

Investment Performance & Risk-Adjusted Measures: An Empirical Study on Open Ended Equity Schemes

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Abstract

The present study is an attempt to analyze the performance of the mutual fund performance context of return, risk and risk-adjusted performance. Daily returns of mutual were used for 49 open-ended growth equity schemes. To measure the performance of mutual fund schemes the Average Return, CAGR, Treynor Ratio (1965) and Sharpe Ratio (1966) have been used in the present study. The results show that 30 out of the 49 schemes were providing higher returns in comparison to the market index, while taking less risk than the market index. In terms of Sharpe Ratio, 30 out of 49 schemes exceeded the Market Index Ratio. While in case of Treynor Ratio 33 out of 49 mutual fund schemes were providing greater risk adjusted return than the Market Index.

Key words: Average Return, CAGR, Sharpe Ratio, Treynor Ratio, Market Index

I. Introduction

Portfolio selection and investment performance are two important features of the any portfolio management process. Portfolio selection is related to the selection of securities in a portfolio for a given period of time. Earlier portfolio selection, expected return and behavior of the investors were defined only in the subjective form. Later in 1952, Markowitz defined portfolio selection in mathematical terms by considering the expected return and risk around that expected return. Further, investment performance was elaborated by the Friend and Vickers (1965) who were concerned with realized returns from the selected portfolio over a given period of time. There were no well-defined methods for measuring of return, risk and risk-adjusted returns during that time period. In the starting phase of research, the investment performance concentrated only on the return aspect of the portfolio and the risk factor was ignored due to no clarity of this concept (Friend and Vickers, 1965). But risk was an important factor when investment performance had to be compared between two different assets and/or classes as the level of risk would determine the premium of returns to the investors. Therefore, the need for both the risk and return measures was realized to evaluate the investment performance. To this effect, Treynor (1965) and Sharpe (1966) made important contributions by taking into consideration the risk parameters in evaluating the investment performance. Treynor (1965) made his first study on mutual fund performance considering the sensitivity of the mutual fund towards the market

index. Also, Treynor paved the way for measuring the performance of mutual funds against a particular benchmark. He summarized the performance of the mutual funds graphically on four funds taking 10 year data. The results depict the pattern of the rate of return changes with respect to the Dow-Jones Industrial Average, which remained fixed in the linear-line framework. This linear framework defined the relationship of mutual fund returns with the market index returns. It was a major contribution in the financial literature for the researchers and academicians in the field of investment theory. Also, the study was first of its kind to provide information regarding evaluation of the investment performance to the retail investors considering both the risk and return measures. Sharpe (1966) examined the risk adjusted performance of the mutual fund managers considering the volatility (i.e. standard deviation) of the mutual fund scheme. He also focused on the persistency in the mutual fund performance which signifies that past performance predicts the future performance of the schemes. Some of the important theoretical studies were contributed by Evans (1970), Mills (1970), Arditti (1971), Levy & Sarnat (1972), Levy (1972) for defining the investment performance of portfolios considering return and risk measures.

Major empirical studies on mutual funds includes Bogle (1970), Carlson (1970), Gaumnitz (1970) and Evans (1970) and McDonald (1973, 1974) which examined the different forms of risk and return for evaluating mutual fund performance. Carlson (1970) studied whether the mutual funds outperform “the market” or not. He also studied mutual fund performance in relation to the fund size and expense

ratio. In his study, he concluded that whether the mutual funds will outperform the market depends on the selection of time period and market proxy. He also concluded that mutual fund performance is independent to fund size and expense ratio. McDonald (1974) evaluated the objectives and performance of 123 mutual funds using monthly data in the period 1960-69. The results showed that growth equity schemes provided better returns than other funds having different objectives. It also concluded that higher average fund returns are directly related to the risk level.

Section II explains the objectives of the present research. Section III discusses the research methodology and statistical techniques used in this study. Section IV presents empirical results evaluating the performance of mutual funds schemes considering different parameters. Section V contains the summary of results and conclusions.

II. Objectives of the Study:

The following objectives were defined on the basis of return, risk and risk-adjusted return.

1. To measure the return of the mutual fund schemes on the basis of Average return and CAGR.
2. To study the risk parameters in terms of standard deviation (total risk) and beta (systematic risk) of mutual fund schemes.
3. To study the risk-adjusted performance of mutual fund schemes on the basis of Sharpe and Treynor Ratio.

