

A Study of Equity Mutual Funds In India

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ABSTRACT

Mutual funds are an important mode of household savings mobilisation. It is an important intermediary which caters to the needs of retail investors financially. Efficient intermediation is required to attract more savings in this sector. It facilitates habit of savings among small investors and results in better capital formation in the economy. This paper intends to analyse the top Indian equity mutual fund schemes in terms of their performance over a period of eight years to provide better outlook about these investment options and encourage better investment strategy. The evaluation is based on secondary data and has been made using statistical tools such as average rate of return, standard deviation, beta, coefficient of determination, Sharpe's ratio, Treynor's ratio and Jensen's ratio.

Keywords- Mutual Funds, NAV, Sharpe, Treynor, Jensen, Ratios.

INTRODUCTION

Mutual funds constitute the most preferred investment options for the small and medium investors globally. It gives an opportunity to the small investors to be an active investor in the capital market without having to bear high levels of risk. The small gain advantage of diversification in their investments through mutual funds as otherwise they are unable to do so due to lack of resources. Mutual Fund managers collect small investments from various small investors and invest the collected corpus in the capital market in a diversified portfolio so as to ensure returns with certainty. The Mutual Fund subscribers get units of such fund on which the total returns are distributed to them. This also ensures benefits of expert and professional management of their funds to the investors.

REVIEW OF LITERATURE

Sarkar [1991] after examining the method of evaluating the performance of various mutual funds concluded that both Sharpe and Treynor evaluate mutual fund's performance in similar manner but they behave differently in the measurement of risk parameter.

Adhikari and Bhosale [1994] used monthly NAV data from Feb. 1992 to May 1994 to assess the performance eleven growth schemes. They analysed and concluded that some of the schemes studied performed better than the relevant benchmark portfolio.

Jayadev M [1998] reported that maximum schemes selected for study outperformed the benchmark portfolio with respect to systematic risk. Against this, even more schemes reported better performance in terms of total risk. The study assumed the performance of 62 mutual funds schemes using monthly NAV data for a period extending 1987 – March, 1995.

Kumar Vikas [2010] for the purpose of concerned study considered 20 mutual funds schemes with respect to five mutual funds using monthly NAV for period between 1st Jan 2000 to 31st Dec 2009 for 10 year i.e. 120 months. A comparison with rate of return of BSE National 100 index over the said period is made categorically to measure and analyse performance. The performance was measured by rate of return, total risk (i.e. S.D.), systematic risk (i.e. Beta),

coefficient of determination and risk adjusted performance suggested by Sharpe(1966), Treynor(1965) and Jensen (1968). The result was that equity schemes shows better return as compared to debt and balanced schemes in the entire lot of 20 schemes selected.

OBJECTIVES OF THE STUDY

1. To examine the volatility of the schemes selected against the market fluctuations which is measured in the terms of Beta.
2. To appraise the performance of mutual funds using the Sharpe's, Treynor's and Jensen's ratios.

SIGNIFICANCE OF THE STUDY

Studying the performance of mutual funds over a long period of time helps the investors to understand the performance and risk-return trade off offered by these funds to the investors and it shall eventually help them to make better investment decisions. Another benefit of such a historical evaluation is that it helps in appraisal of fund manager's performance, makes them understand their strengths and weaknesses better, compare their performance with competitors in the market and also take necessary corrective measures.

DATA USED

Benchmark Index- Broad- The market index has been represented by 100 shared based BSE National Index in this study because it is comparatively broader based than BSE Sensex comprising of 30 shares only, thus it includes majority of schemes which provides better benchmark for performance.

Risk Free Rate- Risk free rate of return refers to the minimum return on the investments which eliminates the risk of losing the initial investment. For the present study, it has been taken as 6.47% (.0647) per annum or 0.00542 monthly, which is the current return on government bonds.

Period of Study- For the purpose of this study monthly NAV declared by selected Mutual Fund schemes have been taken for the period starting Jan. 2011 to Dec. 2018.

For this study the top equity mutual fund schemes including both small cap and large cap (three each) have been selected on the basis of availability of data for the eight year period starting from 1st jan 2011 to 31st dec 2018. Closing NAV declared by the relevant schemes has been considered for the study. The schemes selected are-

1. Small Cap – SBI small cap mutual funds, Aditya Birla Sunlife small cap mutual fund and HDFC small cap mutual fund.
2. Large Cap – Reliance large cap mutual fund, ICICI Prudential Blue Chip mutual fund and SBI Blue Chip mutual fund.

