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PERFORMANCE EVALUATION OF MUTUAL FUNDS: A STUDY OF SELECTED EQUITY DIVERSIFIED MUTUAL FUNDS IN INDIA

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ABSTRACT

Mutual Fund is professionally managed trust that pools the money of various investors and further invests them, into different securities like shares, bonds and short term securities like certificate of deposit, commercial paper etc. and commodities like precious metals. In India the origin of Mutual Funds industry can be traced, since the enactment of UTI (Unit Trust of India) Act, 1963. The mutual funds industry grew successfully and brought about substantial returns to the investors and the public sector. Mutual funds provide opportunities for small investors, to participate in the capital market without assuming a very high degree of risk. An important principle of investment in capital market is that do not put all the eggs in one basket i.e. diversification. A small investor is not able to have a diversified portfolio mainly due to paucity of resources. However, a mutual fund pools together the savings of such small investors and invests the same in the capital market and passes the benefits to the investors. Thus, investors can indirectly participate in the capital market by subscribing to the units of mutual funds. Mutual funds employ professional fund managers to manage the investment activities. Therefore, investors also get benefits of professional expertise of these managers. Daily opening & closing NAV of different schemes have been used to calculate the returns from the fund schemes. BSES ensex has been used for market portfolio. The main aim of this paper is, to evaluate the performance of Indian equity diversified mutual funds. A subsidiary aim is to analyze the relationship between risk and return of these funds, based on total risk and systematic risk. The analysis was achieved, by assessing various financial tests like Average Return, Sharpe Ratio, Treynor Ratio, Standard Deviation, Beta and Coefficient of Determination (R2). The data has been taken from various websites of mutual fund schemes and from amfiindia.com. The analysis depicts that, majority of funds selected for study have outperformed, under Sharpe Ratio as well as Treynor Ratio

KEYWORDS: Mutual Fund, Average Return, Standard Deviation, Beta, Coefficient of Determination, NAV, Performance Evaluation, Sharpe Measure, Treynor Measure

INTRODUCTION

According to **Association of Mutual Funds in India (AMFI),** "A mutual fund is a trust that pools the savings of a number of investors who share common financial goal. Anybody with an investible surplus of as little as a few thousand rupees can invest in mutual funds. This investor buys units of a particular mutual fund scheme that has a defined investment objective and strategy."

Mutual Fund is a trust that pools money from investors by selling shares of the fund like any other type of company that sells stock to the public.

The raised money is used in different securities like stocks, bonds, money markets & commodities etc. Each mutual fund has common financial goal and the money is invested in accordance with the objective. Periodically checking up on how the mutual fund is doing is important, and there are lots of measures that the investor can use to perform the checking. A funds track record may be the single most important factor that an investor checks before opting for a mutual fund product. Hence evaluating funds is important before investing. But it is becoming increasingly important for investors to take note of other parameters too, while deciding between mutual funds. Of course, investors need to weigh the savings on expenses against the performance record before choosing a fund. In India the origin of Mutual Funds industry can be traced since the enactment of UTI (Unit Trust of India) Act, 1963.Due to various historic reasons the unit trust of India has enjoyed the monopoly in the mutual funds industry and it still maintains its prominent position. Mutual fund industry in India has grown rapidly since its liberalization in 1993.Prior to the year 1993 the major control was with the public sector banks and the insurance companies. In India Mutual funds have played a very crucial role in the growth of the financial market and have existed more than a century. Indian mutual funds have different types of mutual fund schemes such as open-ended, close-ended, interval (based on structure), growth, income, balanced and money market schemes (based on investment objectives). Also, there are other schemes such as tax saving schemes, special schemes that provide the needs of the financial position, risk tolerance and return expectations. This paper evaluates the performance of equity diversified mutual funds in the Indian market for the last 50 months from 1st Jan 2013 to 28th Feb 2017.

LITERATURE REVIEW

The present study deals with the review of literature on 'Evaluating the Performance of Indian Mutual Fund Schemes'. Review of some of the studies is presented in the following discussion.

Jensen Michael (1968) developed a composite portfolio evaluation technique concerning risk-adjusted returns. He evaluated the ability of 115 fund managers in selecting securities during the period 1945-66. Analysis of net returns indicated that, 39 funds had above average returns, while 76 funds yielded abnormally poor returns. Using gross returns, 48 funds showed above average results and 67 funds below average results. Jensen concluded that, there was very little evidence that funds were able to perform significantly better than expected as fund managers were not able to forecast securities price movements.

NaliniPravaTripathy (1996) concluded that, the Indian capital market has been increasing tremendously during last few years. With the reforms of economy, reforms of industrial policy, reforms of public sector and reforms of financial sector, the economy has been opened up and many developments have been taking place in the Indian money market and capital market.