4. To make a comparative study of mutual funds' performance with the market performance.

III. Research Methodology

3.1 Sample Selection

There were total 382 schemes as on 31st March, 2003. Out of this, open-ended growth oriented schemes constituted 115 schemes. Out of 115 schemes there were only 49 schemes which existed during the research period under study as rest of the schemes either merged with the existing schemes or were no more in existence due to poor performance and other such reasons.

The NAV (Net Asset Value) has been collected from Capital Line Database and then further matched with Value Research and moneycontrol.com databases, for verification regarding the nature of the scheme and date of the scheme. In addition, index funds and sector funds are excluded from the study as they do not come under the direct purview of diversified equity market segment.

Mutual fund percentage returns are measured on a daily basis by using the formula $\ln(P1/P0)*100$ where P1 is the current daily's price. P0 is previous daily's price. The main advantage of using logarithmic returns is that it is not affected by the base effect problem.

3.2 Benchmark Selection:

As per SEBI Master Circulation 2013 specific benchmarks have been mentioned for different kinds of mutual fund schemes based on their objectives.

In the present study, broad-based index i.e. BSE 500 has been used as this study covers open-ended growth equity schemes.

3.3 Selection of Risk-free Interest Rate:

91-day treasury bills have been taken from the RBI data-base as risk-free interest rate, which is available on the annual-rate basis. It has been further calculated on daily basis.

3.4 Research Methods

a) Average Return

Average Return of mutual fund portfolio (AR) =

$$\frac{\sum_{t=1}^n R_{pt}}{n} \quad (1)$$

Where as

Average Return on market index can be calculated =

$$\frac{\sum_{t=1}^n R_{mt}}{n} \quad (2)$$

b) CAGR

The CAGR (compounded annual growth rate) is calculated as:

$$\text{CAGR} = \left(\frac{\text{Ending Value}}{\text{Beginning Value}} \right)^{\{1/n \text{ of years}\}} - 1 \quad (3)$$

- c) **Sharpe Ratio:** Sharpe's reward to variability ratio measures the excess return per unit of total risk as measured by standard deviation. The Sharpe's ratios for different mutual funds, as well as benchmark portfolio has been computed by using the following equation:

$$\text{Sharpe Ratio } (S_p) = \frac{R_p - R_f}{\sigma_p} \quad (4)$$

Where

S_p = Sharpe ratio of portfolio

R_p = Average return on the portfolio

R_f = Average Risk-free interest rate

σ_p = Total risk of the scheme portfolio

$$\text{The benchmark comparison } (S_M) = \frac{R_M - R_f}{\sigma_M} \quad (5)$$

d) **Treynor Ratio:** The Treynor's reward to volatility ratio measures the excess return per unit of market (systematic risk). It has been calculated as follows:

$$\text{Treynor Ratio } (T_p) = \frac{R_p - R_f}{\beta_M} \quad (6)$$

IV. Empirical Results

4.1 Performance on the basis of Average Annual Return

Annual return is the return on an investment over a particular period of time. It is measured against the initial amount of investment and represents a geometric mean rather than a simple arithmetic return. Further, the average annual return is a percentage figure used when reporting the historical return, such as five or ten average returns of a particular asset. The implication for the average annual return is that it is helpful for measuring the long-term performance. Table 4.1 reports the ranking of the mutual funds on the basis of average annual return. As shown in

Table 4.1, top performers on the basis of average return are Sundaram Select Midcap Fund (27.55), Reliance Growth Fund (27.01), HDFC Top 200 Fund (25.33), HDFC Equity Fund (24.94) and Tata Pure Equity Fund (24.22), respectively. It can be inferred that the most of the schemes of HDFC Mutual Fund are in Top-10 and average return from the overall HDFC mutual fund family is approx. 24percent. . UTI, which is the oldest and the largest fund house, has not having good performance as compared to the other schemes and average performance in this particular diversified equity segment is only the 15.31percent.

