

## **Evaluating the performance of Open Ended Large Cap Equity Mutual fund and mid & Small Cap Equity Mutual Fund Growth Scheme with special reference to SBI Mutual fund and HDFC Mutual fund**

S Rohitraj<sup>1</sup> and Dr D H Rao<sup>2</sup>  
Research Scholar, Jain University, Bengaluru<sup>1</sup>  
Dean, Visvesvaraya Technological University, Belgaum<sup>2</sup>

---

**ABSTRACT:-** Investment is very important to park the surplus fund of an individual for the purpose of earning additional income or capital appreciation or both. The investor has to consider various factors while making an investment decision these are as follows: risk associated with the investment, tax benefits, liquidity, and marketability etc.

A mutual fund is a pool of money collected from many investors which is professionally managed by the portfolio managers. It is a type of collective investment scheme and invests in various securities such as in stocks, bonds and short-term money market instruments. The performance of the fund depends upon the economic condition of the country and the world as a whole.

In this research work the performance of the fund will be evaluated using five portfolio performance measurement parameters like Beta, Standard Deviation, Sharpe Ratio, Treynor Ratio and Jensen's Alpha. The benchmark taken for this is CNX NIFTY Index. The study is primarily done to evaluate the performance of the selected Mutual Funds schemes over a period ranging from 2009 to 2014.

**Keywords:-** Jensen Performance, Net Asset Value (NAV), Open Ended, Sharpe measure, Treynor measure.

---

### **INTRODUCTION**

Is it reasonable to expect some funds to under or over-perform their benchmarks over very long horizons or that investors can use ex-ante trading rules which result in positive and persistent abnormal returns? In short, are there models which provide a rationale for 'smart money' behavior in which investors can 'beat the market'. In a seminal article Grossman and Stiglitz (1980) argue that in equilibrium, expected abnormal returns should not be zero, otherwise there would be no incentive to gather and process costly information. Taking up the idea that information processing is costly, Berk and Green (2004) use a general equilibrium competitive model (with no moral hazard or asymmetric information) to analyze fund flows, ex-post returns and performance persistence. The model is very similar to the standard perfectly competitive model of the firm where lower costs are followed by decreasing returns to scale.

A reasonable way of thinking about the usefulness of managed funds, which fits with the stylized view of the investment process, is that the representative investor starts with a benchmark portfolio based on the view that abnormal returns on assets are zero, given the investor's (publicly) available information. The question then arises as to whether managed funds can "add-value" by using superior information and skill. If managed funds earn "abnormal returns" (e.g. non-zero alphas), then by combining these funds "optimally" with the market portfolio of assets, a higher Sharpe ratio can be achieved.

Note that this interpretation assumes that in practice most (but not all) marginal investors assume asset prices are determined in an efficient market, but the market for managed funds has an element of inefficiency, since some managed funds are capable of producing abnormal returns (Grossman and Stiglitz 1980). Some may find the distinction between "marginal investors" who use public information and managed funds with private information a little "forced" but given costs of acquiring and processing information, it does not appear an unreasonable working assumption when looking for a rationale for managed funds.

Mutual Funds are one of the most favoured investment routes for the small and medium investors across the world. Ideally, they 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.

### **LITERATURE REVIEW**

Evidence on mutual fund performance throws light on aspects of the behavioral finance literature versus 'standard' asset pricing models. The behavioral finance literature (see Barberis and Thaler 2003 for a survey) has provided theoretical models and empirical evidence which suggests that active stock picking 'styles' such as value-growth (LaPorta et al 1997, Chan et al 1996, Chan and Lakonishok 2004) and momentum (Jegadeesh and Titman 1993, 2001, Chan et al 2000, Hon and Tonks 2003), as well as market timing strategies (Pesaran and Timmermann 1994, 1995, 2000, Ang and Bekaert 2007) can earn abnormal returns after correcting for risk and transactions costs. Large sections of the managed fund industry follow active strategies and there is the possibility that managed funds may be able to take advantage of less informed noise traders. Studies of predictability/persistence in fund performance therefore provide additional evidence on whether anomalies are pervasive enough to influence the performance of a substantial part of the market.

Treynor and Mazuy (1966) evaluated the performance of 57 fund managers in terms of their market timing abilities and they observed that, fund managers had not successfully outguessed the market. The results suggested that, investors were completely dependent on fluctuations in the market. Improvement in the rates of return was due to the fund manager's ability to identify and invests in underpriced industries and companies. The study adopted Treynor's (1965) methodology for reviewing the performance of Mutual Funds.

Jensen (1968) developed a composite portfolio evaluation technique concerning risk-adjusted returns. The evaluation was done on 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.

