfolios including Money Market Funds, Income Funds, Equity and Sharia Funds. Regression model was used where Market premium is taken as independent variable and money market return is dependent variable. Results showed that market risk has insignificant effect on market returns in the case of money market funds, equity and sharia compliant funds. While they also suggested that market risk has significant impact on market return in the case of income funds, asset allocation funds and closed end funds.

Rehman and Baloch (2014) had a quantitative research on factors affecting the mutual fund performance. They gathered the data of 44 open ended mutual funds operating since 2010 to 2014. Model used in the analysis were fixed effect and random effect OLS model. The fixed effect results suggested that all variables have positive effect on the Mutual Fund performance except liquidity and load fee. Random effect was applied which showed almost same results as fixed effect but another Hausman test was conducted and showed the results that the Hausman prob value is less than 5%, showing that the fixed effect model is appropriate instead of random effect because fixed effect model claims that the individual specific effects are correlated with independent variables.

Afza and Rauf (2009) collected sample data of forty-three open ended mutual funds listed on MUFAP. The dependent variable chosen was fund return while the independent variables were asset, expense ratio, turnover ratio, load, 12 B-1 (dummy variable), age and liquidity. They used two models i.e. Philpot model and modified model to calculate the mutual fund returns. So, the findings showed that the performance of these funds is poor. Mutual fund risk adjusted return has a positive relation with expenses, turnover, and age. 12 B-1 fees have significantly positive relationship with the Sharpe ratio in the second model. Thus, Afza and Rauf concluded that investors, before making investment decisions must see the past performance of the fund, fund cash holding level and prefer a fund with 12B-1 plan.

Nazir and Nawaz (2010) also worked out on the determinants of mutual fund growth in Pakistan. Results suggested that asset turnover, family proportion and expense ratio are positively related to growth of mutual funds while management fee and risk adjusted returns are negatively associated with mutual fund growth.

Mahmud and Mirza (2011) examined the mutual fund performance in Pakistan's emerging economy. They analyzed both the bearish and bullish markets. Results showed that Islamic funds have strong growth as compared to conventional funds. Income funds suffered because of underdeveloped bond market. They consistently experienced the negative alphas, so no fund outperformed the market.

Bangash, Hussain and Azhar (2018) worked on performance evaluation of mutual funds in Pakistan. Explanatory variables used were age, size of fund family, number of funds in funds family and beta. The P-value of all variables is less than 5% i.e the level of significance, which showed the abnormality of data. Authors used non-parametric technique of data envelopment analysis in order to find the relative efficiency of mutual funds. Input oriented BBC model was used to measure the efficiency of mutual fund's input variables. 7 out of 43 mutual funds were proved efficient.

Ferreira, Keswani, Miguel and Ramos (2012) did the keen research on the determinants of open end actively managed equity mutual fund performance in different countries. They noticed that mutual funds underperform the market overall. The independent variables used were fund size, fund family size, fund age, expenses, load, management structure, flows and past performance. While dependent variable was fund performance.

Fund size was negatively related to the fund performance in US. Fund family size had positive and notable effect on fund performance in USA and other countries. Fund age had no relation with fund performance, but newer funds are always better in performance than the older funds.

Mahmood and Rubbaniy (2016) also analyzed the US mutual fund sector. The independent variables chosen were liquidity, fund size, returns, expenses, and management fee. So, fund size, liquidity and turnover have positive and notable impact on fund performance. Fund turnover has positive impact on fund performance. Expense ratio had a negative relation on performance. Fund expenses and management fees decreased the returns due to negative relationship.

Choudhary and Chawla (2014) did a short research on selected diversified equity mutual funds

in India. The average returns of mutual funds showed that 75% of diversified fund schemes had higher returns while other showed lower returns. Seven out of eight mutual funds showed higher performance in case of treynor ratio.

Grinblatt and Titman (2012) did a unique research on performance of mutual funds without benchmarks. They took two zero cost portfolios. Findings showed that aggressive growth fund portfolios earned significantly positive risk adjusted returns. They also found positive relationship in growth, growth-income, and venture capital but not with balanced income or special purpose income.

III. Research Methodology

The focus of my research will be on the determinant's performance of Islamic and Conventional Mutual funds in Pakistan for the *time horizon* of 2017-2018. I will use the open-ended Sharia Compliant and conventional mutual fund schemes for examination. Some explanatory variables are selected to make the research more efficient.

3.1 Research Design

My research consists of quantitative analysis based on secondary data. Hypothesis testing will also be involved along with the research objectives and questions. I opted for several independent variables in order to evaluate the fund return of mutual funds.

