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Stock selection and Market timing ability of fund managers: Evidence from Pakistan

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ABSTRACT

Fund managers performance remains the focus of attention all the times. Mutual funds manager claims that they can beat the market. How successful they are in achieving their claim remains the question of interest. To be a successful fund manager it is essential to possess stock selection and market timing skills. This study aims to evaluating the performance of fund managers in Pakistan. Basically, we are interested to see whether fund managers in Pakistani mutual funds possesses stock selection and market timing skills or not. In order to evaluate the performance of fund managers we employed two very well-known models; Jensen model and Trenoy & Mαzuy model. The results indicate that fund managers in Pakistan are not remains successful in beating the market (KSE 100 index) during our sample period. We also find that fund managers do not possess the market timing ability. However, stock selection skills found significant in Islamic fund managers, but the same is absence in conventional fund managers.

INTRODUCTION

Mutual funds play an important role in the economy it's channelize saving into investing and provides investing opportunity to lower and middle-class investors. Mutual funds hire professional managers with the aim to provide better returns to their prospective investors. One of the goals of fund managers is to beat the market. In order to achieve their desired goals, some fund managers rely on fundamental analysis while others rely on technical analysis. However, the experience of portfolio building is very essential in the achievement of their desired goal.

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Two things are very important for becoming a successful manager. Firstly, the selection of stocks in its portfolio, picking up the right stock in portfolio is a key to success. Secondly, the timing ability means to sell and retain the stock at the appropriate time. Two methods are generally used for identification of successful manager: (1) Stock Selection: This ability involves micro forecasting and identification of the movement of prices of individual stocks in relation to the market and the selection of overpriced/underpriced stocks in general. (2) Market Timing: This ability involves macro forecasting and refers to correctly guess the movement of the market whether bull or bear and changing portfolio accordingly.

Several researchers have evaluated the performance of fund managers but their finding are only limited to particular markets (Treynor & Mazuy,1966; Henriksson & Merton 1981; Bollen & Busse, 2001; Giambona & Golec, 2009; Kim & In, 2012; Ferson & Mo, 2016). We cannot relate the fund manager performance of USA to Pakistan. This is because financial and economic conditions of both countries are very different. Similarly, financial literacy and manager's sophistication level are also not similar across countries. Ferreira et al. (2012) argued that we cannot apply the findings of developed countries to all other markets across the globe. So it is very important to evaluate the performance of fund managers across emerging countries as well. However, this study aims to evaluate the performance of fund managers in Pakistan.

The rationale behind selecting Pakistani mutual fund market are following: Firstly, Pakistan has emerging mutual fund market with assets under management over 692 billion and few funds are also in top 100 mutual funds in the world. Secondly, to the best of my knowledge no previous research has been done in Pakistan that evaluates the performance of mutual fund managers. So this study also fills this prevailing gap in the literature. Thirdly, Pakistani mutual funds are mainly compromise of two broad categories; Conventional funds and Islamic funds. So it also gives us opportunity to separately evaluate the performance of Islamic fund managers as well. This is lack of exploration until now. This study provides some meaningful information about fund managers in Pakistan to regulators and potential investors.

This thesis is organized as follows. Section 1 presents the introduction of the study and also discusses the research question and objective. Section II presents the literature pertaining to our study. Section III presents the data and empirical methodology that is adopted in this study. Section IV presents the results

and discussion. Finally, Section V concludes the study and also give some recommendation to regulators and mutual fund investors.

Research Question

Fund managers usually claim that they can beat the market. In simple words they are claiming that they possess stock selection and market timing abilities. Here the question arises, are they really possesses these skills or they are able to beat the market? It's a million-dollar question and needs to be investigated? So the research questions of this study are as follows:

- *Are fund managers in Pakistan are beating the Market?*
- *Are fund managers in Pakistan possesses the stock selection skills?*
- *Are fund managers in Pakistan possesses the market timing ability?*

Here the market means the Benchmark of the respective funds which is KSE 100 Index.

Research Objective

Following are the objectives of this study.

