

**PERFORMANCE EVALUATION OF GROWTH ORIENTED MUTUAL FUND  
SCHEMES IN INDIA**

*Dr. Ramchandra D. Patil*  
*Faculty, Bharati Vidyapeeth Deemed University,*  
*Institute of Management and Rural Development Administration, Sangli (M.S.).*

---

*Abstract*

*Maximum return with minimum risk is fundamental principle of any investment decision. The Indian capital market has provided various investment avenues which help the investors to maintain the balance between risk and return. All the direct investors are not able to make an investment in such a manner where more profit is earned with less risk, due to one or more reasons. Therefore, one of the important ways to invest in balanced manner is to invest through mutual funds. While investing through mutual fund schemes it is necessary to know the performance of available mutual fund schemes, so that investment can be more profitable. The endeavour of the present study is to understand risk and return of the various Open-ended Mutual Fund Schemes operating in India. The data used in the present study is purely secondary data and derived from the websites of Reserve Bank of India, Association of Assets Management Companies etc. The performance of various Mutual Fund Schemes has been measured by using Sharpe's Ratio, Treynor's Ratio and Jensen's Ratio. From the study, it is observed that all the selected schemes have outperformed and paid very high return as compared to market return or risk free return during the study period. But the study also reveals that, except one, portfolio risk of all schemes is higher than the market risk.*

*Key words- Mutual Fund, investment decision, Investment Avenue, Sharpe's Ratio, Treynor's Ratio & Jensen's Ratio.*

**I. INTRODUCTION**

A **mutual fund** is a financial institution that pools savings from individual and institutional investors which is used to purchase securities of the various companies. It is also known as professionally managed investment fund. Mutual fund scheme is most suitable investment instrument basically for three different types of investors. First, the investor who is not having sufficient money to purchase the securities of a specific company where is required to purchase specific quantum securities by investing specific amount of money. Second, the investor who does not have knowledge of capital market, and therefore, who is not able to make necessary changes in his portfolio as per market requirements. The third category of investors includes the investors who have enough money to be invested as well as knowledge of capital market to take any profit making decision, but do not have time to keep updated with capital market changes and make the change in portfolio accordingly. If consider the investments in mutual funds as compare to direct investment in individual securities and mutual funds have got advantages as well as disadvantages.

Mutual funds are usually classified four main categories. The funds are classified in different categories like money market funds, fixed income funds, equity funds, and hybrid funds. In India mutual funds categories are – Equity Fund, Debt Fund, Balanced Fund, Gilt Fund, Dynamic Fund, Exchange Traded Fund, Speciality Fund and Fund of Funds.

The Unit Trust of India (UTI) was the first mutual fund launched in India in 1963. Mutual fund market was dominated by UTI in India until 1987. In 1987 SBI Mutual Fund and Canbank Mutual were started. The investible funds at market value in 1965 were amounting Rs.49 crores, which increased to Rs. 5068 crores by June 1987. The Assets Under Management in 2001-02 were amounting to about Rs 1 lakh crore which went up to Rs.6.75 lakh crores on June 30, 2010. Showing the increasing trend AMU amount lifted to Rs.13.81 crores by the end of May, 2016.

## **II. OBJECTIVES OF THE STUDY**

The following are the objective of present study-

- i. To study the average annual returns of the selected Mutual Fund Schemes.
- ii. To calculate the average rate of Market Return and Risk Free Return of the same period.
- iii. To calculate and study the portfolio risk and market risk.
- iv. To evaluate the comparative performance of each scheme by using Sharpe Ratio, Treynor's Ratio & Jensen's Ratio.

## **III. METHODOLOGY**

The present study is based completely on the secondary data which have been derived from the various following sources:

- i. Books
- ii. Journals
- iii. Internet.

The collected data from these sources is analysed by excel worksheets. The various statistical techniques like standard deviation, variance, co-variance, and co-relation have been used in the present study to analyse the collected data.

The analysed data have been presented with the help of various tables as per requirement.

## **IV. SCOPE OF THE STUDY**

The scope of the present study is confined to ten outperforming Open Ended Mutual Fund Schemes, on the basis of the average return paid by them during last five financial years (2011-12 to 2015-16). The performance of these schemes has been measured by using the selected ratios (Sharpe's Ratio, Treynor's Ratio and Jensen's Ratio).

