PalArch's Journal of Archaeology of Egypt / Egyptology

MUTUAL FUNDS PERFORMANCE RELATIVE TO THEIR BENCHMARK

Liyan Bukhari[1], *Shabir Hakim*[2]

[1,2]Effat College of Business, Effat University Qasr Khuzam Jeddah Saudi Arabia

E.mail: [1]libukhari@effatuniversity.edu.sa [2]shhakim@effatuniversity.edu.sa

Liyan Bukhari, Shabir Hakim. Mutual Funds' Performance Relative To Their Benchmark-- Palarch's Journal Of Archaeology Of Egypt/Egyptology 18(13), 1104-1116. ISSN 1567-214x

Keywords: Mutual Funds, Capital Asset Pricing Model, Performance

ABSTRACT

A mutual fund is a portfolio that is managed by money managers who try to maximize capital gains for investors. This study investigates performance of mutual funds relative to the benchmark or index in Saudi Arabian market. The primary research question is whether mutual funds outperform or underperform the market. This work was carried out using quantitative research method. Six different mutual funds in Saudi Arabia were selected as the test sample, which are Alahli mutual fund, Riyad equity fund, ANB Almubarak fund, Aljazeera GCC income fund, Riyad commodity fund, and Alawwal income fund. The data used were daily and monthly data for the year 2017 and 2018. This work used the capital asset pricing model (CAPM) to describe the relationship between systematic risk and expected return for assets. The key findings of this work have shown that four funds have underperformed the market, even though all four funds have been actively managed. Furthermore, the other two funds that are passively managed have performed in the market.

CCS Concepts

• Information systems→Database management system engines • Computing methodologies →Massively parallel and high-performance simulations.

INTRODUCTION

Modern mutual funds began with the Massachusetts Investors' Trust in Boston in 1924 [1]. The mutual fund is an investment vehicle consisting of money collected from investors for the purpose of investing in instruments or assets [2]. The mutual fund is a portfolio managed by money managers who try to maximize capital gains for investors. Mutual funds can be classified into four main categories; based on fund scheme, based on assets invested in, based on investment objectives, and specialty funds [2]. There are two types of fund

schemes; open-ended, which can be purchased or sold at its net asset value. On the other hand, close-ended funds are traded on the exchange just like stocks [3]. Investors can invest in different assets in a mutual fund, whether it is an equity, debt or hybrid fund. Investment objectives play a crucial role in the selection of a mutual fund [4].

Investors should determine the purpose of investing in such a fund and, most importantly, not ignore the special characteristics of certain mutual funds [5]. Mutual funds units may be purchased or redeemed by investors at their current Net Asset Value (NAV) [6]. The mutual fund has a large number of different securities, which expose the investor to the advantage of diversification at a low price. One of the disadvantages of the mutual fund is the fluctuations in the returns that could depreciate the value of the mutual fund [7].

Analyzing the performance of the mutual fund is an important element in determining its performance and its monetary returns. The research done by Hunter et al. [8] explains the evaluation and performance of mutual funds. The research suggested adding the return of "Active Peer Benchmark (APB)". This approach was supported because of its ability for investors to make investment decisions when selecting mutual funds. Furthermore, the addition of APB significantly affects the differentiation between skilled and unskilled fund managers. Lemeshko and Rejnuš [9], studied the performance assessment of equity mutual funds in emerging-market countries. This work assessed the relative risk-adjusted performance of open-ended equity mutual funds. Results have shown that the share capital industry in emerging economies is relatively small in overall asset management compared to North America and Europe.

Abdelsalam et al. [10] presented a comparison work on socially responsible investment (SRI) mutual funds and Islamic Finance. The results showed that on average, socially responsible investment funds performed better than the Islamic Mutual Funds. Cici et al. [11] presented a work that examined whether mutual fund managers can use their experience and knowledge of a particular industry when managing or selecting an industry's stock for a fund. The results showed that mutual funds managers are best selecting or picking stocks form experience of an industry. Moreno et al. [12] presented a work that examined the management of sub-advised mutual funds. The findings have shown that expensive cooperative agreements, such as co-branding, multi-advisory and performance-based incentives, could reduce company disputes in procurement and shield shareholders from future under-performance.

