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Investor Behaviour and The Persistence of Poorly Performing Mutual Funds: Evidence from India

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Abstract

This paper examines how consistently underperforming mutual funds are able to persist nevertheless and also analyses whether the investors choose funds on the basis of past risk-adjusted returns or investors react to recent returns without considering the predictive validity of returns. The study is based on growth funds of all open ended equity schemes for a period of 10 years, i.e., from 1st April 2001 to 31st March 2011 and evaluates the performance of mutual funds based on 25 selected schemes. Capital Asset Pricing Model (CAPM) and models suggested by Sharpe, Treynor, and Jensen Measure were used. The study reveals that the investors are concentrating on the recent return and focusing on the future performance by ignoring the risk involved in it. The paper concludes that though the risk is high, the underperforming funds are able to survive nevertheless into the market.

Keywords: Behavioural Finance, Capital Asset Pricing Model, Growth Schemes, Investment Decision, Jensen's Alpha, Performance Evaluation, Sharpe Ratio, Treynor Ratio.

Introduction

Mutual fund is an investment company or trust that pools the resources from thousands of its unit holders who share common investment goal, and then diversifies its investments into different types of securities in order to realize potential return with reasonable safety. The concept of mutual fund was introduced in India with the formation of Unit Trust of India (UTI) in 1963. In India, UTI continued to be the sole mutual fund until 1987 and was only in 1993 that private players were allowed to enter into the country. The mutual fund industry witnessed robust growth and stricter regulation from the SEBI after the year 1996. From 2004 onwards the industry has witnessed several mergers and acquisitions, to illustrate few; Alliance Mutual Fund by Birla Sun Life etc. Simultaneously, more international mutual fund players have entered into India at the end of 2006.

A number of researchers in the past have attempted to evaluate the performance of mutual funds. Grinblatt and Sheridan (1989) evaluated the performance in terms of gross returns of mutual funds and revealed that abnormal performance of the funds based on gross returns is inversely related to the size. Funds have underperformed benchmark portfolios both after management expenses and after even gross of expenses Burton (1995). Carhart (1997) demonstrated that common factors in stock returns and investment expenses almost completely explain persistence in equity mutual fund's mean and risk adjusted returns.

Even though mutual funds have earned more popularity in terms of investors and under management, it still performs poorly. Overall, their past record is not good even when compared to the stock market index. About eight out of 10 perform worse than the market indices and very small percentage of them are rewarding. The reason why it is

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so difficult to determine a good fund from a mediocre to poor fund is that even the best financial chiefs hit a rough patch. Hence, this paper made an attempt to examine how the behaviour of investor allows mutual funds with consistently poor or mediocre performance to endure nevertheless, i.e., how consistently underperforming mutual funds are able to survive in the market.

One of the lucrative investment avenues available for investor is mutual funds. Among the mutual funds schemes, the equity schemes give more return to the investors. The problem, here, is that the investors are confused with which mutual fund schemes they are supposed to choose for investment and in what way they are investing into it. Hence, the present study has been carried out.

Review of Literature

Performance evaluation of mutual funds has been a widely discussed issue in the field of finance. Several studies have been made by different authors on the performance of mutual funds. Well known studies by Treynor (1965), Sharpe (1966) and Jensen (1968) established the standard indices to measure risk-adjusted mutual funds return.

Phillipp Kellerhals and Rainer Schobel (2002) made an analysis of the dynamic price behaviour of closed end funds. Based on the information of forecasting test model they implemented a portfolio trading strategies by arguing that forecasting model generated more valuable information to build up a long trading strategy and concluded that immediate implementation of these long term strategies is more valuable than implementing them with a time lag. Large set of findings were made under the persistence of mutual fund performance. Past performance of a fund provides useful information for investors who are considering an investment in mutual funds, Grinblatt and Titman (1992). But they did not address on how optimally weight and effective information about past performance are made in selecting a mutual funds. On the other hand, Hendricks *et al*. (1991) argued only the most recent past performance provides information about future performance.

Edwin *et al*. (1996) measured mutual funds' performance using risk adjusted return and found that past performance is predictive of future performance in both the short as well as in long run. Similarly, Brown *et al*. (1995) explored the performance persistence in mutual funds using absolute and relative benchmarks. A year-by-year decomposition of the persistence effect demonstrated that the relative performance pattern depends upon the time period observed. A special study on international mutual fund is made by Cumby and Glen (1990) who found that the Morgan and Stanley index did not outperform an international equity index. Jensen (1968) evaluated the ability of the fund managers in selecting the undervalued securities and concluded that for the sample of 115 funds, the fund managers were not able to forecast security prices well enough to recover research expenses and fees. Prather and Middleton (2006) attempted to find out the timing and selectivity of mutual fund managers and found that the decision made by teams, results in superior micro or macro forecasts and performance outcomes when compared to the decision made by an individual again.