- Fund size
- Fund age
- Expense ratio
- Management fee

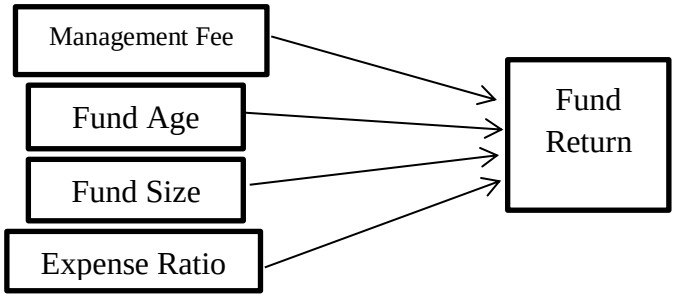

Figure 1: *Conceptual Framework*

The econometric equation is as follows:

$$\boldsymbol{FR_{it} = a + B_1 FA_{it} + B_2 FS_{it} + B_3 MF_{it} + B_4 ER_{it}}$$

Where

FR_{it} = Fund return at time t
a = intercept and b= slope of the regression line
$B_1 FA_{it}$ = fund age at time t
$B_2 FS_{it}$ = fund size at time t
$B_3 MF_{it}$= management fee at time t
$B_4 ER_{it}$= expense ratio at time t

Methods I opted for the analysis are Regression and Correlation with ANOVA and descriptive statistics.

3.2 Research Objectives

- The foremost objective of my research is to comprehend the mutual fund industry
- To understand the performance of open-ended mutual funds
- To evaluate several variables in response with the fund performance
- To work on various techniques in order to get more conclusive results

3.3 Research Questions

Following are the research questions of my analysis.

1. What are the determinants of fund performance of Sharia Compliant Funds in Pakistan?
2. What are the determinants of fund performance of conventional funds in Pakistan?
3. How strongly the fund return is correlated with the independent variables?

3.4 Research Hypothesis

H_1: NAV, management fee, expense ratio, revenue and fund age have an insignificant impact on fund return of sharia compliant funds in Pakistan.

H_2: NAV, management fee, expense ratio, revenue and fund age have an insignificant impact on fund return of conventional funds in Pakistan.

IV. Analysis and Discussion

Analysis of Islamic mutual funds in Pakistan

Table 4.1: *Descriptive statistics*

	Min	Max	Mean	S.D
fund return	-16.15	7.70	3.6067	5.11861
Net asset value	9.99	107.16	75.3463	43.32728
fund age	1.00	11.00	5.7222	3.35727
fund revenue	979000.00	254092000.00	86960561.38	96210379.83
management fee	.00	2.00	1.1250	.46376
expense ratio	.08	2.65	1.5317	.68290

To get the average values of sample portfolios we used descriptive analysis. The table 4.1 elaborates the statistics used in the analysis of 18 Sharia Compliant Funds of Pakistan. If we analyze the range of NAV and fund revenue, 97.17% and 253113000, we will see that these values are large that indicates the greater dispersion in data and their ranges are scattered away from fund return. While other variables show normal dispersion of management fee

showing that as management fee increases with 2% range, the fund return will also increase with 23.85% range. The increase in expense ratio with 2.57 % will cause an increase in fund return with 23.85 % showing significant relationship between funds return and expense ratio. Mean is the standard measure of the middle of distribution, but it does not show accurate results in case of outliers that are NAV and fund revenue. Standard error shows the divergence of sample mean from the actual mean. The expense ratio, management fee and fund age show a slight positive relation with fund return. Standard deviation measures the variability around the average, and we found that if NAV has standard deviation of 43.33%, then the fund return shows the variation of 5.11%around the average. Other variables show slight significant relationship with fund return except fund revenue.

Table 4.2: *Correlation Analysis*

		fund return	Net asset value	fund age	fund revenue	management fee	expense ratio
fund return	Pearson Correlation	1	-.205	.262	.338	-.187	-.426
	Sig. (2-tailed)		.416	.294	.170	.457	.078
	N	18	18	18	18	18	18

In the above table we conducted correlation analysis to inspect how the variables move together. NAV has slightly negative correlation with fund return, that is, if the fund return increases, overall NAV will decrease at-20.5%. Fund age has a minimal positive correlation of 26.2% with fund return, fund return increases as the age increases. 33.8% comparatively positive correlation of revenue with fund return. So alternate hypothesis is accepted in case of fund age and fund revenue. Management fee and expense ratio with -18.7% and -42.6% values show negative correlation with fund return, accepting the null hypothesis. I will interpret that fund age and revenue have a slight significant relationship with fund return while others have a negative relation with fund return. These were proved to be greater than 0.05 (significance level), which means that there is no evidence of significant correlation between the variables of the sample. However, we noticed small positive correlation in p values of age and revenue with returns, but other variables show negative result. So, the findings are unclear.