There are six common measures for the performance of the mutual fund [13]. First of all, Alpha measures the return of a portfolio of mutual funds against a specific benchmark. Second, Beta, which measures investment volatility in the market index. Third is the R-Squared value, which measures the reliability of the beta number. Fourth is the ratio of Sharpe is the measurement of the return of the portfolio against the risk-free return. Fifth is the capture ratio, i.e. the gains or losses of the portfolio compared to the losses and gains of the indices. Lastly, the Standard Deviation compares the closing price per day over a specific period of time [13].

Thus, this work was done to analyze mutual funds performance along with its Alpha relative to the market in Saudi Arabia. The primary research question was whether mutual funds outperform or underperform the market.

METHODOLOGY

The overall methodological approach used is a quantitative method. This quantitative approach was used to assess the performance of mutual funds relative to their benchmark by means of statistical and descriptive analysis. The variables used are standard deviation and mean, skewness, kurtosis, and maximum and minimum. Each measurement indicates different analysis of the same set of data. First, standard deviation measures the volatility of returns among a set of data from its mean (average). Second, skewness is measurement of data symmetry, a symmetrical distribution has a skewness of zero. Third, kurtosis is a measure of outliers in the distribution. Lastly, maximum and minimum are the largest and smallest observation of the sample. Model used is the capital asset pricing model (CAPM), this particular model is used to describe the relationship between systematic risk and expected return for assets. Six different mutual funds in Saudi Arabia were selected, which are Alahli mutual fund, Riyad equity fund, ANB Almubarak fund, Aljazeera GCC income fund, Riyad commodity fund, and Alawwal income fund. The frequency of data of these selected mutual funds is on the daily basis from the beginning of the year 2017 till the end of the year 2018 as well as monthly data for the same years.

Result And Discussion

Descriptive Analysis

Figure 1 shows the fund distribution for Alahli mutual fund. The fund has a mean of 0.024% of the daily return of the fund. The standard deviation of the fund is 0.933 and it is greater than the standard deviation of the index that is 0.835, which shows that the fund is riskier than the market and perhaps indicate a growth of the fund. A leptokurtic kurtosis exist which means extreme values may potentially occur. As for skewness, it is -0.580 which is negatively skewed.

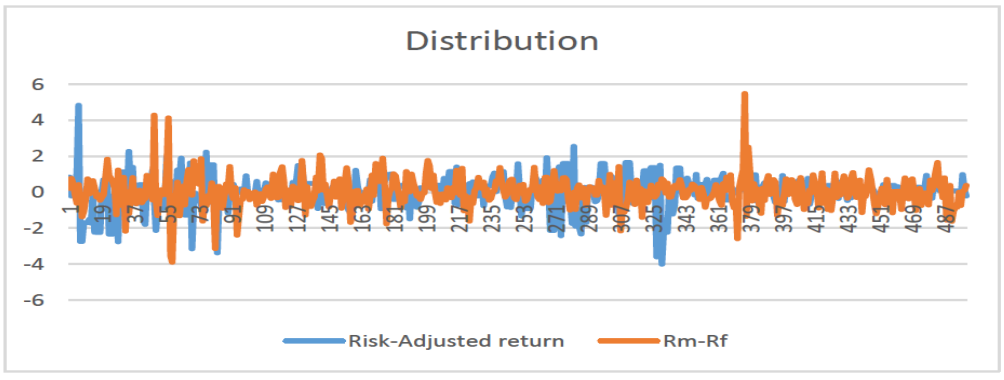

Figure 1. Alahli mutual fund distribution

Figure 2 shows the fund distribution for Riyad equity fund. The fund has a mean of -0.0175% of the daily return of the fund. The standard deviation of the fund is 1.496 and it is greater than the standard deviation of the index that is 0.835, which may indicate a growth of the fund. A platykurtic kurtosis exists where tails are thinner, and distribution is longer with a kurtosis of less than three. As for skewness, it is -0.283 which is negatively skewed.