M. Vijay Anand (2000) focused on the schemes of Birla Sun life and the competitor's schemes, available in the market. Author studied the analysis of Performance of Equity fund for 3 years and SWOT Analysis of Birla Sun life by Literature survey and Delphi technique. In depth financial review the author identifies among the selected equity funds that earns higher returns than benchmark and competitors and concluded that Birla Sun life performs well compared to the benchmarks and competitors.

Gupta &Agarwal (2009) found very little research on the construction of best mutual fund portfolio. Their objective of the research was to construct the best portfolio using cluster method, taking industry concentration as a

variable and compares the performance of two types of portfolios with selected benchmarks. Results are found to be encouraging, as far as risk mitigation is concerned. The results expected to help in the construction of best portfolio of mutual funds

Kale and Panchapagesan (2012) examines the reasons for the poor penetration of mutual funds industry and point out that lack of weak regulatory environment and governance is the foremost reason, for the poor performance is the reason for the poor growth and performance of mutual funds.

Prajapati and Patel(2012) in their study evaluated the performance of various diversified equity mutual funds in India, from the period 2007 to 2011 and found that, overall mutual funds has given positive returns and the best performer are HDFC and Reliance mutual fund.

Annapoorna and Gupta (2013) in their study examined the performance of mutual fund schemes, ranked 1 by CRISIL and compare these returns with SBI domestic term deposit rates and found that, the most of the mutual fund schemes have failed to provide SBI domestic term deposit.

Rajput and Singh (2014) made an attempt to evaluate the investment performance of major funds, in terms of risk and return and to study the impact of stock market fluctuations, during April 2012 to March 2013. The sample consists of 120 different open-ended mutual fund schemes from public sector financial institutions, banks, private sector organizations and unit trust of India. 100 share based BSE national index has been used as proxy to find out the performance of the schemes in market. The study revealed that tax saving funds performed well in market with high variations in risk and return. Systematic risk and variability were higher in tax saving and equity schemes whereas risk was moderate under balanced and low in income schemes. Tax saving fund had outperformed when compared with market benchmark followed by balanced fund and equity fund.

Pala and Chandnib (2014) in their study examined the performance of the few income and debt mutual fund scheme, on the basis of their daily NAVs. from the period Oct 2007 to Oct 2012.The study finds that, the best scheme were HDFC Mid Cap Opportunity, Birla Sun Life MNC Fund and Quantum Long-Term Equity.

Dr. Shriprakashsoni, Dr. Deepalibankapue, Dr.maheshbhutada, (2015) comparative analysis of mutual fund schemes, available at Kotak mutual fund and HDFC mutual fund. The study conclude that, Kotak Mutual Fund schemes are more destructive in Large Cap Equity schemes and HDFC Mutual Fund schemes are more destructive in Mid Cap Equity schemes, whereas both the companies schemes are very well managed in debt market. Kotak Select Focus is the best scheme in Large cap Equity, HDFC.

Objectives of the Study

- To study the performance of Selected Equity Diversified Mutual Funds in India.
- To compare the performance of Selected Equity Diversified Mutual Funds in India by using Sharpe and Treynormodel.

RESEARCH METHODOLOGY

Scope of Study

The period of the study is for 50 months (1st Jan 2013 – 28th Feb 17). The study uses a sample of top 5 ranking

mutual fund schemes comprising of all Equity Diversified Mutual funds.

Sources of Data

To gain an overview of the current performance trends of the Indian mutual fund industry, secondary data have been used and collected from the fact sheets, newspapers, journals, books and periodicals. The data were also collected from various websites of AMCs, AMFI, moneycontrol.com etc. The NAVs of the sample mutual fund schemes have been collected on monthly basis over a period of 50 months. BSE Sensex has been used as a benchmark for performance evaluation of different schemes and provides the time series data over a fairly long period of time. Further, the monthly yields on 91- day treasury bills of Government of India have been used as a surrogate for risk free rate.

Tools

To analyze whether mutual funds under-perform, or over perform the market index, the following statistical methods and techniques have been used:

For Risk Analysis

Standard deviation (Total Risk), Beta (Systematic Risk) and Coefficient of Determination were calculated.

For Return Analysis

Average Return was calculated for analyzing return on mutual funds.

Performance Evaluation by Risk Adjusted measures

For this purpose, Sharpe Ratio and Treynor Ratio were calculated.