LIMITATIONS OF THE STUDY

For this study only those schemes have been considered which have been in operation for at least last 08 years. These schemes relate to five mutual funds namely SBI, HDFC, ICICI, Reliance and Birla Sun Life. Only equity schemes have been considered for the evaluation.

DATA ANALYSIS**#Calculations**

- Average Monthly Rate of Return is calculated using monthly growth rate of closing NAVs of successive months for the period of study- Jan. 2011 to Dec. 2018. The series of monthly growth rates has been average out to calculate the respective monthly average rate of returns for each selected scheme. Monthly market return is also calculated in similar fashion using the BSE100 index for the respective period.
- Monthly Sharpe ratio = $\frac{\text{Avg. Monthly Return} - \text{Monthly Risk Free Rate}}{\text{Standard Deviation of the Scheme}}$
- Annual Sharpe ratio = Monthly Sharpe ratio X $\sqrt{12}$
- Monthly Trezor's ratio = $(\text{Avg. Monthly Return} - \text{Monthly Risk Free Rate}) \div \text{Beta}$
- Annual Trezor's ratio = Monthly Trezor's ratio X $\sqrt{12}$
- Monthly Jensen's ratio = $\text{Avg. Monthly Return} - \text{Monthly Risk Free Rate} - (\text{Beta} \times (\text{Average Monthly Market Return} - \text{Monthly Risk Free Rate}))$
- Annual Jensen's ratio = Monthly Jensen's ratio X $\sqrt{12}$

Different schemes are launched on different dates thus, for the purpose of performance evaluation the period considered is Jan, 2011 to Dec. 2018.

Table 1- Average Monthly Return Earned by the Schemes

NAME OF THE SCHEME	MONTHLY AVERAGE RATE OF RETURN
SMALL CAP SCHEMES	
1. SBI small cap mutual funds	0.017393592
2. Aditya Birla Sunlife small cap mutual fund	0.013374863
3. HDFC small cap mutual fund	0.012715744
LARGE CAP SCHEMES	
1. Reliance large cap mutual fund	0.011800076
2. ICICI Prudential Blue Chip mutual fund	0.011257052
3. SBI Blue Chip mutual fund	0.011045152

Table 1 displays the monthly average return of the selected schemes. For calculation of average monthly return earned by these schemes the growth in the value of Closing NAV for each successive month over the previous month has been divided by the value of the previous month. The series of monthly growth rates has been average out to calculate the respective monthly average rate of returns for each selected scheme. This annual average rate of return has been converted to monthly average rate of return for the purpose of further

calculations. All the schemes including small and large cap show greater return than the average market return i.e 0.008385595 as shown by BSE100 over the period of study. It is observed that small cap schemes offer better returns than large cap schemes over the study period- SBI small cap mutual funds(0.017393592), Aditya Birla Sunlife small cap mutual fund(0.013374863), HDFC small cap mutual fund(0.012715744), Reliance large cap mutual fund(0.011800076), ICICI Prudential Blue Chip mutual fund(0.011257052) and SBI Blue Chip mutual fund(0.011045152).

Table2- Standard Deviation

NAME OF THE SCHEME	STANDARD DEVIATION
SMALL CAP SCHEMES	
1. SBI small cap mutual funds	0.053571221
2. Aditya Birla Sunlife small cap mutual fund	0.052309789
3. HDFC small cap mutual fund	0.046444788
LARGE CAP SCHEMES	
4. Reliance large cap mutual fund	0.047871945
5. ICICI Prudential Blue Chip mutual fund	0.041654963
6. SBI Blue Chip mutual fund	0.040445711

Table 2 displays the standard deviation of various schemes selected for the study which is representative of the risk involved in the scheme's return. Greater the value of standard deviation more will be the risk involved in returns due. It is reported that the maximum standard deviation is shown by SBI small cap mutual fund 0.053571221 followed by Aditya Birla Sunlife small cap mutual fund 0.052309789, Reliance large cap mutual fund 0.047871945, HDFC small cap mutual fund 0.046444788, ICICI Prudential Blue Chip mutual fund 0.041654963 and SBI Blue Chip mutual fund 0.040445711 which was the least risky scheme. Standard Deviation of benchmark BSE 100 index is 0.044774247. Of all the schemes under observation only ICICI Prudential Blue Chip mutual fund and SBI Blue Chip mutual fund show less standard deviation than the market, rest all are deviating more than the market standard deviation.