1. To evaluate the performance of fund managers in Pakistan.

2. To examine the stock selection ability of fund manager in Pakistan.

3. To examine the market timing ability of fund manager in Pakistan

LITERATURE REVIEW

Increasing popularity of the mutual funds has made a fundamental challenge for the academicians and practitioners to evaluate the performance of fund managers (Bu, 2019). There are considerable numbers of studies present which were conducted in this regard, examining how the investments have performed

in the managed portfolio. Treynor & Mazuy (1966) paper was considered the seminal paper in this area. They put forward a model that can be applied for determining manager's "stock selection skills and market timing abilities". In a sample of 57 fund managers, they found only a single manager, who possesses the market timing ability to beat the market. Jensen (1968) introduces alpha in the traditional CAPM model which is an indicator of manager's performance. In his study, he did not find any evidence of managerial superior stock selection skills.

Another study carried out by Chang & Hewellen (1984) applied parametric statistical procedure on the sample of 67 fund managers and founds no superior performance of fund managers in US. Similarly, Henriksson & Merton (1981) derived both parametric and non-parametric models for analyzing the fund manager performance. They studied 116 mutual funds and found no evidence of market timing ability. Recent studies mostly found the same findings that have been carried out in the 1960s and above. Thiana (2013) evaluated the fund manager's performance in Croatia and rejected the market timing hypotheses.

Deb et al. (2007) analyzed the performance of Indian fund manager's. They selected 96 mutual funds in their sample and employed both conditional and unconditional approaches. They also rejected the market timing ability hypotheses in their study but interestingly they observed stock selections skill in Indian fund managers. The market dynamics have been changing over the years and some most recent studies document the existence of market timing ability. Lio et al. (2017) found strong evidence of market timing ability in the Chinese mutual fund market. On the other hand, there are very few studies that analyze the performance of Islamic fund managers.

The study of Mansoor & Bhathi (2011) is one of them who analyzed the performance of Islamic fund managers. Their sample consisted of 128 fund managers in Malaysia. They found Islamic fund managers have a positive ability to time the market also their performance is better than conventional fund managers. Das & Rao (2015) analyzed the performance of 238 US socially responsible funds. They rejected the market timing ability hypotheses in their sample period. Out of 238 fund managers, only 48 fund managers possesses the stock selection skills whereas only five possesses the ability to time the market.

DATA AND METHODOLOGY

The study uses yearly returns from the period 2010 to 2019 obtained from fund manager's reports of the respective funds. Currently, 262 mutual funds are working in Pakistan, which are operated under 19 Asset management companies. These funds are divided into five broad categories namely; Income funds, balanced fund, equity funds, Index fund, Money market fund. Our sample compromises of 38 open-ended equity funds which include 17 Islamic and 21 conventional funds. The rationale behind selecting the equity category is that it compromises up to 98 percent of stocks, so manager stock selection skills are more required in this category besides others. The market return data (KSE 100 index) is collected from the Pakistan stock exchange. And the risk-free rate of return (government securities rate) is collected from the state bank of Pakistan website.

Empirical Methodology

In literature, several models have been developed for evaluating the fund manager performance. But the model of Treynor & Mazuy (1968), and Jensen (1966) were mostly employed by the academic researchers (Bollen & Busse, 2001; Deb at al. 2007; Skrinjaric, 2013; Liao et al. 2017). By following the literature, we will also apply these two models in our study. The current section provides a brief description of these models.

Jensen Alpha Model

Jensen (1966) introduced an alpha term in the traditional CAPM model. "This model is based on the difference between the actual return and the return measured by CAPM. Jensen α is the portion of excess return that is not explained by systematic risk". This model is widely employed by academic researchers while evaluating fund manager performance. This model is formulated as follows.

$$Rit - Rft = \alpha + \beta(Rm - Rft) \quad + \quad \mu t \qquad (1)$$

The left-hand side of eq. (1) is mean "excess return" of a portfolio. "Rft is the risk-free rate of return at period t, which is one-year government securities rate." α is the Jensen alpha and is the excess return

that is not explained by the systematic risk. β is the systematic risk of the *ith* fund. *Rm – Rft* is the CAPM market risk premium. μt is the error term. If the fund excess return (*Rit – Rft)* and the benchmark excess return (*Rm– Rft)* will same in any period *t*, then in that case α shall be zero which is the indication of no superior performance. However, positive alpha is an indication of superi0r performance.