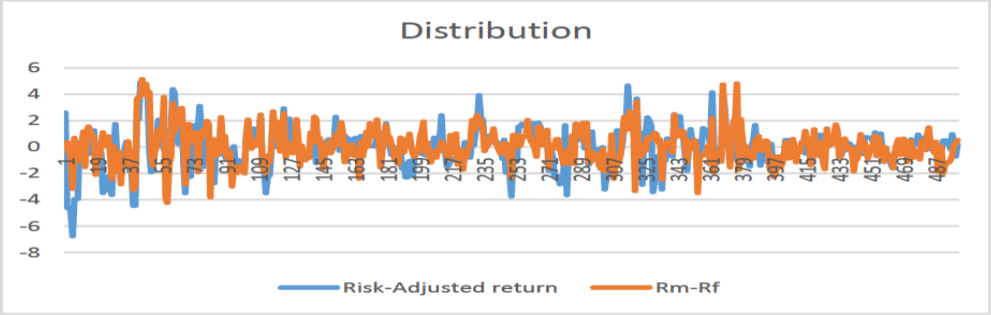

Figure 2. Riyad equity fund

Figure 3 shows the fund distribution for ANB Almubarak fund. The fund has a mean of 0.033% of the daily return of the fund. The standard deviation of the fund is 1.538 and it is less than the standard deviation of the index that is 0.835, which means that the fund is riskier than the index. A leptokurtic kurtosis exist which means extreme values may potentially occur. As for skewness, it is -0.190 which is negatively skewed. For this fund, it is clear how different the return of the fund compared to the return of the market.

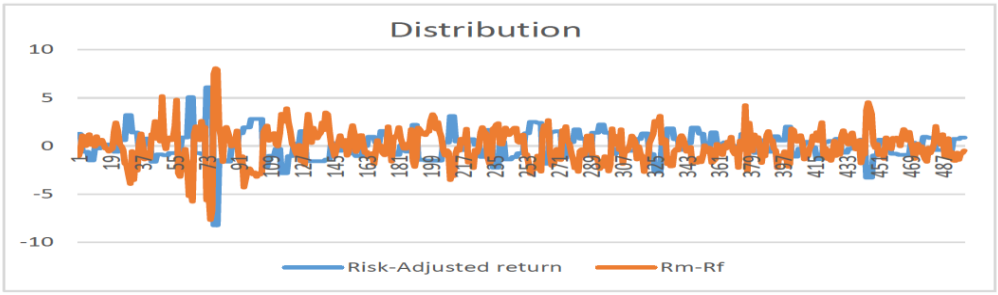

Figure 3.ANB Almubarak fund

Figure 4 shows the fund distribution for Aljazeera GCC income fund. The fund has a mean of -0.0093% of the daily return of the fund. The standard deviation of the fund is 1.0524 and it is greater than the standard deviation of the index that is 0.835, which shows that the fund is riskier than the market and perhaps indicates a growth of the fund. A platykurtic kurtosis exists where tails are thinner, and distribution is longer since it is less than three. As for skewness, it is -0.294, which is negatively skewed.

