

PERFORMANCE EVALUATION OF EQUITY MUTUAL FUNDS IN INDIA

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ABSTRACT

Mutual funds have become a hot favourite of people all over the world. The driving force of mutual funds is the safety of the principal guaranteed plus the added advantages of capital appreciation together with the income earned in the form of interest or dividend. Equity funds have the objective to provide capital appreciation over a long term. An equity fund is a mutual fund scheme that invests predominantly in share/stocks of companies. This study attempts to evaluate the performance of selected large cap mutual fund schemes by using the Sharpe, Treynor model ratio in terms beta.

Key words: Mutual funds, dividend, Sharpe ratio, Treynor ratio.

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1. INTRODUCTION

Mutual funds are a trust for pools the saving from investors through the sales of the units. Thus collected fund invested into various market instruments such as securities, bonds and debenture etc. The income which is obtained from these investments is distributed to the investors on the proportion of number of units hold by them. Mutual funds have becomes a hot favourite of people all over the world. Mutual fund collects the savings from small investors invest them in government and other corporate securities and earn income through interest and dividend, besides capital gain (Gopinath & Poornapriya, 2020). It works on the principles of 'Small drop of water make a big ocean'.

To get the surplus funds from investors, the fund adopts a simple technique. Each fund is divided into in proportion to the size of his investment. Mutual funds enable million of small and large investors to participate in and derive the benefit of the capital market growth. The

mutual fund has emerged as a popular vehicle of creation of wealth due to high return, lower cost and diversified risk.

The Securities and Exchange Board of India (mutual funds) Regulations 1993 (SEBI) defines 'a mutual fund as a fund established in the form of a trust by a sponsor, to arise monies by the trustees through the sale of units to the public, under one or more schemes for investing in securities in accordance with these regulation'.

Investment in securities is spread across a wide cross section of industries and sectors and thereby reduce the risk (Pavithran et al., 2018). Assets management companies (AMCs) normally come out with a number of schemes with different investment objectives from time. A mutual fund is compulsory to be registered with the Securities and Exchange Board of India (SEBI), which regulates securities markets before it can collect funds from the public.

The value of a share of the mutual fund, known as the net asset value per share is calculated daily based on the total value of the fund divided by the number of share currently issued and outstanding. As information and awareness is rising more and more people are enjoying the benefit of investing in mutual funds (Gopinath et al., 2019). The relation between risk and return determines the performance of a mutual fund schemes.

1.1. Equity Funds

Equity funds have the objective to provide capital increase over a long period. A major portion of their investment is in equities which provide potentially superior return than other avenues of investment. Equity schemes offer hypothetically the best possible returns among all mutual fund schemes but carry the highest risk as well. An equity fund is a mutual fund scheme that invests predominately in share/stocks of companies. They are also known as growth funds. Equity fund are either active or passive (Kavitha & Gopinath, 2020).

Equity mutual fund invests at least 60% of the assets in equity shares of numerous companies in suitable proportions. The assets allocation will be in line with the investment objective. The asset allocation can be made purely in stock of large cap, mid cap or small cap companies (Saminathan et al., 2020).

2. REVIEW OF LITERATURE

Gupta (1981) presented a detailed and well-based estimate of "Portfolio" rate of return on equities. This original study in the Indian context has been a major contribution in this field and is regarded as the benchmark on the rate of return on equities for the specified time. He laid the basis of rate of return concept in performance evaluation.

Haslem (1988), projected fund performance by comparing the fund return with the return on market portfolio with the comparable risk. The fund's systemic risk, beta co-efficient is used to compare fund's portfolio risk relative to the market portfolio risk.

Hudson (1997), stated that wherever performance evaluation is implemented, there will always be two key ingredients (a) a measure of return and (b) a measure of risk, over a given time horizon. Proper evaluation and comparison is possible only if the reporting standard is of high quality and there are well based standards for calculating Net Asset Values (NAV).

Bers and Madura (2000), examined the performance persistence of 384 domestic closed-end funds in the United States. They employed the regression test to assess the persistence of performance over the periods. They established net asset value and market price based performance persistence for each type of closed end fund over 12-, 24-, and 36-month holding periods. The results differ slightly between fund groups and over different holding periods.

