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A Study on the Performance of Mutual Fund Scheme in India

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Abstract*— *A mutual fund is a trust that encompasses the savings of a number of investors who share a common financial goal. The money thus collected is then invested in capital market instruments such as shares, debentures and other securities. The income earned through these investments and the capital appreciation realized is shared by its unit holders in proportion to the number of units owned by them.

Thus, Mutual Fund is one of the most effective instruments for the small & medium investors for investment and offers opportunity to them to participate in capital market with low level of risk. It also provides the facility of diversification i.e. investors can invest across different types of schemes. Indian Mutual Fund has achieved a lot of popularity since last two decades. For a long time UTI enjoyed the monopoly in mutual fund industry. But with the passage of time many new players came in the market and thus the mutual fund industry faces a lot of competition. Now a day this industry has become the major player of the financial system. Therefore it becomes important to investigate the mutual fund performance at continuous basis.

The wide variety of schemes floated by these mutual fund companies gave wide investment choice for the investors. Among wide variety of funds equity, diversified fund is considered as substitute for direct stock market investment.

In present paper an attempt has been made to investigate the performance of the open ended, growth oriented, equity diversified schemes on the basis of return and risk evaluation. The analysis was achieved by assessing various financial tests like Average Return, Standard Deviation, Beta, Coefficient of Determination (R2), Alpha, Sharpe Ratio and Treynor Ratio whose results will be useful for investors for taking better investment decisions. 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, Alpha, Coefficient of Determination.

I. INTRODUCTION

Investment is to allocate money in the aim of some benefit in the future. It involves the decisions like, where to invest, when to invest and how much to invest. General public is attracted by capital market but numbers of problems are connected with it. It is very difficult to understand the complexities involved in the stock market operation and it is not so easy to judge the fluctuations in stock price. Mutual fund is a medium which helps to mobilize money from investors to invest in different financial instruments with the investment objectives being agreed upon by the mutual fund and the investor. When investors access to market, through mutual fund, they avail the professional fund management services offered by an assets management company. The primary role of a mutual fund is to help the investors in earning return or building their wealth with low risk. Mutual fund seeks to mobilize money from all possible investors. Though mutual funds are good investment avenues for small savers who have low risk bearing capacity, the selection of appropriate mutual fund and scheme is a tedious task especially for person having non-financial background. Hence, the practitioners and academicians relating to mutual fund are supposed to fill and serve that requirement for healthy progress of the mutual fund industry.

II. REVIEW OF LITERATURE

The present context deals with the review of literature on 'Evaluating the Performance of Indian Mutual Fund Schemes'. Review of some of the studies is presented here.

Adhav, Mr S.M. & Chauhan, P.M. (2015) appraised and juxtaposed the performance of mutual fund schemes of selected Indian companies by standard deviation & Sharpe's Ratio. They observed that all selected equity mutual funds accomplished better than their benchmark indices. It was disclosed from the study that risk for debt fund was lower than that of the equity funds. The authors came to a conclusion that equity oriented hybrid funds did better than the other type of hybrid funds. The arbitrage fund & conservative debt hybrid funds performed worst.

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Ayaluru, M.P. (2016) worked to assess the performance of ten open ended equity schemes of Reliance Mutual Fund. The study was in alliance to the period from Aug 2009 to July 2014. The study spotlights that all the selected funds performed above the selected benchmark return. Further, Jensen measure projected that all the selected schemes showed positive alpha. According to beta values out of ten schemes, only four schemes showed high risk. In this study Reliance Pharma Fund had highest value and Reliance Diversified Power sector had lowest value of Sharpe & Treynor ratio.