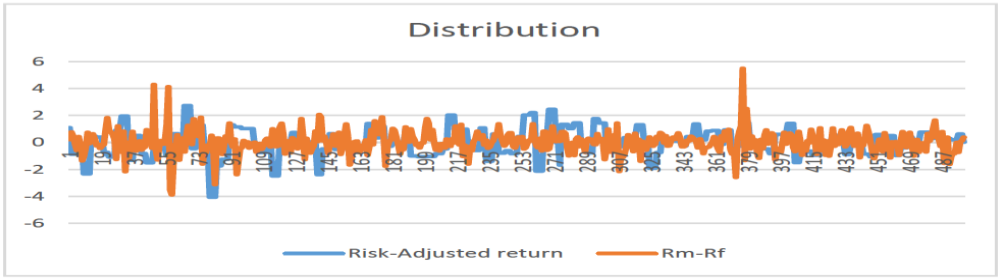

Figure 4. Aljazeera GCC income fund

Figure 5 shows the fund distribution for Riyad commodity fund. The fund has a mean of 0.0021% of the daily return of the fund. The standard deviation of the fund is 0.0057 and it is less than the standard deviation of the index that is 0.835, which means that the fund carries less risk. A leptokurtic kurtosis exist which means extreme values may potentially occur. As for skewness, it is 4.333 which is positively skewed.

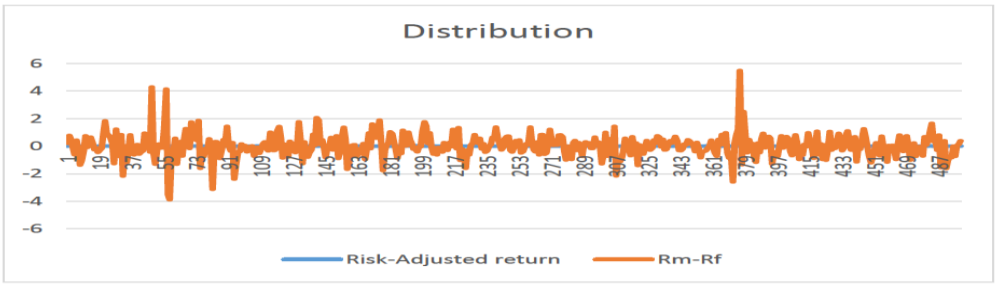

Figure 5. Riyad commodity fund

Figure 6 shows the fund distribution for Alawwal income fund. The fund has a mean of -0.050% of the daily return of the fund. The standard deviation of the fund is 0.696 and it is less than the standard deviation of the index that is 0.835, which means that the fund carries less risk. A leptokurtic kurtosis exist which means extreme values may potentially occur. As for skewness, it is -0.488, which is negatively skewed

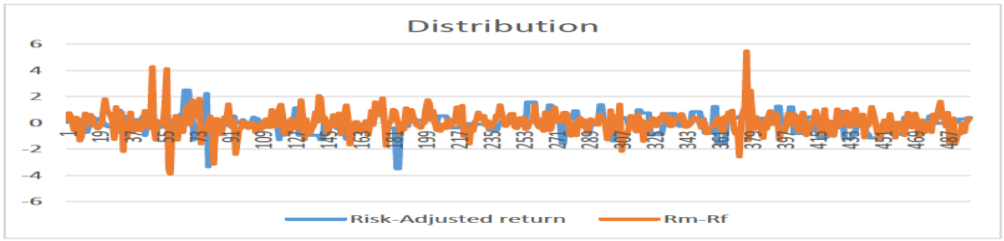

Figure 6. Alawwal income fund

Test Results and Discussion

Table 1 and Table 2 shows the test results for Alahli mutual fund. For the R Square, 2% of the variance dependent variable which return of the fund is explained by the variance in the independent variable which is the return on market portfolio. It also represents the explanatory power of the model. In the

respective of portfolio management, R square is the indicator of the level of diversification in the portfolio. In the case of this fund it is a poorly diversified portfolio. The regression equation is shown as equation 1. Thus, for Alahli mutual fund the regression equation is shown as equation 1

$$Ri = Alpha + B (Rm-Rf)$$

$$Ri = 0.23 + 0.13 (Rm-Rf)$$

The regression of the model (fund) is 0.23 with t-value of 0.32 and p-value 0.75. Because p-value is greater than 0.05, hence the intercept is not statistically significant. In other words, the fund has not been able outperform the market. There was no reward for active management of the fund. The beta coefficient of the market portfolio is 0.13 with a t-value of 0.68 and a p-value of 0.50. The p-value is much higher than the critical value of 0.05, hence the null hypothesis of no impact of market portfolio on returns of fund cannot be rejected.