Narayan Rao (2002), in his paper “Performance Evaluation of Indian Mutual Funds” conducted a study to understand whether most of the mutual fund schemes were able to gratify investor’s expectations by giving excess returns over expected returns.

Soumya Guha (2008), in his paper had suggested that in her evaluation of fund managers performance found that Indian equity fund managers have not been able to evacuate their style benchmarks (William Sharpe ratio) on the average and pointed out the weaknesses of fund managers.

Sathya Swaroop Debashish (2009), measured the performance of the equity based mutual funds in India. 23 schemes were studied over a period of April 1996 to March 2009 (13 years). The analysis was done on the basis of mean return, beta risk, and coefficient of determination, sharp ratio, Treynor ratio and Jensen alpha. The first analysis has been done on the basis of returns, followed by a comparison between market returns and the return on schemes. It was concluded that UTI mutual fund schemes and Franklin Templeton schemes have performed excellently in public and private sectors respectively.

Nimalathasan and Kumar Ghandhi (2012) studied the financial performance analysis of mutual fund schemes (equity diversified schemes and equity mid-cap schemes) of selected banks. The objective of their research work is to analyse the financial performance of selected mutual fund schemes through the statistical parameters (Standard Deviation, Beta and Alpha) and ratio analysis.

3. OBJECTIVE OF THE STUDY

- To study the performance of the selected mutual funds under growth schemes
- To evaluate the investment performance of selected mutual fund schemes using Sharpe, Treynor measures.

4. RESEARCH METHODOLOGY

The present study is based on secondary data which is collected from various sources like published annual report of the sponsoring agencies, online sources, AMFI, newspapers, journals book, magazines, and other online materials.

There are 41 large cap mutual fund companies functioning in India in the year 2019. Top five large cap mutual fund companies such as Aditya Birla Sun Life Frontline Equity Fund, HDFC Top 100 Fund, ICICI Prudential Blue-chip Fund, SBI Blue Chip Fund-Direct Plan and Nippon India Large Cap Fund have been selected based on their AUM (Asset under Management) value. The study focused only on the equity mutual fund growth schemes randomly from the short listed mutual fund companies.

4.1 Period of Study

The present study consists of 5 mutual fund schemes launched by different private mutual fund sector. The time period of this research work is from 1st January 2015 to 31st December 2019. The NAV of the selected scheme have been compared for five years with annual return.

Benchmark Index: For this study, S&P BSE 100, Nifty 50, Nifty 100, because BSE National index is comparatively broad then BSE Sensex is constituted of 30 shares only. Nifty index is comparatively broad then Nifty is constituted of 50 shares only. Hence it would cover the majority percentage of different scheme portfolios and expected better performance.

4.2. Tools used for Data Analysis

Return: The return on investment is classification of two types, the first classification based on periodic cash receipts on the investment, either in the form of interest or dividend, the second

classification is the change in price of the assets called the capital gain or loss. The element of return is the difference between the purchase price and price at which the assets sold.

The return can be calculated as under:

$$\text{Portfolio Return } (R_{it}) = \frac{\text{Today's NAV Price} - \text{Yesterday's NAV Price}}{\text{Yesterday's NAV Price}} \times 100$$

Where R_{it} is the difference between Net Assets Value for consecutive days dividend by the NAV of the preceding day.

$$\text{Market Return } (R_{mt}) = \frac{\text{Today's Index Return} - \text{Yesterday's Index Return}}{\text{Yesterday's Index Return}} \times 100$$

Where R_{mt} is the difference between market indices of two consecutive days dividend by the market index for the preceding day.

Risk

Risk refers to the possibility that the actual outcome of an investment will differ from the expected outcome. It also refers variability or dispersion analysis of the total return of an equity. The most commonly used measure of risk in finance is variance or its square root of the standard deviation.

Standard Deviation

Standard deviation is a statistical tool that measures the deviation or dispersion of the data from the mean or average. To find out standard deviation on a mutual fund the rates of return are added up for the period we want to measure and divide by the total number of rate data points to find the average return.