Gupta (1974) evaluated the performance of Mutual Fund industry for the period 1962-71 using Sharpe, Treynor, and Jensen models. All the funds which was covered under the study outperformed the market irrespective of the choice of market index. The results indicated that all the three models provided identical results.

Gupta Ramesh (1989) evaluated fund performance in India comparing the returns earned by schemes of similar risk and similar constraints. An explicit risk-return relationship was developed to make comparison across funds with different risk levels. The study decomposed total return into return from investors risk, return from managers' risk and target risk. Mutual Fund return due to selectivity was decomposed into return due to selection of securities and timing of investment in a particular class of securities.

Sapar & Narayan(2003) carefully examined the performance of Indian Mutual Funds in a bearish market through relative performance index, risk-return analysis, Treynor's ratio, Sharpe's ratio, and Jensen's measure with a sample of 269 open ended schemes (out of total schemes of 433). The results of performance measures suggest that most of the Mutual Fund schemes in the sample of 58 were able to satisfy investor's expectations by giving excess returns over expected returns based on both premium for systematic risk and total risk.

Rao D. N (2006) studied the financial performance of selected open-ended equity Mutual Fund schemes for the period 1st April 2005 - 31st March 2006 pertaining to the two dominant investment styles and tested the hypothesis whether the differences in performance are statistically significant. The analysis indicated that growth plans have generated higher returns than that of dividend plans but at a higher risk.

Agrawal Deepak & Patidar Deepak (2009) studied the empirical testing on the basis of fund manager's performance and analyzed the data at the fund-manager and fund-investor levels. The study revealed that the performance is affected by the saving and investment habits of the people and at the second side the confidence and loyalty of the fund Manager and rewards- affects the performance of the Mutual Fund industry in India. Mehta Sushilkumar (2010) analyze the performance of Mutual Fund schemes of SBI and UTI and found out that SBI schemes have performed better than the UTI in the year 2007-2008.

Selvam et.al (2011) studied the risk and return relationship of Indian Mutual Fund schemes. The study found out that out of thirty five sample schemes, eleven showed significant t-values and all other twenty four sample schemes did not prove significant relationship between the risk and return. According to t-alpha values, majority (thirty two) of the sample schemes returns were not significantly different from their market returns

and very few number of sample schemes returns were significantly different from their market returns during the study period.

#### **OBJECTIVES OF THE STUDY**

- To examine the funds sensitivity to the market fluctuation in the terms of Beta, and
- To appraise the performance of SBI & HDFC Fund schemes with regard to risk-return adjustment, the model suggested by Sharpe, Treynor and Jensen.

#### **SIGNIFICANCE OF THE STUDY**

Evaluating historical performance of Mutual Funds is important both for investors as well as portfolio managers. It enables an investor to access as to how much return has been generated by the portfolio manager and what risk level has been assumed in generating such returns. Further, an investor can also appraise the comparative performance of different fund managers. Similarly fund managers would also be able to know their performance over time and also vis-a- vis that of other competitors in the industry. The evaluation also provides a mechanism for identifying strengths and weaknesses of fund managers in the investment process, which helps them to take corrective actions.

#### **RISK FREE RATE**

The Risk free rate of return refers to that minimum return on investment that has no risk of losing the investment over which it is earned. For the present study, 91-Days Treasury Bills have been considered, which is 8.2% (as on December 10<sup>th</sup>, 2014).

**Source:** <http://www.rbi.org.in>

#### **RESEARCH METHODOLOGY**

The Mutual Funds schemes selected are “SBI Emerging Business fund” and “HDFC Top 200 fund”. The NAV (Net Asset Value) of these Mutual Funds for the period ranging from 2009 to 2014 is collected from secondary sources like Association of Mutual Funds of India (AMFI). This data was collected in an excel sheet and then, based on this data we have calculated Alpha, Beta, Standard Deviation, Sharpe Ratio, Treynor Ratio and Jensen’s Alpha for each of the fund. This data is analyzed and compared and inferences are drawn.

#### **LIMITATIONS OF THE STUDY**

For the purpose of performance evaluation, those schemes have been selected which are in operation since last 10 years. Only open ended schemes have been considered for this purpose.

#### **PORTFOLIO PERFORMANCE MEASUREMENT PARAMETERS**

##### **• ALPHA**

Alpha is a measure of the risk adjusted return that a manager (in the case of an investment fund) or management (in the case of a company or stock) is able to generate based on their skill and value add. A positive alpha of 1.0 means the fund has outperformed its benchmark index by 1%. Correspondingly, a similar negative alpha would indicate an underperformance of 1%.