ANALYSIS OF DATA

Average Returns

The performance evaluation is done, by comparing the returns of a mutual fund scheme with returns of a benchmark portfolio. In this study, the returns have been called as average returns. Average return is obtained, by taking the simple mean of monthly returns, whereby monthly returns are calculated, by using the NAVs of the mutual fund scheme.

$$\text{Returns} = \frac{(NAV_t - NAV_{t-1})}{NAV_{t-1}} * 100$$

Standard Deviation (SD)

Its significance lays in the fact that sample is free from defects of sampling, it measures the absolute dispersion, the greater the SD; greater will be magnitude of the deviation of the values from their mean. Small SD means high degree of uniformity & homogeneity of a series. The total risk is measured in terms of standard deviation.

$$SD = \sqrt{\frac{N(X^2) - (X)^2}{N^2}}$$

Beta

Beta is a fairly commonly used measure of risk. It basically indicates the level of volatility associated with the fund as compared to the benchmark. The success of beta is heavily dependent on the correlation between a fund and its benchmark. If the fund portfolio doesn't have relevant benchmark index then the beta would be inadequate. A beta that is greater than one means that fund is more volatile than the benchmark, while a beta of less than one means that the fund is less volatile than the index. A fund with a beta very close to 1 means the fund's performance closely matches the index or benchmark.

Coefficient of Determination (R2)

The R2 is a measure of a security's diversification in relation to the market. The closer the R2 is to 1.00, the more completely diversified the portfolio (Reilly and Brown, 2003). R2 is ranging from 1 to 100, gives an idea about how well a fund's performance correlates with that of the benchmark. An R2 of 0 means that a fund's returns have no correlation with the market and an R2 of 1.00 indicates that a fund's returns are completely in sync-up and down-with the benchmark.

Sharpe Index

Sharpe Index is based on the scheme's total risk and is a summary measure of scheme's performance adjusted for risk. Hence the Sharpe index measure reflects the excess return earned on a fund per unit of total risk (standard deviation). The risk free rate of return for the study is considered as 7.944

Sharpe Index = [(Return from the Fund - Risk-free Rate of Return) /Total Risk of Fund] i.e. $[(Rp-Rf)/\sigma p]$

Treynor Index

As per Treynor index, systematic risk or beta is the appropriate measure of risk, as suggested by Capital Asset Pricing Model. The Treynor measure of fund relates the excess return on a fund to the fund beta. Hence, the Treynor measure reflects the excess return earned per unit of systematic risk (beta).

Treynor Index =[(Return from the Fund - Risk-free Rate of Return)/Beta] i.e. $[(Rp-Rf) / \beta p]$

RESULTS AND FINDINGS

Performance in terms of Average Returns, Standard Deviation, Beta and R2

The performance of selected funds is evaluated using average return, standard deviation, Beta and R2. Return alone should not be considered as the basis of measurement of the performance of a mutual fund scheme, it should also include the risk taken by the fund manager because different funds will have different levels of risk attached to them. Risk associated with a fund, in a general, can be defined as variability or fluctuations in the returns generated by it. The higher the fluctuations in the returns of a fund during a given period, higher will be the risk associated.

Table 1

S. No	Scheme Average Return	Monthly	Total Risk (S.D)	Beta	R2
1.	Birla SL India GenNext Fund(D)-Direct Plan	24.54056775	4.64694602	0.87554789	0.529665713
2.	Franklin India Flexi Cap Fund(D)-Direct Plan	15.96470605	4.855986819	0.974372842	0.600720768
3.	ICICI Pru Dynamic Plan(D)-Direct Plan	36.00047038	3.648527165	0.685558742	0.526782673
4	Invesco India PSU Equity Fund(D)-Direct Plan	54.54592899	5.555186349	1.08838969	0.57272861
5.	L&T India Value Fund(D)-Direct Plan	61.77356515	4.918253794	1.038051778	0.664650699
6.	LIC MF Growth Fund(D)-Direct Plan	25.45345475	4.087884187	0.925640989	0.765006795
7.	Reliance Equity Opportunities Fund(D)-Direct Plan	22.26980376	4.720398015	0.898392273	0.54044572
8.	Sahara Star Value Fund(D)-Direct Plan	17.10591162	7.177635891	1.25553822	0.456535267
9.	Tata Equity Opportunities Fund(D)-Direct Plan	46.89617175	3.947001623	0.905838604	0.78585848
10.	UTI India LifeStyle Fund(D)-Direct Plan	32.34678606	3.874745764	0.944345042	0.88624192
	BSE SENSEX(X)	43.04	3.862679298	1	1

Interpretation

An analysis of Table 1 reveals that in case of all Equity option schemes of Diversified funds, three out of ten funds have earned higher returns (average returns and average annual returns) in comparison to their benchmark portfolio returns. The top performers in terms of returns, in decreasing order are L&T India Value Fund (D)-Direct Plan, Invesco India PSU Equity Fund (D)-Direct Plan and Tata Equity Opportunities Fund (D)-Direct Plan. The remaining seven funds have shown inferior returns than the market returns and have thus been unsuccessful in beating the market. These schemes were UTI India Lifestyle Fund (D)-Direct Plan, Sahara Star Value Fund(D)-Direct Plan, LIC MF Growth Fund(D)-Direct Plan, Reliance Equity Opportunities Fund (D)-Direct Plan, Birla SL India Gen Next Fund(D)-Direct Plan, Franklin India Flexi Cap Fund(D)-Direct Plan, ICICI Pru Dynamic Plan (D)-Direct Plan.