Table 1. Summary output

Regression Statistics	
Multiple R	0.143764827
R Square	0.020668326
Adjusted R Square	-0.023846751
Standard Error	3.617708193
Observations	24

Table 2.ANOVA

Item	*df*	*SS*	*MS*	*F*	*Significance F*
Regression	1	6.076664253	6.076664	0.464299	0.502731803
Residual	22	287.9318766	13.08781		
Total	23	294.0085408			
	Coefficients	*Standard Error*	*t Stat*	*P-value*	
Inter	0.23	0.741	0.321	0.750842	

cept	8421668	516292	533	
Rm-Rf	0.13777172 3	0.20219061 9	0.681395	0.502732

Table 3 and Table 4 shows the test results for Riyad equity fund For the R Square, 1% of the variance dependent variable, which is return of the fund, is explained by the variance in the independent variable, which is the return on market portfolio. It also represents the explanatory power of the model. In the respective of portfolio management, R square is the indicator of the level of diversification in the portfolio. In the case of this fund it is a poorly diversified portfolio. For Riyad equity fund the regression equation is shown as equation 3.

Ri = 0.027 + 0.097 (Rm-Rf)	(3)

The regression of the model (fund) is 0.027 with t-value of 0.037 and p-value 0.97. Because p-value is greater than 0.05, hence the intercept is not statistically significant. In other words, the fund has not been able outperform the market. There was no reward for active management of the fund. The beta coefficient of the market portfolio is 0.097 with a t-value of 0.037 and a p-value of 0.97. The p-value is much higher than the critical value of 0.05, hence the null hypothesis of no impact of market portfolio on returns of fund cannot be rejected.

Table 3. Summary output

Regression Statistics	
Multiple R	0.102151147
R Square	0.010434857
Adjusted R Square	-0.034545377
Standard Error	3.633239625
Observations	24

Table 4 ANOVA

Item	*df*	*SS*	*MS*	*F*	*Significance F*
Regression	1	3.06233621	3.062336	0.231988	0.634810497
Residual	22	290.4094637	13.20043		

Total	23	293.4717999		
	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	0.027992119	0.744699747	0.037588	0.970355
Rm-Rf	0.097803389	0.203058658	0.481651	0.63481

Table 5 and Table 6 shows the test results for ANB Almubarak fund. For the R Square, 81% of the variance dependent variable which return of the fund is explained by the variance in the independent variable which is the return on market portfolio. It also represents the explanatory power of the model. In the respective of portfolio management, R square is the indicator of the level of diversification in the portfolio. In the case of this fund it is a well-diversified portfolio. For ANB Almubarak fund the regression equation is shown as equation 4.

Ri = -0.037 + 0.78 (Rm-Rf)	(4)

The regression of the model (fund) is -0.037 with t-value of -0.12 and p-value 0.89. Because p-value is greater than 0.05, hence the intercept is not statistically significant. In other words, fund has not been able outperform the market. There was no reward for active management of the fund. The beta coefficient of the market portfolio is 0.78 with a t-value of -0.12 and a p-value of 0.89. The p-value is much higher than the critical value of 0.05, hence the null hypothesis of no impact of market portfolio on returns of fund cannot be rejected.

Table 5 Summary output

Regression Statistics	
Multiple R	0.902787367
R Square	0.81502503
Adjusted R Square	0.806617077
Standard Error	1.421675549
Observations	24

Table 6 ANOVA

Item	*df*	*SS*	*MS*	*F*	*Significance F*

Regression	1	195.92	195.92	96.9350	1.6011438
Residual	22	44.47	2.02		
Total	23	240.39			
	Coefficients	*Standard Error*	*t Stat*	*P-value*	
Intercept	-0.03749	0.29140	-0.12864	0.8988122	
Rm-Rf	0.78229	0.07946	9.845558	1.601E-09	

Table 7 and Table 8 shows the test results for Aljazirah GCC income fund.For the R Square, 52% of the variance dependent variable which return of the fund is explained by the variance in the independent variable which is the return on market portfolio.It also represents the explanatory power of the model. In the respective of portfolio management, R square is the indicator of the level of diversification in the portfolio. In the case of this fund it is well-diversified portfolio. For Aljazirah GCC income fund, the regression equation is shown as equation 5.