Table 4.3: *Regression Analysis*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.661[a]	.437	.203	4.57084

Model Summary analyzes the total variation in the dependent variables. It depicts the strength of the relationship between dependent and independent variables. Pearson R value indicates that here is a relationship of positive 66.1% of independent variables with fund return, accepting the alternate hypothesis. R squared value .437 shows that 43.7% of the variance of fund return is somehow explained by the variance in independent variables. As we can notice that adjusted R square is less than the R square with 20.3% value, so we can make it clear that predictors improve this model at less than expected by chance. The sample size fluctuated with 4.57%.

Table 4.4: *ANOVA*

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	194.692	5	38.938	1.864	.175[b]
Residual	250.711	12	20.893		
Total	445.403	17			

The higher the f-value gets, the lower will be the significance score. The significance level here would be interpreted as the difference in the mean value of descriptive statistics is 17.5% significant. Our significance level is above the cutoff point of 0.05 and results are just due to the sampling error and there are no such influences of one variable over another. We will accept the null hypothesis.

Table 4.5: *Regression Analysis*

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	10.723	4.754		2.256	.044
fund age	.847	.449	.556	1.886	.084
fund revenue	-7.275E-9	.000	-.137	-.463	.652
management fee	-2.927	2.454	-.265	-1.193	.256
expense ratio	-4.791	2.087	-.639	-2.296	.040
Net asset value	-.009	.029	-.079	-.322	.753

As far as the p values are concerned, we will see that all of the predictors except expense ratio are greater than the significance level of 0.05. So, we can say that only expense ratio has a significant impact on the constant (fund return) and the null hypothesis is rejected, and expense ratio shows significant relationship with fund return. The unstandardized coefficients mostly show the negative values and we would analyze that when the net asset value, expense ratio, management fee and revenue increases, the fund return will decrease. While if fund age increases, fund return will also increase. Giving the results that older funds perform better. Same is the case with standardized coefficients. Only expense ratio has negative significant impact on fund return.

Table 4.6: *Descriptive Statistics*

	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic
fund return	-19.46	13.50	0.16	8.27
Net asset value	9.26	529.42	91.12	96.50
fund age	1.00	56.00	8.50	8.00
fund revenue	-511712000.0	2479559000.00	83496470.71	391888950.300
management fee	.00	2.00	1.16	0.63
expense ratio	.03	4.21	1.70	1.11

The table 4.6 gives the measures of dispersion. Range, as it used two extreme (maximum and minimum) values. If we analyze the NAV and fund revenue, we will see that these values are very large, increase in fund return of 32.96% causes increase in the range of NAV with 520%. This value is largely deviating from the dependent variable. Range of fund revenue also shows the abnormal value that indicates the greater dispersion in data and their ranges are scattered away from fund return. While the other independent variables show relatively less dispersion. If management fee is increasing with 2 %, the fund return will increase at the range of 32.96. And if expense ratio increases with 4.18% the fund return also increases, showing significant impact of management fee and expense ratio on fund return.

Mean is the standard measure of the middle of distribution, but it does not show accurate results in case of outliers that are nav and fund revenue. Standard error shows the divergence of sample mean from the actual mean. The expense ratio, management fee and fund age show a significant relationship with fund return. The standard deviation measures the variability around the average, and we found that if NAV has a standard deviation of 96.5%, the fund return will vary with 8.27% in relation to that. While the other variables show slight significant relationship with fund return except fund revenue.

Table 4.7: *Correlation Analysis*

		fund return	Net asset value	fund age	fund revenue	management fee	expense ratio
fund return	Pearson Correlation	1	.095	-.269	.116	-.645**	-.739**
	Sig. (2-tailed)		.502	.053	.414	.000	.000
	N	52	52	52	52	52	52

In the table above I conducted the correlation analysis to evaluate how the variables move together. NAV indicating 9.5% value has a positive correlation with fund return, increase in NAV cause mutual funds to earn more fund return greater net asset. Fund age's interpretation is different, it indicates that as the fund age increases fund return will tend to decrease with -26.9%. Fund revenue increases with 11.6% in relation to return, showing positive correlation. While management fee and expense ratio depict the significant relation with fund return. As we see the significant level of NAV, fund age and fund revenue, these values are bit greater than 0.05. But management fee and expense ratio have values less than 0.05 showing significant correlation with the fund return.

Table 4.8: *Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.798[a]	.636	.597	5.25602

Pearson R value of 79.8 % indicates that the increase in one variable cause increase in the other variable. R squared value 63.6% shows that the fund return somehow explained the 63.6 % strength with the independent variables, accepting the alternate hypothesis. Adjusted R square modifies the R square and is adjusted for the predictors in the model. As we can notice that adjusted R square is less than the R square with 59.7% value, so we can make it clear that predictors improve this model at less than expected by chance. The sample size fluctuated with 52.56%.