## **V. LIMITATIONS OF THE STUDY**

The present study has got the following limitations-

- i. It is based on the performance of only selected Open Ended Mutual Fund Schemes.
- ii. The data used in the present study is of last five financial years (2011-12 to 2015-16).

iii. The results of the study are base on analysis of the data using the selected techniques.

## VI. REVIEW OF LITERATURE

Kumar (2011), in his research paper has studied the funds sensitivity to the market risk and risk-return adjustment of mutual funds. He has observed that few mutual funds from the selected funds have outperformed as compared to market return in relation to risk- return criteria. Aragon and Ferson (2006), had objective to evaluate the performance of professionally managed portfolios. They have observed that the majority of funds deliver Sharpe Ratios exceeding that of the market index for nearly all style categories. Bahl and Rani (2012), in their research paper entitled "A Comparative Analysis of Mutual Fund Schemes in India" with a major objective of evaluating the performance of mutual fund schemes have observed that 48.27 per cent of sample schemes have outperformed and some schemes had underperformed these schemes were facing the diversification problem. The outcome of the study of Qamruzzaman (2014) is that the majority schemes are not highly diversified unless few mutual funds and have more risk. The study was conducted in Bangladesh. He also observed the lack of availability of quality shares and underdeveloped state of the capital market has been major hurdle for mutual funds. The main objective of this research article of Narayansamy and Rathnamani(2013) was to analysis performance of selected mutual fund schemes and compare the same with market performance through the statistical parameters. The study is based on the secondary data collected from the various sources. In the study found that all the selected equity large cap funds have performed well during the study period. Ferson (2010) had a main objective of his paper to review the literature on investment performance evaluation. The author has found that random discount factor approach combines the issues and offers some new insights. He has observed that there are some forces have brought this field of research to its current state of knowledge. The title of the research paper of Taneja and Bansal (2011) was "Efficient Security Selection: A Study of Portfolio Evaluation Techniques". The prime objective of the study was to select efficient securities using portfolio performance models. The study has revealed that the companies, who got their unsystematic risk well diversified, would give like results under both the models.

Eling and Schuhmacher (2007) looked at the consistency of various performance evaluation measures in ranking 2,763 hedge funds over the period from 1985 to 2004. The performance measures examined the consistence of the traditional Sharpe ratio, the Treynor measure and Jensen's alpha. The consequences of their tests displayed that the rank correlation coefficients among the overall performance measures are 90% and above.

**Expected return:** Expected return is calculated as the weighted average of the likely profits of the assets in the portfolio, weighted by the likely profits of each asset class. Expected return is calculated by using the following formula:

$$E(R) = \sum_{i=1}^n P_i \times R_i$$

Written another way, the same formula is as follows:  $E(R) = w_1R_1 + w_2R_2 + \dots + w_nR_n$

**Standard Deviation (SD/σ):** The total risk of the mutual fund scheme is measured by SD. SD shows how much return on fund is deviating from the expected returns based on its historical performance.

$$\sigma = \sqrt{\frac{1}{N} \sum_{i=1}^N (x_i - \mu)^2}$$

X: individual data point

u: mean of data points

N: total # of data points

**Variance & Covariance:** The variance of a portfolio's return is a function of the variance of the component assets as well as the covariance between each of them. Covariance is a measure of the degree to which returns on two risky assets move in tandem. A positive covariance means that asset returns move together. A negative covariance means returns move inversely. Covariance is closely related to "correlation," wherein the difference between the two is that the latter factors in the standard deviation.

$$\sigma^2 = \frac{\sum (X - \mu)^2}{N}$$

X: individual data point

u: mean of data points

N: total # of data points

A. *Correlation: Correlation, in the finance and investment industries, is a statistic that measures the degree to which two securities move in relation to each other. Correlations are used in advanced portfolio management. Correlation is calculated by using correlation coefficient. The value of correlation lies between -1 and 1.*

$$P_{xy} = \frac{\text{Cov}(r_x, r_y)}{\sigma_x \sigma_y}$$

B.

$r_x$  = Return of Security X

$r_y$  = Return of Security Y

$\sigma_x$  = Standard Deviation of Security X

$\sigma_y$  = Standard Deviation of Security y

**Beta(β):** β is a measure of volatility of a particular fund in a comparison to the market as a whole, that is, the extent to which the funds return is impacted by the market factor.