Ratnarajun, P. & Madhav, V.V. (2016) surveyed the risk return relationship and market volatility of the opted mutual funds and studied the performance of selected schemes from march 2012 to march 2016 by using Sharpe and Treynor models. The architect scrutinized the performance of thirty open ended diversified equity schemes. Performance of Reliance Regular Saving Fund Equity, SBI Contra Fund, and HDFC Equity Fund was not found nice. It was also seen that the Sharpe's ratio was positive for all the selected schemes. These reviews are few in numbers and nowadays also mutual fund industry is one of burning research topics for researchers in finance. Here, the researcher has focused only on topper schemes so that outcome of these can be produced before existing & the potential investors of mutual funds can focus on top schemes.

III. OBJECTIVES OF THE STUDY

i) To analyse the trends in returns of growth oriented selected equity diversified mutual fund schemes

ii) To evaluate the performance of growth oriented selected equity diversified mutual fund schemes by using the various financial tests

iii) To compare the performance of growth oriented selected equity diversified mutual fund schemes

IV. METHODOLOGY

The study uses a sample of ten mutual fund schemes comprising of all equity diversified large cap funds on random basis. The data have been used and collected from the factsheets, newspapers, Journals, books and periodicals. The data were also collected from various web sites like moneycontrol.com, mutualfundindia.com, investopedia, investorzone, morningstar.com and amfiindia.com etc. Further the monthly yields on 91-day treasury bills of GOI have been used as a surrogate for risk free rate.

V. ANALYSIS OF DATA

Beta: Beta is an estimation of mutual fund schemes volatility compared to its criterion. This ratio would help to determine how much a fund's performance can diverge compared to its standard. Beta = (Standard deviation of mutual fund scheme/Standard Deviation of Benchmark)* R-Square. A fund with beta value more than 1 would move more volatile than the market. If beta value is less than 1 it means fund will be less volatile than the market

Standard deviation: Standard deviation (SD) estimates the volatility the fund's returns in relation to its average returns. It tells how much the fund's return can diverge from the historical mean return of the scheme. The more the standard deviation, the more volatile is the fund's returns. Prefer funds with lower volatility.

R Squared: It's a estimation of co-relation between mutual fund schemes performance and its criterion. It ranges between 1 and 100. R – Squared = (covariance between benchmark and mutual fund scheme/ (Standard deviation of mutual fund scheme* standard deviation of benchmark))^2 . A high R-squared, between 85% and 100%, specifies the fund's performance patterns have been in line with the index. A fund with a low R-squared, at 70% or less, shows the security does not act much like the index.

Alpha: This ratio helps to estimate the fund manager performance. Alpha = Mutual fund scheme return – (Risk free rate of return+ (beta*(Benchmark return – Risk free rate of return). *Risk free return is the return that would be gained if it's invested in a govt bond for the same period as mutual fund. Greater the value of alpha, it's good for investor. Positive alpha numbers indicate positive returns compared to criterion and negative alpha value indicates negative returns to criterion.

Sharpe Ratio: Sharpe ratio helps the investor know how much a mutual fund delivers return with respect to the risk taken by it on comparing a fund with risk free rate of return. Sharpe ratio= (Mutual fund returns – Risk free rate of return)/ Standard deviation of mutual fund. Significance: More it's the better, if this value is negative it should be understood that the mutual fund is not performing well when compared to risk free rate of return (Govt. bonds or even a simple FD).

Treynor Ratio or reward to volatility ratio

This ratio is formulated by Jack Treynor to measure a fund's performance against the risk taken. Formula of Treynor ratio = (Mutual fund return – risk free rate of return)/ Beta of mutual fund. Significance: more the ratio, greater the returns against volatility.