Performance in Terms of Sharpe Ratio and Treynor Ratio.

The Sharpe Ratio measures the fund's excess return per unit of its risk (i.e. total risk). This ratio indicates the relationship between the portfolio's additional return, over risk-free return and total risk of the portfolio, which measured in terms of standard deviation. Treynor ratio measures the relationship between fund's additional return over risk-free return and market risk is measured by beta. The higher the value of Treynor Ratio, the better is the performance of portfolio. The results of the Sharpe Ratios & Treynor Ratios of the selected mutual fund schemes of all the growth option with the benchmark portfolio have been presented below.

Table 2

S.no.	Scheme	Sharpe Ratio	Treynor Ratio
1.	Birla SL India GenNext Fund(D)-Direct Plan	3.591728347	19.06299807
2.	Franklin India Flexi Cap Fund(D)-Direct Plan	1.671072503	8.328132416
3.	ICICI Pru Dynamic Plan(D)-Direct Plan	7.715570998	41.06208363
4	Invesco India PSU Equity Fund(D)-Direct Plan	8.405825846	42.90368554
5.	L&T India Value Fund(D)-Direct Plan	10.96396555	51.94689351
6.	LIC MF Growth Fund(D)-Direct Plan	4.306250849	19.01758345
7.	Reliance Equity Opportunities Fund(D)-Direct Plan	3.054785574	16.05067652
8.	Sahara Star Value Fund(D)-Direct Plan	1.289548782	7.372066797
9.	Tata Equity Opportunities Fund(D)-Direct Plan	9.892616087	43.1049986
10.	UTI India LifeStyle Fund(D)-Direct Plan	6.322166033	25.94050371
	BSE SENSEX(X)	9.110256712	35.19

Interpretation

The Sharpe Ratio measures the fund's excess return, per unit of its risk (i.e. total risk). This ratio indicates the relationship between the portfolio's additional return, over risk-free return and total risk of the portfolio, which measured in terms of standard deviation. A high and positive Sharpe Ratio shows a superior risk-adjusted performance of a fund while low and negative Shape Ratio is an indication of unfavorable performance. Generally, if Sharpe Ratio is greater than the benchmark comparison, the fund's performance is superior over the market and vice-versa. The results of the Sharpe Ratios of the selected mutual fund schemes of all the growth/equity options with the benchmark portfolios have been presented in the Table 2. One selected fund has greater value than the Sharpe ratio benchmark which shows their superior performance. Top performing fund scheme as per Sharpe ratio analysis is L&T India Value Fund (D)-Direct Plan. Thus, it can be concluded that the performance in terms of Sharpe Ratio of most of the selected mutual funds have been below satisfactory and have underperformed the market index during the study period.

Treynor ratio measures the relationship between fund's additional return over risk-free return and market risk is measured by beta. The larger the value of Treynor ratio, the better is the performance of portfolio. Generally, if the Treynor ratio is greater than the benchmark comparison, the portfolio is supposed to have outperformed the market and indicates superior risk-adjusted performance. Table 2 represents the results of Treynor Ratio from the selected mutual fund schemes with their respective benchmark portfolios. The analysis reveals that four out of ten diversified fund schemes are greater than the benchmark comparison which means the specific funds have outperformed the market and indicates the superior risk- adjusted performance. But the portfolio in totality has not outperformed as maximum funds are below the benchmark comparison.

CONCLUSIONS

The study has compared the various equity diversified mutual funds. Summary of results is presented in different tables. In India, innumerable mutual fund schemes are available to general investors which generally confound them to pick the best out of them. This study provides some insights on mutual fund performance so as to assist the common investors in taking the rational investment decisions for allocating their resources in correct mutual fund scheme. The data employed in the study consisted of monthly NAVs for the open-ended schemes. The study utilized benchmark portfolios according to the scheme objective such as BSE Sensex, for all growth/equity schemes. The performance of sample mutual fund schemes has been evaluated in terms of return and risk analysis, and risk adjusted performance measures such as

Sharpe ratio and Treynor ratio. In nut shell, the performance of mutual fund in terms of Average returns, thirty percent of the diversified fund schemes have shown higher and superior returns and remaining have shown inferior returns. In terms of standard deviation, ninety percent of the selected schemes are less risky than the market. Seven funds out of ten funds have beta less than one and positive, which imply that they were less risky than the market portfolio and in terms of coefficient of determination (R2), all ten funds were near to one which indicates higher diversification of portfolio. One out of ten funds have shown superior performance, under the Sharpe ratio and four out of ten in case of Treynor Ratio have showed higher performance.

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