##### **• BETA**

Beta is the standard for measuring market risk. Beta is the measure of a particular stock’s movement in relation to the movement of the overall market (typically the Sensex or Nifty). Beta measures co-movement between the market (all stocks) and the individual stocks that comprise the market.

##### **• STANDARD DEVIATION**

Standard deviation is a statistical measurement that sheds light on historical volatility. A volatile stock will have a high standard deviation while a stable blue chip stock will have a lower standard deviation. A large dispersion tells us how much the fund's return is deviating from the expected normal returns.

##### **• R-squared**

The values range from 0 to 100. An R-squared of 100 means that all movements of a security are completely explained by movements in the index. A high R-squared (between 85 and 100) indicates the fund's

performance patterns have been in line with the index. A fund with a low R-squared (70 or less) doesn't act much like the index.

- **SHARPE RATIO**

The Sharpe ratio is calculated by subtracting the risk-free rate from the rate of return for a portfolio and dividing the result by the standard deviation of the portfolio returns.

The Sharpe is calculated as:

$$\text{Sharpe formula : } (r_p - r_f) / \alpha_p$$

where,

$r_p$  is the Expected total Portfolio return,

$r_f$  is the risk free rate, and

$\alpha_p$  is the portfolio standard deviation

- **TREYNOR RATIO**

The Treynor ratio is a risk-adjusted measure of return based on systematic risk. It is similar to the Sharpe ratio, with the difference being that the Treynor ratio uses beta as the measurement of volatility. It is calculated as : (Average Return of the Portfolio - Average Return of the Risk-Free Rate) / Beta of the Portfolio.

- **JENSEN'S MEASURE**

A risk-adjusted performance measure that represents the average return on a portfolio over and above that predicted by the capital asset pricing model (CAPM), given the portfolio's beta and the average market return. This is the portfolio's alpha. In fact, the concept is sometimes referred to as "Jensen's alpha." The Jensen's measure is calculated as:

$$\alpha_p = r_p - [r_f + \beta_p (r_m - r_f)]$$

where,

- $r_p$  is the Expected total Portfolio return,

- $r_f$  is the risk free rate,

- $\beta_p$  is the beta of the portfolio , and

- $r_m$  is the expected market return.

### DATA COLLECTION AND ANALYSIS

The data for this study is gathered from the following secondary sources:

- SEBI's Handbook of Statistics,
- AMFI updates, and
- Monthly fact sheets of SBI & HDFC AMC's.

Further, the finance journals, magazines, newspapers, market reports, fund fact sheets and the annual reports of other Mutual Fund companies were also scrutinized. The data thus collected will be analyzed with the help of statistical tools.

### HDFC TOP 200 FUND

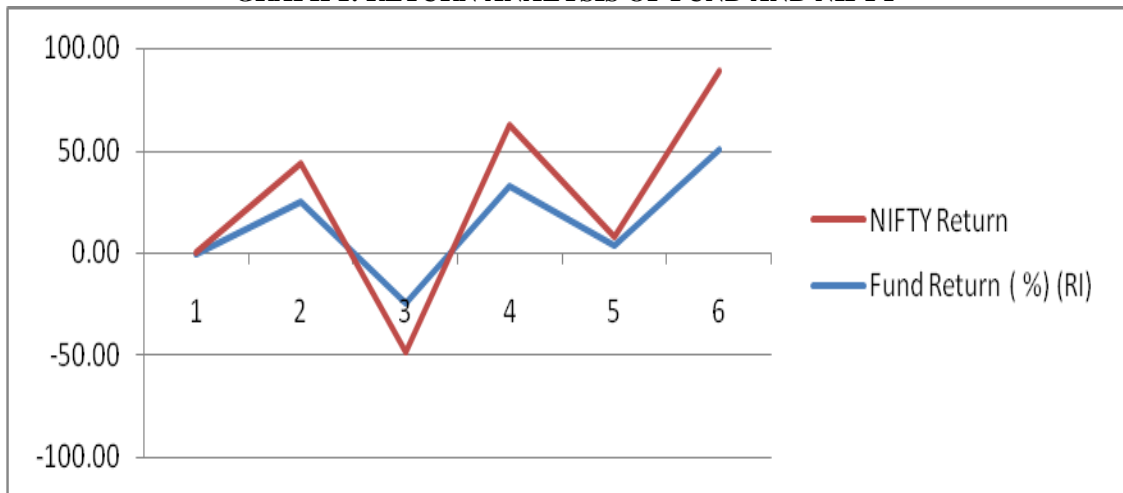
The Scheme apart from investment into equity, it may also invest up to 25% of net assets of the Scheme in derivatives such as Futures & Options and such other derivative instruments as may be introduced from time to time for the purpose of hedging and portfolio balancing and other uses as may be permitted under the regulations and guidelines. The Scheme may also invest a part of its corpus, not exceeding 40% of its net assets, in overseas markets in Global Depository Receipts (GDRs), ADRs, overseas equity, bonds and mutual funds and such other instruments as may be allowed under the Regulations from time to time.