CATEGORIZATION OF SCHEMES

Table 3- Risk Return Grid of Mutual Funds Schemes

	HIGH RISK	LOW RISK
HIGH RETURN	1. SBI small cap mutual fund 2. Aditya Birla Sunlife small cap mutual fund	1. HDFC small cap mutual fund

LOW RETURN	1. Reliance large cap mutual fund	1. ICICI Prudential Blue Chip mutual fund 2. SBI Blue Chip mutual fund
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TYPE 1- High return-High risk : 1.SBI small cap mutual fund 2. Aditya Birla Sunlife small cap mutual fund

TYPE 2- High return-Low risk : 1.HDFC small cap mutual fund

TYPE 3- Low return- High risk: 1.Reliance large cap mutual fund

TYPE 4- Low return-Low risk: 1.ICICI Prudential Blue Chip mutual fund 2.SBI Blue Chip mutual fund

Table 4- Co-efficient of Determination (R^2)

NAME OF THE SCHEME	COEFFICIENT OF DETERMINATION(R^2)
SMALL CAP SCHEMES	
1. SBI small cap mutual funds	0.5776
2. Aditya Birla Sunlife small cap mutual fund	0.6626
3. HDFC small cap mutual fund	0.7744
LARGE CAP SCHEMES	
4. Reliance large cap mutual fund	0.9158
5. ICICI Prudential Blue Chip mutual fund	0.9487
6. SBI Blue Chip mutual fund	0.9235

Table5- presents the systematic risk of the selected schemes. All the schemes except Reliance large cap mutual fund have beta less than 1 (i.e. market beta) which means that the portfolio of these schemes were less risky than the market portfolio. It was observed that highest beta in the case of Reliance large cap mutual fund 1.02321007 followed by Aditya Birla Sunlife small cap mutual fund 0.950996892, HDFC small cap mutual fund 0.912833141, SBI small cap mutual funds 0.909320312, ICICI Prudential Blue Chip mutual fund 0.906144599, and lowest beta in the case of SBI Blue Chip mutual fund 0.868095701.

Table 5- Systematic Risk (BETA)

NAME OF THE SCHEME	BETA
SMALL CAP SCHEMES	

1. SBI small cap mutual funds	0.909320312
2. Aditya Birla Sunlife small cap mutual fund	0.950996892
3. HDFC small cap mutual fund	0.912833141
LARGE CAP SCHEMES	
4. Reliance large cap mutual fund	1.02321007
5. ICICI Prudential Blue Chip mutual fund	0.906144599
6. SBI Blue Chip mutual fund	0.868095701

Table6- shows the value of Sharpe's ratio which is equal to the ratio of returns to variability. It is measured by the ratio of excess of return over risk free return and risk involved, i.e. per unit of standard deviation. High positive value of the index shows good performance, it could be seen that all the schemes have recorded positive Sharpe index. This implies that the funds decision for a diversified portfolio has resulted in successfully earning higher excess returns per unit of risk as compared to the market. The Sharpe index is valuable measure for small investors who wish for better diversification.

Table 6- Sharpe of the Schemes

NAME OF THE SCHEME	SHARPE RATIO
SMALL CAP SCHEMES	
1. SBI small cap mutual funds	0.785893538
2. Aditya Birla Sunlife small cap mutual fund	0.538713518
3. HDFC small cap mutual fund	0.557581103
LARGE CAP SCHEMES	
4. Reliance large cap mutual fund	0.474699113
5. ICICI Prudential Blue Chip mutual fund	0.500388867
6. SBI Blue Chip mutual fund	0.497200718

Table7- displays Treynor's ratio of the selected schemes which is the measure of ratio of excess returns over the risk free return and systematic risk i.e. beta. Here again, all the schemes recorded positive value which means that the schemes selected provide sufficiently adequate returns over the amount of risk involved in the investment. A higher Treynor's ratio as compared to the market index implies that investor received sufficient returns per unit of systematic risk undertaken and was able to benefit from adequate diversification of the portfolio.