Beta

Beta is a measure of the volatility of a particular fund in comparison to the market as a whole, that is the extent to which the funds return is impacted by market factors.

Sharpe's Index

William Sharpe has given a model for evaluating the fund's performance on a risk-adjusted basis. His model is based on the comparison of excess return per unit of risk for both the fund and the bench mark.

$$\text{Excess return} = \text{Actual return of the fund} - \text{Risk free rate}$$

$$S = \frac{R_p - R_f}{S.D.}$$

Where, S = Sharpe's Index; R_p = Portfolio Return, R_f = Risk free of return, SD = Standard deviation of portfolio.

Treynor's Index

Treynor's model is one of the concepts of the characteristic straight line. The characteristics line is drawn between the market return and specific portfolio without taking into consideration any direct adjustment for risk.

The formula for Treynor's Index is:

$$\text{Treynor's Index (Tn)} = \left[\frac{\text{Portfolio avg return (Rp)} - \text{Risk free rate of interest (Rf)}}{\text{Beta coefficient of portfolio (Bp)}} \right]$$

$$T_n = \frac{R_p - R_f}{B_p}$$

Where, R_p = average return of portfolio; R_f = riskless rate of interest

B_p = measure of systematic risk.

The ratio represents only a fraction of total assets of the investors for whom we are measuring the performance higher ratio indicates better performance with high returns with low risk.

5. LIMITATIONS OF THE STUDY

- i) The data is collected for the limited period i.e., five years from 2015 - 2019
- ii) The study has been conducted and analysed based on set of available data.
- iii) Only selected five large cap mutual fund schemes are considered in this study.

5.1. Data Analysis and Interpretation

Table 1 Sharpe Ratio for selected Mutual Fund Schemes

Name of the Fund Schemes	2015	2016	2017	2018	2019
Aditya Birla Sun Life Frontline Equity Fund- Growth	0.077	0.411	11.396	-1.294	2.419
HDFC Top 100 Fund - Growth	-2.314	1.399	7.941	-0.629	-0.231
ICICI Prudential Bluechip Fund – Growth	-0.793	1.255	11.394	-1.021	3.031
SBI Blue Chip Fund-Direct Plan – Growth	2.295	1.505	7.659	2.057	3.481
Nippon India Large Cap Fund - Growth	0.135	-2.294	-1.209	-0.639	1.843

Source: Amfi .com

The table 1 shows the Sharpe ratio of selected mutual fund schemes for the Calendar year 2015 – 2019. The selected mutual fund schemes performed the best risk adjusted performance during the Calendar year 2017. Among the funds, Aditya Birla Sun Life Frontline Equity Fund - Growth is considered as the best one with a ratio of 11.396 and the least performance was shown by Nippon India Large Cap Fund- Growth fund which has a ratio of – 1.209 for the same year. The performance of all selected mutual fund schemes was really low during the Calendar year 2018. In the year 2019 as compared to other schemes SBI Blue Chip Fund-Direct Plan – Growth (3.481) and ICICI Prudential Blue chip Fund – Growth (3.031) are the best performed funds and HDFC Top 100 Fund – Growth (-0.231) is the least performing fund.

Table 2 Sharpe Market Index Ratio for selected Mutual Fund Schemes

Name of the Fund Schemes	2015	2016	2017	2018	2019
Aditya Birla Sun Life Frontline Equity Fund-Growth	-2.485	0.548	8.984	0.012	3.708
HDFC Top 100 Fund - Growth	-0.995	0.677	10.507	-0.406	3.304
ICICI Prudential Bluechip Fund – Growth	-1.011	0.679	9.675	0.094	3.297
SBI Blue Chip Fund-Direct Plan – Growth	-1.237	0.667	9.87	-0.399	3.061
Nippon India Large Cap Fund-Growth	-1.275	0.768	9.87	-0.213	3.061