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VI. RESULTS & FINDINGS

The performance of selected funds is evaluated using average return, standard deviation, Beta and R in the following ways:

Table-1: Performance in terms of Average Returns

Sl. No.	Name	AUM	1/2y (Cat Avg 11.95)	1y (Cat Avg 5.36)	3y (Cat Avg 13.15)	5y (Cat Avg 13.85)
1	**Edelweiss Large Cap Fund-DP-G**	156.36	11.77	5.59	13.81	**14.72**
2	**Reliance Large Cap Fund-DP-G**	12767.61	**14.82**	**10.26**	**16.89**	**17.37**
3	**Axis Blue Chip Fund-DP-G**	4802.16	**14.87**	**10.39**	**15.86**	**15.27**
4	**Mirae Assets India Equity Fund-DP-G**	11892.50	**13.22**	**9.93**	**17.57**	**18.63**
5	Franklin India Bluechip Fund-DP-G	8009.27	11.28	5.90	11.9	13.29
6	**SBI Bluechip Fund –DP-G**	22100.45	12.71	1.30	11.95	**16.07**
7	**Canara Robeco Bluechip Equity Fund-DP-G**	178.80	**12.80**	**8.04**	**14.64**	13.82
8	Tata Large Cap Fund-DP-G	790.24	12.62	5.36	12.48	13.47
9	LIC MF Large Cap Fund-DP-G	273.89	13.14	4.60	11.61	12.50
10	IDFC Large Cap-DP-G	414.96	9.96	4.57	13.71	11.42
	Total		127.19	65.94	140.42	146.56
	Average return		12.719	6.594	14.042	14.656

Source: www.moneycontrol.com, www.sebi.gov.in and www.amfiindia.com. Total and average return calculated by author.

An analysis of Table-1 reveals that in case of all Equity option schemes of Diversified funds, four out of ten funds have earned higher returns in comparison to their average return and average annual return. The top performers in terms of return, in the half-year and one year time duration, in decreasing order are Axis Blue Chip Fund-DP-G, Reliance Large Cap Fund-DP-G, Mirae Assets India Equity Fund-DP-G and Canara Robeco Bluechip Equity Fund-DP-G The remaining six funds have shown inferior return than the market return and thus have been unsuccessful in beating the market. Now we see that in 3y time duration, Mirae Assets India Equity Fund-DP-G has occupied the top position among four top performers in terms of return. In 5y terms , five out of ten funds have earned higher return in comparison to their average annual return. The top performers are Mirae Assets India Equity Fund-DP-G, Reliance Large Cap Fund-DP-G, SBI Bluechip Fund –DP-G, Axis Blue Chip Fund-DP-G and Edelweiss Large Cap Fund-DP-G. The remaining five funds have shown inferior return than the market return.

Table.2: performance in terms of SD, Beta and R^2

Sl. No.	Name	SD (Cat Avg 11.25)	Beta (Cat Avg 0.85)	R^2
1	Edelweiss Large Cap Fund-DP-G	13.27	1.04	0.90
2	Reliance Large Cap Fund-DP-G	13.05	0.97	0.92
3	Axis Blue Chip Fund-DP-G	12.23	0.89	0.81
4	Mirae Assets India Equity Fund-DP-G	12.46	0.96	0.97
5	Franklin India Bluechip Fund-DP-G	11.72	0.92	0.95
6	SBI Bluechip Fund –DP-G	12.31	0.94	0.93
7	Canara Robeco Bluechip Equity Fund-DP-G	12.80	0.95	0.93
8	Tata Large Cap Fund-DP-G	12.78	0.96	0.91
9	LIC MF Large Cap Fund-DP-G	12.69	0.93	0.91
10	IDFC Large Cap-DP-G	12.04	0.94	0.95

Source: www.moneycontrol.com, www.sebi.gov.in and www.amfiindia.com.

Analysis of Table-2 Return should not be considered as the soul 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 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 with it.Table-2 states that standard deviation of all the selected funds are higher than categoty average 11.25. Standard deviation (SD) measures the volatility of the fund's returns in relation to its average return .The higher the standard deviation, the more volatile is the fund's return and funds with lower volatility are to be preferred more than the others. In respect of standard deviation, the prefer fund is Franklin India Bluechip Fund-DP-G.

A fund with beta value more than 1 would move more volatile than the market. i.e. if market moves up 100% a fund with beta value of 1.5 would move up by 150% and if market comes down by 20% the fund will come down by 30%. If beta value is less than 1 it means that fund will be less volatile than the market. i.e. if market moves up 100% a fund with beta value of 0.75 would move up by 75% and if market comes down by 20% the fund will come down by 15%. So, Edelweiss Large Cap Fund-DP-G is the top performer.