Objectives of the Study

- To analyse the behaviour of mutual fund returns of selected mutual fund schemes in India.
- To examine the predictability of poorly performing mutual funds in India; and
- To analyse whether the investors choose funds on the basis of past risk-adjusted returns or they react to recent returns despite the predictive validity of returns.

Methodology

Source of Data and Period of the Study

The study depends upon secondary data which were collected from the ALPHA database software of Centre for Monitoring Indian Economy Pvt. Ltd (CMIE).The study is an attempt to analyse the behaviour and its persistence of poorly performing mutual funds of open ended equity funds in India during the period of 10 years, i.e., from 1st April 2001 to 31st March 2011.

Sampling Design

The study is an attempt to analyse the behaviour and its persistence of poorly performing mutual funds. For this purpose, the returns for all the open ended equity schemes with growth options were considered. Out of the total

schemes' return, only 25 open ended equity based growth funds are selected by multistage sampling technique based on the life history for a continuous period of ten years. Other funds are not considered because of unavailability of data.

Research Methods

For evaluating the performance of mutual fund schemes data was analysed by using the following performance modules:

- Regression model
- Sharpe model
- Treynor model, and
- Jensen model

Plan of Presentation

The first part of the study introduces the Indian mutual fund industry. The second part is the blue print of the study, herein the statement of the problem, objectives, research methodology, sampling design and research methods are given. The third part is related to review of literature. The fourth part is related to the functioning of mutual fund in India, and the fifth part evaluates the investors' behaviour by using regression analysis and widely accepted tested models given by Sharpe, Treynor and Jensen. And in the final part, the summary of the findings and conclusion are presented.

Analysis and Discussion

Fund Return

Return on equity based growth funds have been selected for the analysis and ten years data have been used. Due to non-availability of data for ten consecutive years, 25 schemes only have been selected for the analysis.

Market Return

The market returns are computed by using Bombay Stock Exchange Sensitivity Index (BSE SI) considering market index as benchmark. The return on the market is calculated as:

$$r_m = \frac{\text{Market Index } (t) - \text{Market index } (t-1)}{\text{Market Index } (t-1)} \times 100 \qquad (1)$$

The proxy variable for risk free rate is 91 days Treasury Bill rate of Indian Government Security. 91 days Treasury Bill rate were collected from the RBI website for the study period.

Linear Regression

$$(Rp\text{-}Rf)t = \alpha + \beta\,(Rm\text{-}Rf)t + \xi pt \qquad (2)$$

where,

Rp = Expected return on the fund i at time t

Rf = Risk free rate at time t

Rm = Expected return on the market index at time t

α = Intercept

β = Beta of the fund i

Regarding the data analysis, at first the regression is set to find out whether the investors evaluate funds on the basis of past risk adjusted return or they react to recent return. R^2 is the proportion of variation in the dependent variable explained by the regression model.

The values of R^2 range from 0 to 1. The R^2 tends to optimistically estimate how well the models fit the population. If the R^2 change associated with a variable is large, that means that the variable is a good predictor of the dependent variable. The co-efficient of determination (R^2) indicates the extent to which individual return is explained by the market return.

From Table 1 it is inferred that R^2 value is higher for D S P Blackrock Equity Fund 0.174, which shows that the market return accounts for 17.4% of the variation in the DSP Blackrock Equity Fund. Durbin-Watson value of 2 indicates that there is no autocorrelation (positive correlation) in the sample. A value greater than 2 indicates that there is a negative correlation between the samples. Here, the value of Durbin-Watson is moving towards 2, and hence all funds have performed well.

It can also be seen that the estimated beta coefficient is significant with positive sign at 1% level for all 25 companies, but it is very low for SBI Magnum Equity Fund (0.061). The beta coefficient of less than one has revealed that the funds are highly defensive (or less aggressive) during the study period. Further, none of the fund has beaten the market rather they were trying to meet the market. It was found that the investor holding in funds