**Sharpe Ratio:** The simplest risk adjusted performance measure the Sharpe ratio. This Sharpe Ratio measures the degree to which a portfolio is able to yield a return in excess of the risk free return to cash per unit of risk. This ratio was used by Sharpe (1966) to evaluate the performance of Mutual Fund.

Sharpe ratio = (Mean portfolio return – Risk-free rate)/Standard deviation of portfolio return

$$= \frac{\bar{r}_p - r_f}{\sigma_p}$$

Where:

$\bar{r}_p$  = Expected portfolio return

$r_f$  = Risk free rate

$\sigma_p$  = Portfolio standard deviation

**Treynor Ratio:** It is the excess return over risk free return per unit of systematic risk i.e. Beta( $\beta$ ). Positive value of ratio indicates that scheme provides adequate returns as against the level of risk involved in the investment.

**Treynor Ratio =**

$$= \frac{\bar{r}_p - r_f}{\sigma_p}$$

Where:

$\bar{r}_p$  = Expected portfolio return

$r_f$  = Risk free rate

$\sigma_p$  = Portfolio standard deviation

**Jensen's Alpha:**  $\alpha$  basically is the difference between the actual returns and returns an investor expects from a fund. A positive  $\alpha$  means the fund has outperformed its benchmark index. The higher the alpha, the more a portfolio has earned above the level predicted.

$$\hat{\alpha}_j = R_i - [R_f + \beta_{IM} (R_m - R_f)]$$

Where

$R_i$  = Portfolio Return

$R_f$  = Risk Free Rate

$\beta_{IM}$  = Portfolio Beta

$R_m$  = Market Return

**Risk Free Return:** In the present study the average rate of return of 91days Treasury Bills have been used.

**Risk and Return:** The risk-return trade off is the fundamental principle of investment decision. This principle reveals that possibility of return increases with an increase in risk. The low level of uncertainty or risk decreases potential return, as against whereas high levels of uncertainty or risk increases the possibilities of earning more returns. According to this principle invested money can make higher profits only if the investor is willing to accept the possibility of losses.

Table 1 is showing the average rate returns generated by the various selected portfolios during the study period, average rate of risk free returns and average rate of market returns of the same period.

**Table 1**  
**Statement Showing Portfolio Return, Risk Free Return and Market Return**

Portfolio	Portfolio Return	Risk Free Return	Market Return
Franklin (I) Smaller Cos (G)	0.2100	0.08228	0.042611
Can Robeco Emerg-Equities (G)	0.2110	0.08228	0.042611
SBI Magnum Midcap Fund (G)	0.2116	0.08228	0.042611
Reliance Small Cap Fund (G)	0.2128	0.08228	0.042611
Birla Sun Life MNC Fund (G)	0.2171	0.08228	0.042611
Mirae Emerging Bluechip Fund (G)	0.2195	0.08228	0.042611
Motilal MOST Shares NASDAQ 100 ETF	0.2195	0.08228	0.042611
DSP-BR Micro Cap Fund - RP (G)	0.2300	0.08228	0.042611
SBI Pharma Fund (G)	0.2400	0.08228	0.042611
UTI Transport & Logistics (G)	0.2547	0.08228	0.042611

The table show that the average rate of risk free return and average rate market return have been about 8.23% and 4.26% respectively. During the study period, the average rate of returns of all selected portfolios have been very much high ranging from 21% to 25.47% and average rate of market return has been 4.26%. The portfolio return rates have been much over and above the level of average risk free rate of returns and market rate of returns of the same period. The UTI Transport & Logistics has shown an excellent performance paying 25.47% average return and Franklin(I) smaller Cos has shown poor performance by paying 21% returns. But as compared to risk free return and market return the return of the Franklin(I) smaller Cos is also very high.