A high R-squared, between 85% and 100%, indicates that the fund's performance pattern has been in line with the index. A fund with a low R-squared, at 70% or less, indicates the security does not concur much with the index. Except Axis Blue Chip Fund-DP-G, remaining all the selected funds have been in line with index.

Table.3: Performance in terms of ALPHA

Sl. No.	Name	ALPHA (Cat Avg -0.74)	Remarks
1	Edelweiss Large Cap Fund-DP-G	-0.67	Better risk adjusted return
2	Reliance Large Cap Fund-DP-G	2.38	Better risk adjusted return
3	Axis Blue Chip Fund-DP-G	1.94	Better risk adjusted return
4	Mirae Assets India Equity Fund-DP-G	3.28	Better risk adjusted return
5	Franklin India Bluechip Fund-DP-G	-2.50	Poor risk adjusted return
6	SBI Bluechip Fund –DP-G	-1.94	Poor risk adjusted return.
7	Canara Robeco Bluechip Equity Fund-DP-G	0.14	Better risk adjusted return
8	Tata Large Cap Fund-DP-G	-2.46	Poor risk adjusted return
9	LIC MF Large Cap Fund-DP-G	-2.62	Poor risk adjusted return
10	IDFC Large Cap-DP-G	-0.61	Better risk adjusted return

Source: www.moneycontrol.com, www.sebi.gov.in and www.amfiindia.com.

Analysis of Table-3 Alpha is a measure of mutual funds' performance after adjusting the risk. This ratio helps to measure the fund manager's performance. Higher the alpha, it's better for investor. Positive alpha numbers indicate positive returns compared to category average and negative alpha value indicates negative returns compared to category average. For example if alpha is 8 it means scheme would outperform category average by 8% and if alpha -8 the scheme will underperform by 8% compared to category average. Table-4 reveals that top performers of six out of ten selected funds. The top performers are Mirae Assets India Equity Fund-DP-G, Reliance Large Cap Fund-DP-G, Axis Blue Chip Fund-DP-G, Canara Robeco Bluechip Equity Fund-DP-G, Edelweiss Large Cap Fund-DP-G and IDFC Large Cap-DP-G. The remaining four selected fund have been performed badly.

The results of the Sharpe Ratios of the selected mutual fund schemes of all the growth option with the category average portfolio have been presented below:

Table.4: Performance in terms of Sharpe Ratio

Sl. No.	Name	SHARPE RATIO (Cat Avg 0.48)	Remarks
1	Edelweiss Large Cap Fund-DP-G	0.58	Better risk adjusted return
2	Reliance Large Cap Fund-DP-G	0.79	Better risk adjusted return
3	Axis Blue Chip Fund-DP-G	0.75	Better risk adjusted return
4	Mirae Assets India Equity Fund-DP-G	0.90	Better risk adjusted return
5	Franklin India Bluechip Fund-DP-G	0.42	Poor risk adjusted return
6	SBI Bluechip Fund –DP-G	0.47	Poor risk adjusted return.

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7	Canara Robeco Bluechip Equity Fund-DP-G	0.65	Better risk adjusted return
8	Tata Large Cap Fund-DP-G	0.46	Poor risk adjusted return
9	LIC MF Large Cap Fund-DP-G	0.43	Poor risk adjusted return
10	IDFC Large Cap-DP-G	0.58	Better risk adjusted return

Source: www.moneycontrol.com, www.sebi.gov.in and www.amfiindia.com.