Table 1: Result of Regression, Shape, Treynor and Jensen Ratios for 25 Schemes

SCHEMES	β	R^2	DURBIN - WATSON	SHARPE RATIO	TREYNOR RATIO	JENSEN RATIO
Birla Sun Life Equity Fund	.090	.125	1.604	-2.58165	-59.7689	-5.3783
CanaraRobeco Equity Tax Saver	.136	.159	1.580	-1.90628	-39.161	-5.3249
D S P Blackrock Equity Fund	.100	.174	1.367	-2.68958	-52.686	-5.2690
Franklin India Prima Fund	.092	.142	1.489	-2.62137	-57.1533	-5.2562
H D F C Equity Fund	.082	.130	1.481	-2.64607	-63.111	-5.1575
H D F C Top 200 Fund	.084	.125	1.314	-2.67913	-62.2321	-5.2254
I C I C I Prudential Top 100 Fund	.092	.134	1.366	-2.55468	-62.6286	-5.2284
I C I C I Prudential Top 200 Fund	.082	.117	1.424	-2.65682	-56.5609	-5.2442
I N G Core Equity Fund	.078	.070	1.549	-2.12585	-62.289	-5.1255
J M Equity Fund	.102	.168	1.327	-2.58414	-67.0526	-5.1366
Kotak 50	.097	.156	1.175	-2.73806	-53.9814	-5.5249
L I C Nomura M F Equity Fund	.091	.129	1.501	-2.51707	-54.0041	-5.2601
Morgan Stanley Growth Fund	.085	.116	1.197	-2.64887	-63.7188	-5.4154
Principal Growth Fund	.086	.130	1.297	-2.68204	-60.6733	-5.2184
Principal Resurgent India Equity Fund	.093	.154	1.295	-2.69387	-56.2086	-5.2272
Reliance Growth Fund	.093	.151	1.332	-2.66534	-56.0656	-5.2142
S B I Magnum Equity Fund	.061	.057	1.639	-2.49981	-85.6246	-5.2221
Sundaram Growth Fund	.087	.121	1.322	-2.57529	-59.1281	-5.2703
Tata Growth Fund	.114	.172	1.559	-2.34398	-45.9921	-5.2445
Tata Pure Equity Fund	.090	.132	1.503	-2.62892	-58.7267	-5.2873
U T I Equity Fund	.083	.143	1.224	-2.90256	-62.5036	-5.1885
U T I Masterplus	.088	.131	1.329	-2.63318	-59.3307	-5.2213
U T I Mastershare	.102	.140	1.350	-2.44465	-53.2676	-5.4349
U T I Top 100	.091	.139	1.273	-2.65946	-58.0473	-5.2842
U T I Ulip	.078	.116	1.154	-3.03892	-72.6538	-5.6676

Source: Results based on the data collected from CMIE Alpha database.

are very slowly adjusted with it and they choose funds on the basis of recent returns without considering the risk involved in it.

Next is the performance measures of 25 schemes based on the Sharpe's, Treynor's and Jensen's ratio. The Sharpe's ratio is an excess return earned over risk free return per unit of risk involved i.e. per unit of standard deviation. The range of excess return over risk free return per unit of total risk is wide and ranges from -1.9062 to -3.0389, signifying the fact that the risk-return profile of the growth fund varied widely. UTI Ulip is less than Canara Robeco Equity Tax Saver Fund, which means that the fund Canara Robeco Equity Fund is preferred to UTI Ulip because it has a higher Sharpe Ratio, even though Canara Robeco Fund has the larger volatility.

Treynor's ratio is an excess return earned over risk free return per unit of systematic risk. i.e. Beta. It is also known as the Reward to Volatility Ratio. The entire fund showed negative values thereby indicating that the fund provides inadequate return as against the level of risk involved in the investment. Here the ranking is based on the beta arrangement only. Higher the beta value the greater is the ranking and vice versa. Treynor measured how much loss or gain has been taken for each unit of this 'unavoidable' risk that attaches to the fund. The Jensen measure is like the Treynor's ratio, and all the ranks are similar to that of

Treynor's ratio, because both the measures are related to systematic risk called Beta. I C I C I Prudential Top 200 Fund stood first in the rank of excess return.

The models suggested by Sharpe, Treynor and Jensen were used for the ranking purpose and all the ratios ranks are put together for easy understanding. Table 2 shows the raking of least performing mutual funds over the 25 funds. From the table, it is clear that UTI Ulip performed poorly in all ratios and followed by Kotak 50, which is it ranked in 5th place in Treynor's ratio because if beta value is high it ranks first in terms of Treynor's ratio, it performed worst in Sharpe's and Jensen's models.