Source: Amfi .com

The table 2 shows the Sharpe Market Index ratio of selected mutual fund schemes for the Calendar year 2015 – 2019. The selected mutual fund schemes performed the best risk adjusted performance during the Calendar year 2017. Among the various funds, HDFC Top 100 fund (G) is considered as the best with a ratio of 10.507 followed by SBI Blue Chip Fund-Direct Plan -Growth & Nippon India Large Cap Fund- Growth in the ratio of 9.87 in the same year. The least performance was shown by all mutual fund schemes in the year of 2015 and 2018. In the year 2018 all funds have showed negative Sharpe Market Index except Aditya Birla Sun Life Frontline Equity Fund-Growth (.012). In the year 2019 compared to other schemes Aditya Birla Sun Life Frontline Equity Fund-Growth (3.708) and HDFC Top 100 Fund - Growth (3.304) are the best performer funds and in the same year SBI Blue Chip Fund-Direct Plan - Growth & Nippon India Large Cap Fund- Growth (3.061) are gained equally.

The table 2 shows the Treynor ratio of the selected mutual fund schemes for the Calendar year 2015 – 2019. The selected mutual fund schemes performed the best risk adjusted performance during the Calendar year 2017. Among the funds, HDFC Top 100 fund (G) was considered as the best one with a ratio of 1.359. The least performance was shown by Nippon India Large Cap Fund - Growth fund which has a ratio of – 0.557 in the year 2017. The performance of all selected mutual fund schemes was low during the year 2018. In the year 2019, SBI Blue Chip Fund – Direct Plan – Growth(0.611) is performed high and HDFC Top 100 Fund – Growth (-0.033) performed low.

Table 3 Treynor Ratio for selected Mutual Fund Schemes

Name of the Fund Schemes	2015	2016	2017	2018	2019
Aditya Birla Sun Life Frontline Equity Fund-Growth	0.012	0.101	1.274	-0.281	0.382
HDFC Top 100 Fund - Growth	-0.339	0.439	1.359	-0.141	-0.033
ICICI Prudential Bluechip Fund – Growth	-0.163	0.163	1.278	0.022	0.528
SBI Blue Chip Fund-Direct Plan -Growth	0.374	0.355	2.025	0.803	0.611
Nippon India Large Cap Fund- Growth	0.022	-1.438	-0.557	-0.145	0.408

Source: Amfi .com

Table 4 Treynor Market Index Ratio for selected Mutual Fund Schemes

Name of the Fund Schemes	2015	2016	2017	2018	2019
Aditya Birla Sun Life Frontline Equity Fund-Growth	-0.42	0.129	1.182	0.002	0.595
HDFC Top 100 Fund - Growth	-0.159	0.165	1.336	0.092	0.523
ICICI Prudential Bluechip Fund - Growth	-0.093	-0.062	0.034	-0.069	-0.029
SBI Blue Chip Fund-Direct Plan -Growth	-0.202	0.163	1.285	-0.089	0.491
Nippon India Large Cap Fund-Growth	-0.206	0.195	1.286	-0.048	0.495

Source: Amfi .com

The table 4 shows that the Treynor Market Index ratio of selected mutual fund schemes for the Calendar year 2015 – 2019. The selected Mutual fund schemes performed the best risk adjusted performance during the Calendar year 2017. Among the funds HDFC Top 100 fund (G) was considered as the best with a ratio of 1.336 followed by the Aditya Birla sun Life Frontline Equity Fund (G) in the ration of 1.182 in same year. In the year 2018 all funds are performed poor and three funds showed negative performance. The least performance was shown by all mutual fund schemes in the year of 2015 and 2018. Aditya Birla Sun Life Frontline Equity Fund-Growth performed well compare to other funds.