Table 4.9: *ANOVA*

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2221.208	5	444.242	16.081	.000[b]
	Residual	1270.785	46	27.626		
	Total	3491.993	51			

In this ANOVA table we study the differences in the group means of all samples used. The higher the f-value gets, the lower will be the significance score. The F value would be interpreted as the difference in the mean value of descriptive statistics as 16.08% significant. Our significance level is below the cutoff point of 0.05. So, there is a significant relationship among some of the predictors. We will reject the null hypothesis and accept the alternate hypothesis which is NAV, management fee, expense ratio, revenue and fund age have a significant impact on fund return of conventional funds in Pakistan

Table 4.10: *Regression Analysis*

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	13.721	1.994		6.881	.000
fund age	-.132	.172	-.128	-.766	.448
fund revenue	2.937E-11	.000	.001	.008	.993
management fee	-4.455	1.459	-.342	-3.053	.004
expense ratio	-3.900	.975	-.525	-4.000	.000
Net asset value	-.007	.008	-.078	-.828	.412

As far as the p values are concerned, we will see that management fee is less than significant level of 0.05 showing significant relationship with fund returns. Expense ratio shows no relationship with

fund return. All other predictors are greater than 0.05 so I can say that only management fee has a significant impact on the constant (fund return) and the null hypothesis is rejected. The unstandardized coefficients mostly show the negative values and I would analyze that when the net asset value, expense ratio, management fee, fund age and revenue increases, the fund return will decrease. While if fund age increases, fund return will also increase.

V. Conclusion

Mutual funds provide the better investment choice in case of pooled investments specifically for the investors who do not have enough knowledge about investment. This study was based on the analysis of determinants which affect the performance of Islamic and conventional mutual funds in Pakistan. Correlation and linear regression analysis were done with the ANOVA and descriptive statistics for the data evaluation of the research.

Sharia compliant funds did not show notable results and no significant correlation among variables. Fund revenue and NAV do not have a significant impact on fund return, showing ambiguous results. Fund age, however, have slight significant impact on fund return, which is because older funds perform better, but this is not necessarily true all the time. Expense ratio and management fee have significant impact on fund return.

Conventional funds, being more diversified show better results than the Islamic funds with no diversification. Investors should keep a balance in the investments so that the fund returns are maximized.

These results are aligned with the research of Rehman and Baloch (2014) on "Factors affecting mutual fund performance in Pakistan", study found almost same results of expense ratio, management fee have positive effect on und return while other variables have negative impact on fund return.

5.1 Recommendations for outlook

The equity fund category (both sharia compliant and conventional funds) earned Rs. 270.69 billion, up 37% from last year with income fund category at Rs. 101. 46 billion, down with 20% and money market category at Rs. 77.88 billion, up 40% from previous year.

The future of mutual fund industry lied upon providing the knowledge about mutual fund to the investors across the country. AMC's are providing wide range of mutual and pension funds to meet the risk averseness of investor. Besides mutual funds growth, resolution of tax issues should be practiced in order to remove all the barriers in the investments.

References

Naveed & Farooq, S.U. (2018). Performance evaluation of mutual funds through CAPM model, *Abasyn Journal of social sciences*, 1-7.

Fatima, S. Z., & Haroon, M. (2018). Performance Evaluation of Pakistan's Mutual Fund through

CAPM and Fama French 3-Factor Model. *Archives of Business Rsearch*, 6(3), 18-28.

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

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

Ferreira, M.A., & Keswani, A., & Miguel, A.F., & Ramos, S.B. (2012). The Determinants of Mutual Fund Performance: A Cross-Country Study. *Nova School of Business and Economics, Cass Business School, and Instituto Universita´rio de Lisboa (ISCTE-IUL)*, doi: 10.1093/rof/rfs013. 1-43

Rehman & Baloch, Q.B. (2014). Factors Affecting Mutual Fund Performance in Pakistan: Evidence From Open Ended Mutual Funds. *Abasyn Journal of Social Sciences*, 9(2), 211- 219.

Grinblatt & Titman. (1993). Performance measurement without benchmarks: An examination of mutual fund returns. *The Journal of Business*, 66(1), 47-68

Mahmood & Rubbaniy. (2016). An Analysis of the US Mutual Funds Sector: What Determines Performance? The Lahore Journal of Business, 5(1), 59-74

Nazir & Nawaz. (2010). The Determinants of Mutual Fund growth in Pakistan. *International Research Journal of Finance and Economics*, 54, 76-84

https://www.mufap.com.pk/