Table 7- Treynor of the Scheme

NAME OF THE SCHEME	TREYNOR'S RATIO
SMALL CAP SCHEMES	
1. SBI small cap mutual funds	0.046299726
2. Aditya Birla Sunlife small cap mutual fund	0.029632054
3. HDFC small cap mutual fund	0.02836963
LARGE CAP SCHEMES	
4. Reliance large cap mutual fund	0.022209295
5. ICICI Prudential Blue Chip mutual fund	0.023002603
6. SBI Blue Chip mutual fund	0.023165232

Table8- displays the Jensen's Ratio. It is the regression of excess return of the scheme with excess return of the market, acting as dependent and independent variables respectively. This ratio is also known as alpha and a high positive value of alpha indicates better performance of the schemes. The analysis of the table reveals that all the schemes have positive Jensen's Measures. A high positive value of Jensen's ratio shows the ability of the manager to take benefit of the market timing with regard to investment in securities

Table 8- Jensen's of the Scheme

NAME OF THE SCHEME	JENSON'S RATIO
SMALL CAP SCHEMES	
1. SBI small cap mutual funds	0.032136181
2. Aditya Birla Sunlife small cap mutual fund	0.017786746
3. HDFC small cap mutual fund	0.015895553
LARGE CAP SCHEMES	
4. Reliance large cap mutual fund	0.011589672
5. ICICI Prudential Blue Chip mutual fund	0.01091121
6. SBI Blue Chip mutual fund	0.010568046

Performance Appraisal

- i. As far as average rate of return is concerned, all selected small cap schemes show greater returns than the large cap schemes. Also, both large and small cap schemes are giving higher returns in comparison to the market return (0.008385595).
- ii. The total risk as calculated and measured by standard deviation shows that ICICI Prudential Blue Chip large cap mutual fund and SBI Blue Chip large cap mutual fund are the only schemes which are found to be less risky

than the market (market standard deviation being 0.0447). SBI small cap mutual fund was the most risky scheme with highest standard deviation followed by Aditya Birla SunLife small cap mutual fund which clearly shows that with greater returns comes greater risks.

- iii. As far as systematic risk is concerned which is measured by beta, it is observed that all schemes except Reliance large cap mutual fund have low systematic risk as value of beta is less than 1 for each of them.
- iv. The coefficient of Determination (R^2) measures the extent to which market index has been able to explain the variation in mutual funds. The maximum and minimum value of R^2 was found in the case of ICICI Prudential Blue Chip mutual fund (0.9487) and SBI small cap mutual funds (0.5776) respectively
- v. As per Sharpe ratio SBI small cap mutual fund maintain 1st Rank followed by HDFC small cap, Aditya Birla SunLife Small cap, ICICI Prudential blue chip and so on. Least Sharpe ratio was found in the case of Reliance large cap Fund.
- vi. As per Treynor Ratio SBI small cap mutual fund has the highest ratio, followed by Aditya Birla SunLife Small cap, HDFC small cap and the large cap schemes thereafter. Least Treynor's ratio was found in the case of Reliance Large Cap mutual fund.
- vii. As per Jensen's alpha SBI small cap mutual fund has performed best while lowest Jensen's alpha found in the case of SBI Blue Chip fund.

CRITICAL ANALYSIS

Since Sharpe ratio is positive for all the selected schemes hence it can be concluded that all of these schemes are beneficial to the investors as there is sufficient diversification and hence it would be possible to shield the small investors against fluctuations and uncertainties of the market. The managers of these schemes have been able to substantially protect the investors.

Treynor ratio is measured by the ratio of excess return over risk free return and the systematic risk i.e. beta. The Treynor's measure for all the selected schemes shows positive values which indicates that investors received adequate return per unit of systematic risk undertaking due to ill diversified portfolios.

Jensen's measure is the regression of excess return of the scheme with excess return of the market. A high positive value of alpha of any scheme means its better performance.

CONCLUSION

On the whole it can be concluded that all of the selected schemes are beneficial for small investors as they offer good diversification. Small cap schemes give greater returns than large cap ones. In the long run it is observed that all the selected schemes offer returns which are greater than the market return but may involve high degree of risks. HDFC small cap mutual fund shows up to be the best scheme in terms that it gives high returns for low degree of risks while Reliance large cap mutual fund scheme is the least desirable as it involves high degree of risk for little returns. Thus household investors and fixed income investors are suggested to invest in HDFC small cap scheme and risk savvy investors are suggested to invest in SBI small cap scheme and Aditya Birla SunLife small cap scheme to earn greater returns. SBI small cap scheme is the best performer with respect to the Sharpe, Treynor and Jensen's ratios as it shows higher indices as compared to other schemes. It is also observed that small cap schemes as a group perform better than large cap ones on all parameters in the long run.

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