4.2 Performance Evaluation on the Basis of CAGR (percent)

CAGR (Compounded annual growth rate) is an average growth rate over a period of several years. It is a geometric average of annual growth rates. Although no historical data is a substitute for a forecast, the CAGR over a number of years is a better indicator of a trend than a single year's growth which may be typically good or bad. CAGR should be used because arithmetic averaging of growth numbers gives incorrect results. Further, it indicates the investors what they really have at the end of the investment period. Table 4.2 reports the ranking of mutual fund schemes on the basis of CAGR. Top-5 schemes are Reliance Growth Fund (114.02percent), Franklin India Prima Fund (92.66percent), Reliance Vision Fund (80.37percent), Birla Sunlife Equity Fund (78.87percent) and HDFC Equity Fund (77.91percent). Most of the schemes of the Franklin mutual fund family are among the top-10 performers. UTI, which is the oldest and having maximum

Assets under Management are far behind from other mutual fund schemes on the basis of CAGR.

4.3 Standard Deviation (Variability)

It is evident from the Table 4.3 that Standard Deviation ranges from the 1.1percent to 2.7percent. Highest standard deviation is for the Taurus Star share Fund (2.34percent), UTI Top 100 Fund (2.07), UTI Equity Fund (1.93percent), JM Basic Fund (1.91percent) and Escorts Growth Plan (2.69 percent). The five least volatile funds as per standard deviation of daily returns are Birla Sunlife Buy India Fund (1.34percent), UTI MNC Fund (1.109percent), Birla Sunlife MNC Fund (1.108percent), HDFC Capital Builder Fund (0.0970percent) and Birla Sunlife Dividend Yield Plus (1.311percent).

4.4 Beta(Systematic Risk)

It is evident from the table 4.4 that Top-5 schemes in terms of risky mutual fund schemes in the context of systematic risk are JM Basic Fund (25.12), Franklin India Bluechip Fund (21.72), Franklin India Prima Plus (20.59), LIC Nomura Equity Fund (0.99) and JM Equity Fund (0.98). The least risky mutual fund schemes are ING Core Equity Fund (0.20), ICICI Pru Top 100(0.20), ICICI Pru Dynamic Plan (0.19), HDFC Capital Builder Fund (0.16) and Escorts Growth Plan (0.15).

4.5 Risk-Adjusted Performance of Mutual Fund schemes on the Basis of Sharpe Ratio

Sharpe ratio is a measure for calculating risk-adjusted return. The measure is highly useful because it is simply defined in terms of mean and standard deviation. Table 4.5 presents the Sharpe Ratio of mutual fund schemes under study. On the basis of Sharpe ratio, the top 5 schemes are Reliance Growth Fund (0.0591), Sundaram Mid-cap Fund (0.0568), HDFC Capital Builder Fund (0.0541), Birla Sunlife Buy India Fund (0.0536) and HDFC Top 200 Fund (0.0518). The Top- lowest schemes in terms of Sharpe Ratio are Escorts Growth Plan (-0.8805), JM Basic Fund (-0.0114), UTI Top 100 Fund (0.0038), Kotak 50(0.0077) and UTI Master Value Fund (0.0111).

4.6 Risk-Adjusted Performance of MF schemes on the Basis of Treynor Ratio

Treynor Ratio explains return per unit of systematic risk (β) assumed by the scheme. It emphasized on the beta value and provides more insights about the mutual fund performance, implying that investor should have a comparative base for the evaluation with any standard benchmark. It overcomes the shortcomings of the Sharpe ratio, which use the volatility of the fund and not a good measure of risk particularly in a situation where the asset or portfolio can be combined with other assets or portfolios to diversify away unsystematic risk. Treynor ratio provides the possible to diversify the unsystematic risk. Higher the Treynor ratio, the better the mutual fund managers are able to diversify the systematic risk. It is evident from the Table 4.6 that Top 5 performers in terms of Treynor Ratio are

HDFC Capital Builder Fund (0.464), ICICI Pru Dynamic Plan (0.378), ICICI Pru Top 100(0.299), ING Core Equity Fund (0.233) and Birla Sunlife MNC Fund (0.111). Three schemes i.e. JM Basic Fund (-0.001), Escorts Growth Plan (-0.156) and Sundaram Midcap Fund (-9.35) have negative Treynor Ratio means these schemes are not rewarding to the investor for the systematic risk borne by them.