**Table 1: Return Analysis of The Fund And Cnx Nifty**

HDFC Top 200 fund (Five Year Performance)									
Year	NAV Closing	Fund Return (%) (RI)	CNX NIFTY	CNX NIFTY Return	$RI - \bar{RI}$	$(RI - \bar{RI})_{SQ}$	$\frac{RM - \bar{RM}}{RM}$	$(\frac{RM - \bar{RM}}{RM})_{SQ}$	$(\frac{RI - \bar{RI}}{RM}) * (\frac{RM - \bar{RM}}{RM})$
2009	180.46	---	5201.05	---	---	---	---	---	---
2010	225.66	25.05	6134.5	17.95	7.45	55.56	5.04	25.36	37.54
2011	170.83	-24.30	4624.3	-24.62	-41.89	1754.82	-37.53	1408.46	1572.13
2012	226.24	32.44	6016.15	30.10	14.84	220.31	17.19	295.40	255.11
2013	235.4	4.05	6211.15	3.24	-13.54	183.44	-9.67	93.51	130.97
2014 DEC 05	354.82	50.73	8564.4	37.89	33.14	1098.11	24.98	623.81	827.65

Source : NAV of the scheme taken from AMFI Website and returns Computed

**GRAPH 1: RETURN ANALYSIS OF FUND AND NIFTY**



**TABLE 2: RISK & RETURN ANALYSIS OF THE FUND**

Annualised Return	17.59
Standard Deviation	25.74
NIFTY return	12.91
Beta	1.15
Alpha	3.96
Risk Free Rate	8.22
SPI	0.36
TPI	8.12
JPI	17.59

Source : Computed

### SBI EMERGING BUSINESSES FUND

It is an open-ended equity fund, has a high conviction portfolio of stocks, concentrated mainly in the mid and small cap segment. The fund identifies companies with growth opportunities that are at nascent stage. The fund invests across fundamentally promising companies in the mid & small cap space which are available at attractive valuations, thus creating interesting opportunities for growth.

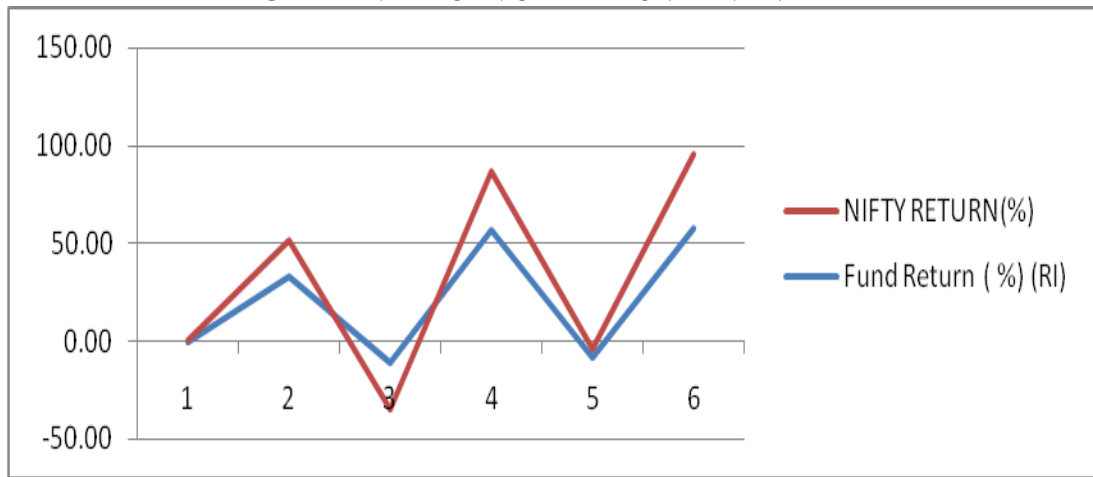
The objective of the scheme is to provide the investor long-term capital appreciation by investing in high growth companies along with the liquidity of an open-ended scheme through investments primarily in equities and the balance in debt and money market instruments.