**Table 2**  
**Statement Showing the Stand alone Risks and Relations**

Portfolio	Standard Deviation	Variance	Correlation	Covariance
UTI Transport & Logistics (G)	0.06245	0.0039001	0.785724	0.002255
DSP-BR Micro Cap Fund - RP (G)	0.05848	0.0034193	0.775828	0.002085
Franklin (I) Smaller Cos (G)	0.05186	0.0026895	0.841801	0.002006
SBI Pharma Fund (G)	0.04623	0.0021370	0.317023	0.000673
Mirae Emerging Bluechip Fund (G)	0.04887	0.0023876	0.832008	0.001868
SBI Magnum Midcap Fund (G)	0.05030	0.0025302	0.785778	0.001816
Motilal MOST Shares NASDAQ 100 ETF	0.04075	0.0016601	0.090066	0.000169
Reliance Small Cap Fund (G)	0.06379	0.0040694	0.740334	0.002170
Can Robeco Emerg-Equities (G)	0.06080	0.0036974	0.786653	0.002198
Birla Sun Life MNC Fund (G)	0.04923	0.0024231	0.744531	0.001684

In the present study standard deviation has been used to measure the risk associated with all these

portfolios highlighting how the average returns have been deviating from the expected rate of returns. Table 2 reveals that investment in Reliance Small Cap Fund has been more risky showing standard deviation 0.06379 followed by UTI Transport & Logistics showing standard deviation 0.06245 as compared to other selected portfolios. The table shows that risk associated with Motilal MOST Shares NASDAQ 100 ETF has been less risky among selected portfolios i.e. 0.04075 showing the less deviation from its average returns. The variance indicates how far the reruns of the portfolios are volatile from its average returns and volatility is measure of risk. The calculated variances are indicating that the returns of these portfolios are less volatile involving less risk. A positive covariance of all the assets indicates that the assets returns move together. The above table also shows the relationship between the portfolio return and benchmark return. Out of selected portfolios the correlation of eight portfolios have been above 70% showing good relationship indicating more diversified portfolios and only two portfolios correlation has been 9% and 38% showing poor relationship between portfolio returns and benchmark returns. The Franklin (I) Smaller Cos has been more diversified showing 0.841801 correlation followed by Mirae Emerging Bluechip Fund, which shows 0.832008 correlation.

**Table 3**  
**Relation between Portfolio Risk and Market Risk**

Portfolio	Portfolio Return	Standard Deviation	Market Risk
UTI Transport & Logistics (G)	0.2547	0.06245	0.0463534
DSP-BR Micro Cap Fund - RP (G)	0.2300	0.05848	0.0463534
Franklin (I) Smaller Cos (G)	0.2100	0.05186	0.0463534
SBI Pharma Fund (G)	0.2400	0.04623	0.0463534
Mirae Emerging Bluechip Fund (G)	0.2195	0.04887	0.0463534
SBI Magnum Midcap Fund (G)	0.2116	0.05030	0.0463534
Motilal MOST Shares NASDAQ 100 ETF	0.2195	0.04075	0.0463534
Reliance Small Cap Fund (G)	0.2128	0.06379	0.0463534
Can Robeco Emerg-Equities (G)	0.2110	0.06080	0.0463534
Birla Sun Life MNC Fund (G)	0.2171	0.04923	0.0463534

All selected Mutual Funds have paid more than 21% returns during this study period. Table 3 highlights that some portfolios involves more risk but have paid less returns as compared to other portfolios whereas some portfolios with high risk have paid greater returns e.g. Reliance Small Cap Fund with highest risk (SD) 0.06379 has paid 21.28% returns standing eighth among ten funds during the study period when the Motilal MOST Shares NASDAQ 100 ETF with less risk 0.04075 has paid more reruns i.e. 21.95% showing fifth position. On the other hand UTI Transport & Logistics with 0.06245 SD has paid average 25.47% returns, which is highest rate of return. Motilal MOST Shares NASDAQ 100 ETF is the only one portfolio involving less risk 0.04075 as compared to market risk 0.0463534. The standard deviations of all remaining portfolios have been very high as compared to market risk. This how the table reveals that all the Mutual Funds which pay greater returns as compared to market returns involves more risk.

**Table 4**  
**Performance Measurement on the basis of Sharpe, Treynor and Jensen Index**

Portfolio	Sharpe's Ratio	Treynor's Ratio	Jensen's Index
UTI Transport & Logistics (G)	2.761034	6.433606	0.059346
DSP-BR Micro Cap Fund - RP (G)	2.526167	5.226892	0.058095
Franklin (I) Smaller Cos (G)	2.462813	3.693875	0.052691
SBI Pharma Fund (G)	3.411878	10.79701	0.069780
Mirae Emerging Bluechip Fund (G)	2.808029	3.783307	0.051241
SBI Magnum Midcap Fund (G)	2.571075	3.886356	0.053804
Motilal MOST Shares NASDAQ 100 ETF	3.367313	29.14261	0.078252
Reliance Small Cap Fund (G)	2.046057	5.279793	0.061126
Can Robeco Emerg-Equities (G)	2.117072	4.67103	0.058698
Birla Sun Life MNC Fund (G)	2.738533	4.184589	0.054709

The SBI Pharma Fund showing highest Sharpe Ratio highlighting that this fund has paid greatest returns for every unit of risk that was taken during the study period. SBI Pharma was followed by Motilal MOST Shares NASDAQ 100 ETF and Mirae Emerging Bluechip Fund showing Sharpe's Ratio 3.367313 and 2.808029 respectively.