Treynor And Mάzuy Model

Treynor & Mαzuy (1968) model were widely employed by academic researchers in search of market timing ability of fund managers. However in their paper, they did not find any evidence of managerial superior performance to beat the market. Their model is formulated as follows:

$$Rit- Rft = \alpha i + \beta(Rm - Rft) + \gamma(Rm - Rft)^2 + \mu it \quad (2)$$

Where "*Rit* " is the fund return at period t.

Rm is the market return at period t.

Rft is the risk free rate of return at period t.

αi represents the stock selection skills

γ represents the market timing ability of fund managers , If γ will positive , it means fund manager is successful.

A quadric term $\gamma(Rmt - Rft)^2$ is introduced in the CAPM model which turns the linear relationship between fund return and market return into quadric. Now one unit change in market return changes the fund return by $\beta + 2\gamma(Rmt - Rft)$. So if $\gamma > 0$ then its shows the relationship is quadric and fund manager is successful.

RESULTS & DISCUSSION

TABLE 1: DESCRIPTIVE STATISTIC

CONVENTIONAL FUNDS					
Stats	**Mean**	**Median**	**Maximum**	**Minimum**	**Std. Dev.**
Rit	15.52	18	73	-32	21.52
Rm	17.64	16	52	-19	21.22
Rft	9	9	13	6	2.42
Rm - Rft	8.60	9	43	-30	20.95
Rit - Rft	6.48	8	64	-43	21.60
ISLAMIC FUNDS					
Rit	12.04	16.5	56	-32	21.6
Rm	17.64	16	52	-19	21.74
Rft	8.72	9	13	6	2.38
Rm - Rft	5.41	9	43	-30	21.65
Rit - Rft	3.32	7.50	47	-43	21.83

Note: Fund Return Rit is measured in Percentage, Rm,is the market return measured by KSE 100 index. Rft is a risk-free rate of return measured by government securities one year rate. Rm – Rft is a risk premium and Rit – Rft is excess portfolio return.

Table no. 1 presents the descriptive analysis. The annual mean returns of conventional funds are 15.52 with a standard deviation of 21.52 percent. The annual market return is 17.6 percent with a standard deviation of 21.22 percent. On average fund returns are less than the market returns, which indicates that on average conventional funds do not outperform the market. The Maximum fund return over the sample period is 73 percent and the minimum is negative 32 percent which shows this segment is highly volatile. The average risk premium in the case of conventional funds is 8.60 percent annually and average excess returns of mutual funds are 6.48 percent annually.

On the other side, Islamic mutual funds have a mean annual return of 12.04 percent with a standard deviation of 21.6 percent. The Islamic funds also underperform from market with a difference of 5.6 percent annually. The maximum return for the period is 56 percent while the minimum return is negative 32 percent. The average risk premium for Islamic funds is 5.41 percent which is less than conventional funds; it also shows that Islamic funds are quite less risky as compared to its counterpart.

TABLE 2: RESULT OF JENSEN ALPHA MODEL

Fund Portfolio	**Jensen (α)**	**β**	**Adj. R^2**	**F statistic**
Conventional Funds	-1.30*	0.89***	0.76	646***
	(0.78)(-1.67)	(0.03) (28.06)		
Islamic Funds	-1.69*	0.86***	0.73	344***
	(0.98)(-1.71)	(0.04)(17.68)		
All Funds	-1.43***	0.88***	0.75	995***
	(0.59)(-2.39)	(0.02)(32.64)		

Note: we apply the CAPM single factor regression model with a random effect on unbalanced panel data. Hausman Test was applied for a selection of appropriate model. The fund manager's performance in all three portfolios is evaluated by eq. 2: Rit – Rft = α + β(RM – Rft) + μt .The " α" represents the Jensen alpha, whereas "β" is systematic risk. The number reported in the first parentheses is the standard error and in second parentheses is t statistic. Adj. R- square measures the fitness of the model. *** , ** , * indicates 1, 5 and 10 percent significant level.

Table no. 2 represents the empirical results of the Jensen alpha (1966) model. The Jensen alpha is an indicator of manager performance. In all three portfolios, Jensen alpha α is negative and significant. This indicates that fund manager's performances are not superior in all three portfolios during our sample period. This indicates that fund managers in Pakistan are not earning the superior returns over market (KSE 100 index). Both Conventional and Islamic fund managers do not outperform the market (KSE 100 index). This clearly shows that fund managers are not fulfilling their claim that they can beat the market(KSE 100 index). The systematic risk beta of all three portfolios is near to 1 which shows that mutual funds are volatile as the market. The adjusted R square in all three portfolios shows that the models are well fitted and F statistics are also significant (5 percent level) in all three models.