4.7 Comparative Study of the Mutual Fund Performance and Market Portfolio Performance

Table 4.7 presents the risk and return of the mutual fund schemes together with the, risk and return of the market portfolio. From the table, it has been found that out of the 49 mutual fund schemes, 29 schemes have earned high returns in comparison to the market index. Average mutual funds returns is 0.07percent against the average market portfolio return of 0.06 percent. The average standard deviations from the mutual fund schemes are 1.47percent, which is lower than average standard deviation of market index 1.61percent.

4.8 Risk-Return Grid of Sample Schemes

The sample schemes have been classified into four categories on the basis of their return and risk characteristics. The table 4.8 presents four quadrants on the basis of risk and return.

Quadrant I classified the schemes which have earned high return in comparison to the market index return and less risky than the market index. Under this category, out of 49 schemes, 30 schemes are in this segment of risk-return

framework. The schemes are Birla Sunlife Buy India Fund(Birla Sunlife Dividend Yield Plus, Birla Sunlife Equity Fund, Birla Sunlife Frontline Equity Fund, Birla Sunlife Midcap Fund, Birla Sunlife MNC Fund, DSP BR Opportunities Fund, DWS Alpha Equity Fund, Franklin Bluechip India Fund, Franklin India Prima Fund, Franklin India Prima Plus Fund, HDFC Capital Builder Fund, HDFC Equity Fund, HDFC Growth Fund, HDFC Top 200 Fund, HSBC Equity Fund, ICICI Pru Dynamic Plan, ICICI Pru Top 100, ICICI Top Pru Top 200, Reliance Growth Fund, Reliance Vision Fund, Sundaram Growth Fund, Sundaram Select Focus Fund, Tata Equity Opportunities Fund, Tata Ethical Fund, Tata Growth Fund, Tata Pure Equity Fund, Tata Pure Equity Fund, UTI MNC Fund.

Quadrant II: classified the schemes which have earned high returns, and were highly risky, in comparison to the market index. Under this category, there are only 2 schemes i.e. Taurus Starshare Fund and UTI Equity Fund.

Quadrant III: This category classified the schemes which have earned low returns than market index and having low risk in comparison to the market index. The schemes under this category include Birla Sunlife Advantage Fund, Birla Sunlife opportunities Fund, Escorts Growth Plan, Morgan Stanley Growth Fund, Principal Growth Fund and UTI Master Plus.

Quadrant IV: This category covers those mutual fund schemes, which have earned low returns and having high risk in comparison to the market index. The scheme under this category includes ING Core Equity Fund, JM Basic Fund, JM Equity Fund, Kotak 50, LIC Nomura Equity Fund, LIC Nomura Growth Fund,

SBI Contra Fund, Tata Bonaza Fund, Tata Discovery Fund, UTI Master Value Fund and UTI Top 100 Fund.

4.9 Comparison of Sharpe Ratio of Mutual fund Returns with Sharpe Ratio of Market Portfolio

Table 4.9 explains the comparison of Sharpe ratio with the market portfolio's Sharpe ratio. The implication is that if the Sharpe ratio of the mutual fund scheme is greater than the Sharpe ratio of market portfolio, then the mutual fund managers are doing well. It is evident from the above that On the basis of Sharpe ratio, the top 5 schemes are Reliance Growth Fund (HDFC Capital Builder Fund, HDFC Top 200 Fund and ICICI Pru Dynamic Plan.

4.10 Comparison of Treynor's Ratio of Mutual Fund Scheme with Market Portfolio Treynor's Ratio

On the basis of Table 4.10, out of the 49 growth equity schemes, 32 schemes i.e. Birla Sun life Advantage Fund, Birla Sun life Buy India Fund, Birla Sun life Dividend Yield Plus, Birla Sun life Equity Fund, Birla Sun life Frontline Equity Fund, Birla Sun life Midcap Fund, Birla Sun life MNC Fund, DSP BR Opportunities Fund, DWS Alpha Equity Fund, Franklin India Prima Fund, HDFC Capital Builder Fund, HDFC Equity Fund, HDFC Growth Fund, HDFC Top 200 Fund, HSBC Equity Fund, ICICI Pru Dynamic Plan, ICICI Pru Top 100, ICICI Top Pru Top 200, ING Core Equity Fund, Reliance Growth Fund, Reliance Vision Fund, Sundaram Growth Fund, Sundaram Select Focus Fund, Tata Equity

Opportunities Fund, Tata Ethical Fund, Tata Growth Fund, Tata Pure Equity Fund, Tata Pure Equity Fund, Taurus Starshare Fund, UTI Equity Fund, UTI Master Plus, UTI MNC Fund are providing the better returns interms of systematic risk alone.