The Treynor Ratio of Motilal MOST Shares NASDAQ has been 29.14261 indicating that this fund has paid highest return on investment as against the level of risk involved in the investment. This fund has been followed by SBI Pharma Fund and UTI Transport & Logistics with ratio values 10.79701 and 6.433606 respectively. Comparatively the Treynor Ratio of Franklin (I) Smaller Cos is 3.693875 showing the lowest performance among the selected funds.

The Jensen Index of all the selected funds have been positive representing that all these funds have outperformed its benchmark index during the study period. The more index more return, accordingly, the Motilal MOST Shares NASDAQ 100 ETF with 0.078252 index has earned maximum return above the level of prediction.

## VII. CONCLUSION

- The average rate of all these funds portfolios been very much high ranging from 21 per cent to 25.47 per cent as compared to market return 4.26 per cent and risk free return 8.23 per cent.
- The covariance of these funds has been positive indicating the returns of these funds are less volatile and involves less risk.
- The 70 per cent of the selected funds are more diversified and portfolio risks of 70 per cent funds have been greater than market risk.
- Some funds with less risk have good returns as against some funds have paid less returns with high risk.
- UTI Transport & Logistics has paid highest return but SBI Pharma has earned more return for each unit of risk taken during the study period.



## REFERENCES

- [1] Vikas Kumar (2011), "Performance Evaluation of Open Ended Schemes of Mutual Funds", *ZENITH, International Journal of Multidisciplinary Research* Vol.1 Issue 8, December 2011.
- [2] George O. Aragon and Wayne E. Ferson (2006), "Portfolio Performance Evaluation" *FINANCE, Foundations and Trends R \_ in* Vol. 2, No. 2 (2006) 83-190 \_c 2007.
- [3] Sarita Bahl and Meenakshi Rani (2012). "A Comparative Analysis of Mutual Fund Schemes in India", *International Journal of Marketing, Financial Services & Management Research*, Vol.1, Issue 7, July 2012.
- [4] Md. Qamruzzaman (2014), "Comparative study on Performance Evaluation of Mutual Fund Schemes in Bangladesh: An Analysis of Monthly Returns." *Journal of Business Studies Quarterly*, 2014, Vol.5, Number-4, 2014.
- [5] R. Narayansamy and V. Ratnamani (2013), " Performance Evaluation of Equity Mutual Funds (On Selected Equity Large Cap Funds)", *International Journal of Business and Management Invention*, Volume 2 Issue 4, April, 2013.
- [6] Ferson Wayne E. (2010), "Investment Performance Evaluation", Working Paper Series, Centre for Financial Innovations and Stability, Federal Reserve Bank of Atlanta, CenFIS Working Paper 10-0, January 2010.
- [7] Taneja Yashpal and Bansal Shipra(2010), "Efficient Security Selection: A Study of Portfolio Evaluation Techniques", *ZENITH International Journal of Business Economics & Management Research*, Vol.1 Issue 3, December 2011.
- [8] Eling, M. & Schuhmacher, F. (2007). Does the choice of performance measure influence the evaluation of hedge funds? *Journal of Banking & Finance*, 31, 2632-2647.
- [9] V.A. Avadhani (2008), book entitled "*Securities Analysis and Portfolio Management*" - Himalaya Publishing House, Mumbai- *Eighth* Edition 2008.
- [10] V. K. Bhalla (2014), book entitled "*Investment Management*" - Published by S. Chand and Company Private Ltd., Mumbai- *Nineteenth* Edition 2014.
- [11] [www.investopedia.com](http://www.investopedia.com)
- [12] [www.bseindia.com](http://www.bseindia.com)
- [13] [www.nseindia.com](http://www.nseindia.com)
- [14] [www.rbi.org.in](http://www.rbi.org.in)