Ri = -0.85 + -0.47 (Rm-Rf)	(5)

The regression of the model (fund) is -0.85 with t-value of -2.43 and p-value 0.02. Because p-value is less than 0.05, hence the intercept is statistically significant. In other words, the fund has has been able outperform the market. There was reward for active management of the fund. The beta coefficient of the market portfolio is -0.47 with a t-value of -5 and a p-value of 5.5. The p-value is much higher than the critical value of 0.05, hence the null hypothesis of no impact of market portfolio on returns of fund can be rejected.

Table 7 Summary output

Regression Statistics	
Multiple R	0.727795093
R Square	0.529685698
Adjusted R Square	0.508307775
Standard Error	1.703476649
Observations	24

Table 8.ANOVA

Item	*df*	*SS*	*MS*	*F*	*Significance F*
Regression	1	71.89937435	71.89937	24.77723	5.56116E-05
Residual	22	63.84031926	2.901833		
Total	23	135.7396936			
	Coefficients	*Standard Error*	*t Stat*	*P-value*	
Intercept	-0.8495930687	0.349159087	-2.43325	0.023546	
Rm-Rf	-0.4739036254	0.095205854	-4.97767	5.56E-05	

Table 9 and Table 10 shows the test results for Riyad commodity fund.For the R Square, 21% of the variance dependent variable which return of the fund is explained by the variance in the independent variable which is the return on market portfolio It also represents the explanatory power of the model. In the respective of portfolio management, R square is the indicator of the level of diversification in the portfolio. In the case of this fund it is somewhat a diversified portfolio. For Riyad commodity fund, the regression equation is shown as equation 6.

Ri = 0.20 + 0.1 (Rm-Rf)	(6)

The regression of the model (fund) is 0.20 with t-value of -1.38 and p-value 0.18. Because p-value is greater than 0.05, hence the intercept is not statistically significant. In other words, the fund has not been able outperform the market. There was no reward for active management of the fund. The beta coefficient of the market portfolio is 0.1 with a t-value of 2.448 and a p-value of 0.02. The p-value is less than the critical value of 0.05, hence the null hypothesis of no impact of market portfolio on returns of fund can be rejected.

Table 9. Summary output

Regression Statistics	
Multiple R	0.462345703
R Square	0.213763549
Adjusted R Square	0.178025528
Standard Error	0.725680183

Observations	24

Table 10 ANOVA

Item	*df*	*SS*	*MS*	*F*	*Significance F*
Regression	1	3.149877639	3.149878	5.981404	0.02292074
Residual	22	11.58545801	0.526612		
Total	23	14.73533565			
	Coefficients	*Standard Error*	*t Stat*	*P-value*	
Intercept	-0.20584847	0.148741593	-1.38393	0.180259	
Rm-Rf	0.09919166	0.040557645	2.445691	0.022921	

Table 11 and Table 12 shows the test results for Alawwal income fund For the R Square, 20% of the variance dependent variable which return of the fund is explained by the variance in the independent variable which is the return on market portfolio. It also represents the explanatory power of the model. In the respective of portfolio management, R square is the indicator of the level of diversification in the portfolio. In the case of this fund it is somewhat a diversified portfolio. For Alawwal income fund, the regression equation is shown as equation 7.

Ri = -0.98 + 0.23 (Rm-Rf)	(7)

The regression of the model (fund) is -0.98 with t-value of -2.67 and p-value 0.01. Because p-value is less than 0.05, hence the intercept is statistically significant. In other words, the fund has been able to outperform the market. There was reward for active management of the fund. The beta coefficient of the market portfolio is 0.23 with a t-value of 2.37 and a p-value of 0.02. The p-value is less than the critical value of 0.05, hence the null hypothesis of no impact of market portfolio on returns of fund can be rejected.