V. Conclusion

This paper evaluates the performance of 49 open-ended growth equity schemes using daily data in the period 2003-2013. It focused on the risk, return and risk-adjusted performance measure of the mutual fund schemes under study. Risk and return, which are important part of the financial theory, as well as the decision making attributes of the investor while making investment are calculated on the basis of Standard-deviation, Average annual return, Compounded annual growth rate, Sharpe ratio and Treynor ratio.

On the basis of Average return, top 5 schemes are Sundaram Select Midcap Fund, Reliance Growth Fund, HDFC Top 200 Fund, HDFC Equity Fund and Tata Pure Equity Fund. Further, on the basis of the compounded annual growth rate, which is calculated for the long term investment prospects, the top 5 schemes are Reliance Growth Fund, Franklin India Prima Fund, Reliance Vision Fund, Birla Sun life Equity Fund and HDFC Equity Fund.

On the basis of risk and return grid, 30 mutual fund schemes have earned more returns while undertaking less risk as compared to the market index. There were only two mutual fund schemes giving higher returns than market index, while the

risk levels of the same were greater than the market index. Furthermore, six schemes provided lower returns than market index, while undertaking less risk than the market index. Also, 11 mutual fund schemes have provided lower returns than market index, while availing greater risk than the market index.

On the basis of the risk-adjusted performance, Sharpe ratio and Treynor ratio are calculated. Sharpe ratio is the average return earned in excess of the risk-free interest rate per unit of volatility or total risk. On the basis of Sharpe ratio, the top 5 schemes are Reliance Growth Fund, HDFC Capital Builder Fund, HDFC Top 200 Fund and ICICI Pru Dynamic Plan. As far the comparison of Sharpe ratio of the mutual fund schemes with the Sharpe ratio of the market index, 30 mutual fund schemes are getting more risk-adjusted return than the market index.

On the basis of Treynor ratio, the top 5 schemes are HDFC Capital builder Fund, ICICI Pru Dynamic Plan, ICICI Pru Top 100, ING Core Equity Fund and Birla Sun-life MNC Fund. Further, 33 mutual fund schemes are providing better Treynor ratio than the market's index Treynor ratio.

The study would be helpful to the investors in making their investment decisions, while parking their money in mutual funds. As informed investors, they will in a better position to select mutual fund schemes providing better returns than market index over a period of ten years under study. This will enhance the confidence of investors, which will result in increasing the investments in the mutual fund industry.

VI. Limitation and Future Scope of Study

The study is limited to the performance evaluation of the mutual fund schemes on some basic parameters of return and risk measures. The major limitation of this work is that it considered the study period of 2003 to 2013 only and the inferences are reflection of the market of that period. Future researchers may study the same factors for last three years and different factors like fund size, cash inflow and outflow into the fund, expense ratio, mutual fund manager characteristics like manager age, education, location etc., that may help to determine the mutual fund performance.

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Empirical Results and Interpretation

Table 4.1

Ranking-based on Average Annual Return

S.No.	Mutual Fund Name	Average Annual Return (percent)	Rank
1	Birla Sun Life Advantage Fund	18.53	32
2	Birla Sun Life Buy India Fund	23.82	10
3	Birla Sun Life Dividend Yield Plus	21.74	22
4	Birla Sun Life Equity Fund	23.29	15
5	Birla Sun Life Frontline Equity Fund	22.46	20
6	Birla Sun Life India Opportunities Fund - B	14.40	44
7	Birla Sun Life Midcap Fund	23.91	8
8	Birla Sun Life MNC Fund	21.93	21
9	DSP BR Opportunities Fund	23.23	16
10	DWS Alpha Equity Fund	20.69	26
11	Escorts Growth Plan	16.66	39
12	Franklin India Blue-chip Fund	22.98	17
13	Franklin India Prima Fund	23.84	9
14	Franklin India Prima Plus	23.47	13
15	HDFC Capital Builder	23.96	7
16	HDFC Equity Fund	24.94	4
17	HDFC Growth Fund	23.55	12
18	HDFC Top 200 Fund	25.33	3
19	HSBC Equity Fund	22.62	19
20	ICICI Pru Dynamic Plan	23.64	11
21	ICICI Pru Top 100	20.80	24
22	ICICI Pru Top 200	20.74	25
23	ING Core Equity Fund	17.60	34
24	JM Basic Fund	0.63	49
25	JM Equity Fund	15.35	41
26	Kotak 30	9.28	47
27	LIC Nomura MF Equity Fund	15.14	43
28	LIC Nomura MF Growth Fund	17.66	33
29	Morgan Stanley Growth Fund	16.96	37
30	Principal Growth Fund	16.88	38