TABLE 3: RESULTS OF TREYNOR AND MAZUY MODEL

Fund Portfolio	α	β	γ	Adj. R2	F statistic
Conventional Funds	0.17	0.93***	-0.003***	0.77	336***
	(0.85)(0.19)	(0.02)(35.7)	(0.001)(-3.15)		
Islamic Funds	1.79*	0.92***	-0.007***	0.76	203***
	(1.03)(1.72)	(0.04)(20.8)	(0.001)(-6.84)		
All Funds	0.76	0.93***	-0.005***	0.77	539***
	(0.66)(1.15)	(0.02)(39.8)	(0.0008)(-5.74)		

Note: To evaluate the stock selection and market timing ability of fund managers we applied the Tranoy and Mazuy model as: $Rit - Rft = \alpha i + \beta(Rmt - Rft) + \gamma(Rmt - Rft)^2 + \varepsilon it$. Where Alpha "α" represents the stock selection ability and "γ" donates the coefficient of market timing ability. The number reported in first parentheses is the standard error and in second parentheses is t statistic. Adj. R-square measures the fitness of the model. "*** , ** , * indicate 1 . 5 and 10 percent significant level.

Table 3 represents the empirical findings of Tranoy & Mαzuy (1968) model. Alpha α is the indicator of stock selection skills of fund managers. In the overall sample we find no conclusive evidence of the existence of stock selection skills and market timing ability among mutual fund managers in Pakistan. However, the coefficient alpha α in conventional funds is positive but it is not significant. We also reject the market timing ability hypotheses in conventional funds because coefficient γ is negative and insignificance. On the other hand, the same results have observed in the case of Islamic funds. The difference between the two categories is "stock selection skill" which is significant in the case of Islamic fund managers. But it is not highly significant (i.e. 10 percent level) but we can say that to some extent the Islamic fund manager possess the stock selection ability. The finding of the overall portfolio indicates "lack of stock selection and market timing ability" exists among fund managers in Pakistan. These results are significant at 5 percent probability level. The beta of all portfolios is near to 1 which shows fund returns in Pakistan are as volatile as market (KSE 100 index). The adjusted R square value indicates that our all three models are well fitted. Our results are similar with the existing literature on developed countries (Chen et al 1992, Chen & Lewellen 1984, Thiana, 2013). However, our results are contrary to the finding of Lio et al., 2017, who support the market timing hypotheses in China.

CONCLUSION.

The managerial performance of mutual funds remains a hot debate in the literature. Two things are very important for becoming a successful manager. Firstly, the selection of stocks in its portfolio, picking up

the right stock in portfolio is a key to success. Secondly, the timing ability means to sell and retain the stock at the appropriate time. Most of the studies on performance evaluation of fund managers have been done in developed countries. However, we have very little evidence of fund manager's performances in emerging countries. Ferreira et al. (2012) argued that we cannot apply the findings of developed countries to all other markets across the globe. This study aims analyzes the performance of 39 open ended equity fund managers in Pakistan. We employed two very well-known models; Jensen (1968), and Treynor & Mαzuy (1966) model. We found that fund managers in Pakistan are failing in fulfillment of their claim that they can beat the market (KSE 100 index). We found no evidence of manager's ability to time the market in both conventional and Islamic funds. However stock selection skill is present in Islamic fund managers but same is absent among conventional fund managers. In overall sample, compromise of both Islamic and conventional funds we did not found any evidence of manager's stock selection and market timing skills.

Recommendations

Following are the recommendations for the potential mutual fund investors in Pakistan

1. Equity fund returns are highly volatile in Pakistan. So investors should carefully invest in these funds after proper investigation.

2. It is highly recommended to invest in these funds for longer period of time.

3. Fund manager's claims that they can beat the market (KSE 100 index). But in our sample period we do not find any evidence of manager's superior performances over market (KSE 100 index). So investors should keep this fact in mind while investing in equity funds.

4. Islamic fund managers possess the stock selection skills also their systematic risk is lower than conventional funds. So we will recommend to low risk tolerance investors to invest in Islamic funds.

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