Table 5 Beta Evaluations for Selected Mutual Fund Schemes

Name of the Fund Schemes	2015	2016	2017	2018	2019
Aditya Birla Sun Life Frontline Equity Fund-Growth	0.998	1.001	0.997	0.996	0.999
HDFC Top 100 Fund - Growth	1.005	0.985	0.996	1.008	1.008
ICICI Prudential Bluechip Fund - Growth	0.999	1.001	0.998	0.991	0.997
SBI Blue Chip Fund-Direct Plan - Growth	0.996	0.996	1.005	1.011	1.001
Nippon India Large Cap Fund-Growth	1.003	0.954	1.005	1.002	0.993

Source: Amfi .com

The table 5 reveals that, beta values for the selected schemes respond to the market force. By considering the standard market beta which is 1, it is clear that two mutual fund schemes are above the standard in 2015. In 2016 Aditya Birla and ICICI Prudential both the mutual fund schemes above the standard. SBI Blue chip funds has got beta above the standard continuously from 2017 to 2019.

Table 6 Standard Deviation for selected Mutual Fund Schemes

Name of the Fund Schemes	2015	2016	2017	2018	2019
Aditya Birla Sun Life Frontline Equity Fund-Growth	0.16	0.25	0.11	0.24	0.16
HDFC Top 100 Fund - Growth	0.15	0.31	0.17	0.23	0.14
ICICI Prudential Bluechip Fund – Growth	0.16	0.25	0.12	0.2	0.15
SBI Blue Chip Fund-Direct Plan – Growth	0.16	0.23	0.27	0.39	0.18
Nippon India Large Cap Fund- Growth	0.16	0.6	0.46	0.23	0.22

Source: Amfi .com

The table 6 shows the standard deviation of selected mutual fund schemes for the Calendar year 2015 – 2019. In 2016 and 2017 Nippon India large cap fund (G) showed higher percentage and in the year of 2017 Aditya Brila sun life frontline equity fund (G) scheme showed lowest percentage in the year.

Table 7 R-square values for selected Mutual Fund Schemes

Name of the Fund Schemes	2015	2016	2017	2018	2019
Aditya Birla Sun Life Frontline Equity Fund-Growth	0.824	0.918	0.880	0.906	0.960
HDFC Top 100 Fund - Growth	0.738	0.869	0.984	0.821	0.384
ICICI Prudential Blue-chip Fund – Growth	0.924	0.976	0.966	0.955	0.949
SBI Blue Chip Fund-Direct Plan – Growth	0.882	0.945	0.428	0.482	0.933
Nippon India Large Cap Fund- Growth	0.850	0.534	0.036	0.897	0.906

Source: Amfi .com

The table7 shows the R-square values of selected mutual fund schemes for the Calendar year 2015 – 2019 between a portfolio and benchmark. In 2019, the R-squared value of Aditya Birla Sun Life Frontline Equity fund is 0.960, ICICI Prudential Blue-chip Fund is 0.949, SBI Blue Chip Fund-Direct Plan is 0.933 and Nippon India Large Cap Fund- Growth is 0.906, hence these funds have high positive correlation with its benchmark return. Also, the R-square value for HDFC Top 100 Fund is 0.384, hence has low positive correlation with its benchmark return.

6. FINDINGS

The following are the findings observed from the selected mutual funds:

- Based on Sharpe ratio method, Aditya Birla Sun Life Frontline Equity Fund-Growth is considered as the best one among other mutual fund schemes.
- Based on Sharpe market index ratio HDFC Top 100 fund (G) got more index value compared to other mutual funds.
- As per Treynor ratio method HDFC Top 100 fund (G) was considered as the best compared to other mutual funds.
- Investment in HDFC Top 100 Fund – Growth and SBI Blue Chip Fund-Direct Plan – Growth would be risky, since beta is more than 1.
- Nippon India Large Cap Fund- (G) has the highest standard deviation when compared to other mutual fund schemes.
- Aditya Birla Sun Life Frontline Equity fund has funds with high positive correlation with its benchmark return than other funds during the year 2019.

7. CONCLUSION

From aforesaid, performance evaluation of equity mutual funds with special reference to equity large cap funds, it's clear that all the selected funds have performed well during the study period. The fall in fund index value in the year 2018 has impact of performance of all selected mutual funds. In the ultimate analysis it may be concluded that all funds performed well in the high volatile market movement. Therefore it is essential for investors to consider statistical parameters like Beta and Standard deviation as well as the NAV and Total Return in order to ensure consistent performance while investing in mutual funds.

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