**TABLE 3 : SBI EMERGING BUSINESS FUND (FIVE YEAR PERFORMANCE)**

Year	NAV Closing	Fund Return (%) (RI)	CNX NIFTY	NIFTY RETURN (%)	$RI - \bar{RI}$	$(RI - \bar{RI})^2$	$\frac{RM - \bar{RM}}$	$(RM - \bar{RM})^2$	$(RI - \bar{RI}) * (RM - \bar{RM})$
2009	32.89	---	5201.05	---	---	---	---	---	---
2010	43.77	33.08	6134.5	17.95	7.42	55.06	5.04	25.36	37.37
2011	39.14	-10.58	4624.3	-24.62	-36.24	1313.16	-37.53	1408.46	1359.98
2012	61.18	56.31	6016.15	30.10	30.65	939.49	17.19	295.40	526.81
2013	56.36	-7.88	6211.15	3.24	-33.54	1124.79	-9.67	93.51	324.31
2014 DEC 05	88.69	57.36	8564.4	37.89	31.70	1005.13	24.98	623.81	791.84

Source : NAV of the scheme taken from AMFI Website and returns Computed

**GRAPH 2: RETURN OF THE FUND AND NIFTY**



**TABLE 4 : RISK & RETURN ANALYSIS OF THE FUND**

Annualised Return	25.66
Standard Deviation	29.79
NIFTY return	12.91
Beta	1.24
Alph	11.61
Risk Free Rate	8.22
SPI	0.59
TPI	14.03
JPI	25.66

Source : Computed

## CONCLUSION

### HDFC TOP 200 FUND

It has a positive alpha value of 3.96 which means the fund has outperformed than its benchmark. Its benchmark index is Nifty and beta of 1.15, thus the Fund expected to return 1.15 times the Nifty returns in an up

market. The Standard Deviation is 25.74 and with Beta greater than 1, this is a highly volatile fund as shown in Table.

The Sharpe Ratio is 0.36 which is very low, thus the risk taken to generate the returns is very high. Treynor Ratio is 8.12, thus the fund has earned 8.12% more than the risk free return. Jensen's alpha is 17.59 which is a positive value. Thus, the fund is earning more than the expected returns.

#### **SBI EMERGING BUSINESS FUND**

It has a positive alpha value of 11.61 which means the fund has outperformed than its benchmark. Its benchmark index is Nifty and beta of 1.24, thus the Fund expected to return 1.24 times the Nifty returns in an up market. The Standard Deviation is 29.79 and with Beta greater than 1, this is a highly volatile fund as shown in Table 4.

The Sharpe Ratio is 0.59 which is high, thus the risk taken to generate the returns is low. Treynor Ratio is 14.03, thus the fund has earned 14.03% more than the risk free return. Jensen's alpha is 25.66 which is a positive value. Thus, the fund is earning more than the expected returns.

#### **REFERENCES**

- [1]. Aggarwal N and Gupta M (2007), "Performance of Mutual Funds in India: An Empirical Study", The ICFAI Journal of Applied finance, Vol. 13, No. 9.
- [2]. Agarwal and Peensh R (1996) – A Comprehensive Approach to Mutual Funds, Orient Law House, New Delhi.
- [3]. Alexander, Sharpe, Bailley- Fundamentals of Investment – Pearson / PHI, 3/e, 2001.
- [4]. Anjaria D C, AMFI Workbook, AMFI Mumbai.
- [5]. Chander, Subhash & Singh J (June 2004), "Performance of Mutual Funds in India - An Empirical Evidence", The ICFAI Journal of Applied Finance, (June 2004) pp.45-63.
- [6]. Davis, James L (2001), "Mutual Fund Performance and Manager Style", Journal of Financial Analysts, Vol. 57 (1), (January / February 2001) pp. 19-27.
- [7]. Fisher and Jordan - Security Analysis & Portfolio Management – 6/e Pearson, PHI.
- [8]. Jayadev M (1998), "Performance Evaluation of Portfolio Managers: An empirical Evidence on Indian Mutual Funds ", Applied Finance Vol. 5 No.2.
- [9]. Prasanna C (2005), Investment Analysis and Portfolio management– TMH- 2<sup>nd</sup> Edition.
- [10]. Punithavathy P (2005), Security Analysis & Portfolio Management – Vikas, 2/e.
- [11]. Simran S, Bimal A, Ramandeep S (2011), "Investor's Awareness and perception about Mutual Funds ", Zenith International Journal, Vol.1 Issue 1.
- [12]. Vikas Kumar (2011), "Performance Evaluation of Open Ended Schemes of Mutual Funds ", Zenith International Journal, Vol.1 Issue 8.
- [13]. Zvi B & Mohanty (2005), Investments — TMH – 6<sup>th</sup> Edition.