Major Observations of the Study

- Among 25 equity funds, ING Core Equity Fund has earned highest average return (-5.1077).
- The highest volatile nature is observed from the standard deviation of the schemes and the Canara Robeco Equity Tax Saver has shown the highest volatile nature (2.7938).
- Canara Robeco Equity Tax Saver shown the highest skewness (-3.087) and lowest risk (S.D) is vested with UTI Equity Fund (1.7873).
- Investors holding in funds are very slowly adjusted and they choose funds on the basis of recent returns without considering risk involved in it (0.136).
- Canara Robeco Equity Tax Saver stood first in case of Sharpe's ratio and also Treynor's ratio (-1.9062; -39.161).
- ING Core Equity Fund occupies the first position in Jensen's ratio (-4.8).
- Few schemes namely, ING Core Equity Fund Canara Robeco Equity Tax, UTI Mastershare etc. earned good return during the study period (0.5301; 0.3792; 0.2718).

Limitations of the Study

- The analysis is based on secondary data or past data, hence it may not reflect in near future as the market change from time to time.
- As the study is fully based on secondary data, the inherent limitations of the secondary data would have affected the result of the study.
- The study is limited to 25 mutual fund schemes only, have sampling error which would have influenced the results.
- Since the funds selected for this study were open ended equity based growth funds, the composition kept on changing over the time period.

Concluding Remarks

Mutual fund is an investment company or trust that pools the resources from thousands of its unit holders, who share common investment goal, and then diversifies its investments into different types of securities in order to realize potential returns with reasonable safety. The mutual funds does not always perform well into the market, it can also perform worst. So the investors should also concentrate on the recent returns. Just because a stock fund does poorly in any given year, one can't assume that it will do poorly in the next year or so. "Past performance may not be the only indicative of future results." No one is able to accurately predict how a certain stock will do over one year. There are just too many things that can happen in the meantime. Even if the company does well, public opinion may sour on the company and the share price declines anyway.

From the study, it is inferred that investors do not combine returns and risk in accordance with the performance measure. The investors are choosing funds which are the

Table 2: Ranking of Least Performing Mutual Funds

Schemes	*Sharpe's ratio*	*Treynor's ratio*	*Jensen's ratio*
UTI Ulip	25	24	25
UTI Equity Fund	24	19	4
Kotak 50	23	5	24
Principal Resurgent India Equity Fund	22	8	10
DSP Blackrock Equity Fund	21	3	16

Source: Results based on the data collected from CMIE Alpha database

"latest, best performer". The funds which have performed best almost never perform as well in the future, which is due to the fact that after a good run, the base assets become overvalued. At that situation most individual stock holders who actually buy them do much worse. Gradually, the investors chase to the best performing funds and purchase it at the peak even though the risk is high in it.

On the other hand, funds that had been performing inadequately are usually undervalued and make more investment sense. This is due to the fact that investors can get for a cost that is less than what they are worth or intrinsic value is. Because of this fact, the funds with consistently poor or mediocre performance are able to survive in the market. The least performing mutual funds schemes were found out by using the widely accepted test models of Sharpe's, Treynor's and Jensen's Ratio. UTI Ulip, UTI Equity Fund, Kotak 50.

Principal Resurgent India Equity Fund, DSP Blackrock, SBI Magnum Equity Fund and MorganStanley Growth Fund are the least performing mutual funds. However, although these funds are performing poorly, the investors are investing into it because the risk is minimum, cost is less, and of volatile nature and so these funds can survive in the market.

Many authors found that past performance of mutual fund provides useful information for investors for the future investments. Similarly, the result contained in this paper supported the result of Hendrincks *et al.* (1992) and Edwin *et al.* (1996) that the investors choose funds based on the recent return. Using the absolute and relative benchmarks Brown *et al*. (1995) explored the performance persistence in mutual funds. When we compare our result with that of the past researchers, it reveals that even though it is similar, our paper found the performance persistence of least performing mutual funds during the study period, hence the outcome contained in this article will be useful tips for other researchers.

Suggestions and Scope for Further Studies

This paper investigates how funds with mediocre or consistently poor performance are able to survive at all and the paper found that investors choose funds on the basis of recent returns without adjusting for differential risk. Further, inventors' judgements about future performance are insensitive to moderate difference in risk and expenses of funds allowing mediocre and poorly performing mutual funds to persist. The investors ignored the predictive validity of small difference in expenses for long-run performance, which becomes very important while choosing a fund or funds in the market even though that fund outperforms or it performs poorly. The outcome contained in this paper should be useful as tips for other researchers. Since our model is very simple and limited, more expanded models with more indicators and high predictive models can also be used by the budding researchers to find out the best result. And this article was not concentrated on the expenses and differences in risk widely, so the researchers can make an attempt to find out the hidden reasons in it too.

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