Analysis of Table-4 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 is 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 unfavourable performance. Generally, if Sharpe Ratio is greater than the benchmark, 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-x. Six selected funds have the greater value than the Sharpe ratio category average which shows their superior performance. Top performing fund schemes as per Sharpe ratio analysis were Mirae Assets India Equity Fund-DP-G, Reliance Large Cap Fund-DP-G, Axis Blue Chip Fund-DP-G, Canara Robeco Bluechip Equity Fund-DP-G, Edelweiss Large Cap Fund-DP-G and IDFC Large Cap-DP-G. Thus, it can be concluded that the performance ,in terms of Sharpe Ratio of most of the above mentioned selected mutual funds, has been satisfactory and have outperformed the market index during the study period.

The results of the treynor ratios of the selected mutual fund schemes of all the growth option with the category average portfolio have been presented below:

Table-5: Performance in terms of Treynor Ratio

Sl. No.	Name	TREYNOR'S RATIO (Cat Avg 0.06)	Remarks
1	Edelweiss Large Cap Fund-DP-G	0.07	Better risk adjusted return
2	Reliance Large Cap Fund-DP-G	0.11	Better risk adjusted return
3	Axis Blue Chip Fund-DP-G	0.10	Better risk adjusted return
4	Mirae Assets India Equity Fund-DP-G	0.12	Better risk adjusted return
5	Franklin India Bluechip Fund-DP-G	0.05	Poor risk adjusted return
6	SBI Bluechip Fund –DP-G	0.06	Poor risk adjusted return.
7	Canara Robeco Bluechip Equity Fund-DP-G	0.08	Better risk adjusted return
8	Tata Large Cap Fund-DP-G	0.06	Poor risk adjusted return
9	LIC MF Large Cap Fund-DP-G	0.06	Poor risk adjusted return
10	IDFC Large Cap-DP-G	0.07	Better risk adjusted return

Source: www.moneycontrol.com, www.sebi.gov.in and www.amfiindia.com.

Analysis of Table-5 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 category average, then the portfolio is supposed to have outperformed the market and indicates superior risk-adjusted performance. Table Y presents the results of Treynor Ratio from the selected mutual fund schemes with their respective category average portfolios. The analysis reveals that six out of ten diversified fund schemes are greater than the category average which means that the portfolio has been able to outperform in the market and indicates the superior risk- adjusted performance. Top performing fund schemes as per treynor ratio analysis were Mirae Assets India Equity Fund-DP-G, Reliance Large Cap Fund-DP-G, Axis Blue Chip Fund-DP-G, Canara Robeco Bluechip Equity Fund-DP-G, Edelweiss Large Cap Fund-DP-G and IDFC Large Cap-DP-G.

VII. CONCLUSION

In India, numberless mutual fund schemes are available to general investors which generally confuse them to pick the best out. 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 performance of Ten 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 a nut shell, the performance of mutual fund in terms of Average returns, forty-fifty percent of the diversified fund schemes have shown higher and superior returns and remaining of them have shown inferior returns. In terms of standard deviation, hundred percent of the selected schemes have high volatility than the market. Except one, all the funds have beta less than one yet positive which imply that they were less risky than the market portfolio and in terms of coefficient of determination (R2), nine funds were near to one which indicates higher diversification of portfolio and have been in line with index. In terms of Alpha, six out of ten selected, the fund's manager's performance have been remarkable. Six out of ten funds have shown superior performance under the Sharpe ratio as well as Treynor Ratio.

From the above analysis of ten selected mutual fund schemes we are in a dilemma to choose the best amongst them because some schemes have outperformed the others in certain determinants. We have assessed ten determinants in total and three companies have made their mark to the top of the determining parameters. So we cannot determine a scheme that the most befitting and perfect of all but what we can do is that we can divide the principal amount of money amongst the schemes giving maximum benefits proportionately such that we can make out the most of it.

So in this field where we have a multitude of mutual fund companies available with fanciful and attractive schemes it becomes bewildering and baffling for common masses to choose the best of out of these without scepticism. So it's important that the common masses are made aware of these schemes without forgery and manipulations by the agents and institutions involved in mutual funds such that the illiterate and financially backward citizens, which forms the majority in India, can get a good access to these schemes and make the most out of it

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