Table 11. Summary output

Regression Statistics	
Multiple R	0.451630664
R Square	0.203970257

Adjusted R Square	0.167787087
Standard Error	1.80035353
Observations	24

Table 12.ANOVA

Item	*df*	*SS*	*MS*	*F*	*Significance F*
Regression	1	18.27156797	18.27157	5.637158	0.026731939
Residual	22	71.3080023	3.241273		
Total	23	89.57957027			
	Coefficients	*Standard Error*	*t Stat*	*P-value*	
Intercept	-0.987441262	0.369015798	-2.67588	0.013805	
Rm-Rf	0.238899575	0.10062022	2.37427	0.026732	

CONCLUSION

This work has analyzed mutual funds performance along with its Alpha relative to the market in Saudi Arabia. This study concerns with alpha and beta to assess the performance of a certain fund. The test results show that four funds underperformed the market, although they are actively managed. The other two funds that are passively managed also performed the market. For future works, the authors recommend to conduct more researches in the field of mutual funds and hedge funds performance relative to their index, in the Middle East and North Africa (MENA) region for different indices.

REFERENCES

Rutterford, J. (2016). Investment Management in Boston: A History. ByDavid Grayson Allen. Amherst and Boston: University of Massachusetts Press, 2015. x+ 432 pp. Tables, photographs, illustrations, notes, index. Cloth, $90.00; paper, $29.95. ISBN: cloth, 978-1-62534-102-0; paper, 978-1-62534-103-7. Business History Review, 90(1), 139-142.

Sekhar, G. S. (2017). The Management of Mutual Funds. Springer International Publishing.

Gill, P. (2017). Global Developments in Equity Trading. In Equity Markets in Transition (pp. 391-409). Springer, Cham.

Kaur, P., & Singh, J. (2017). Evolution of Exchange Traded Funds (ETFs)--Comparison US and Indian Bourses. Amity Business Review, 18(1).

Bogle, J. C. (2015). Bogle on mutual funds: New perspectives for the intelligent investor. John Wiley & Sons.

Schmidt, L., Timmermann, A., & Wermers, R. (2016). Runs on money market mutual funds. American Economic Review, 106(9), 2625-57.

Barber, B. M., Huang, X., & Odean, T. (2016). Which factors matter to investors? Evidence from mutual fund flows. The Review of Financial Studies, 29(10), 2600-2642.

Hunter, D., Kandel, E., Kandel, S., & Wermers, R. (2014). Mutual fund performance evaluation with active peer benchmarks. Journal of Financial economics, 112(1), 1-29.

Lemeshko, O., & Rejnuš, O. (2015). Performance evaluation of equity mutual funds in countries with emerging economies: Evidence from BRIC, CEE, sea and MENA regions. Procedia Economics and Finance, 30, 476-486.

Abdelsalam, O., Fethi, M. D., Matallín, 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.

Cici, G., Gehde-Trapp, M., Göricke, M. A., & Kempf, A. (2018). The investment value of fund managers' experience outside the financial sector. The Review of Financial Studies, 31(10), 3821-3853.

Moreno, D., Rodriguez, R., & Zambrana, R. (2018). Management sub-advising in the mutual fund industry. Journal of Financial Economics, 127(3), 567-587

Statman, M., & Glushkov, D. (2016). Classifying and measuring the performance of socially responsible mutual funds. The Journal of Portfolio Management, 42(2), 140-151.

Columns on Last Page Should Be Made As Close As Possible to Equal Length

Authors' background

Your Name	**Title***	**Research Field**	**Personal website**
Liyan Bukhari	Student	Finance	
Shabir Ahmad Hakim	Assistant Professor	Finance: asset pricing	

***This form helps us to understand your paper better, the form itself will not be published.**

***Title can be chosen from: master student, Phd candidate, assistant professor, lecture, senior lecture, associate professor, full professor**
s