31	Reliance Growth Fund	27.01	2
32	Reliance Vision Fund	21.66	23
33	SBI Contra Fund	17.36	35
34	Sundaram Growth Fund	19.69	28
35	Sundaram Select Focus	20.40	27
36	Sundaram Select Midcap	27.55	1
37	Tata Equity Opportunities Fund	24.15	6
38	Tata Ethical Fund	22.68	18
39	Tata Growth Fund	19.38	30
40	Tata Pure Equity Fund	24.22	5
41	Taurus Bonanza Fund	14.13	45
42	Taurus Discovery Fund	15.22	42
43	Taurus Starshare Fund	23.45	14
44	UTI-Equity Fund	18.74	31
45	UTI-Master Plus	17.30	36
46	UTI-Master Value Fund	10.89	46
47	UTI-Mastershare	16.26	40
48	UTI-MNC Fund	19.64	29
49	UTI-Top 100 Fund	7.96	48

Source: Researcher's Study

Table 4.2

Ranking –based on Compounded Annual Growth Rate(percent)

SI.No.	Mutual Fund Name	CAGR (percent)	Ranking
1	Birla Sun Life Advantage Fund	58.12	9
2	Birla Sun Life Buy India Fund	13.59	45
3	Birla Sun Life Dividend Yield Plus	29.09	23
4	Birla Sun Life Equity Fund	78.87	4
5	Birla Sun Life Frontline Equity Fund	30.80	20
6	Birla Sun Life India Opportunities Fund – B	25.08	32
7	Birla Sun Life Midcap Fund	32.59	17
8	Birla Sun Life MNC Fund	42.30	12
9	DSP BR Opportunities Fund	26.26	29
10	DWS Alpha Equity Fund	26.67	28
11	Escorts Growth Plan	27.37	25
12	Franklin India Blue-chip Fund	71.41	7
13	Franklin India Prima Fund	92.66	2
14	Franklin India Prima Plus	73.52	6

15	HDFC Capital Builder	33.44	16
16	HDFC Equity Fund	77.91	5
17	HDFC Growth Fund	27.01	27
18	HDFC Top 200 Fund	59.31	8
19	HSBC Equity Fund	32.32	19
20	ICICI Pru Dynamic Plan	33.74	15
21	ICICI Pru Top 100	51.44	10
22	ICICI Pru Top 100	51.27	11
23	ING Core Equity Fund	15.94	43
24	JM Basic Fund	11.92	47
25	JM Equity Fund	15.60	44
26	Kotak 50	18.52	40
27	LIC Nomura Mutual Fund Equity Fund	12.13	46
28	LIC Nomura Mutual Fund Growth Fund	5.19	49
29	Morgan Stanley Growth Fund	27.06	26
30	Principal Growth Fund	22.65	37
31	Reliance Growth Fund	114.02	1
32	Reliance Vision Fund	80.37	3
33	SBI Contra Fund	23.77	34
34	Sundaram Growth Fund	32.46	18
35	Sundaram Select Focus Fund	30.14	22
36	Sundaram Select Midcap Fund	39.09	13
37	Tata Equity Opportunities Fund	25.22	31
38	Tata Ethical Fund	23.02	36
39	Tata Growth Fund	16.47	42
40	Tata Pure Equity Fund	30.72	21
41	Taurus Bonanza Fund	19.72	39
42	Taurus Discovery Fund	7.34	48
43	Taurus Starshare Fund	17.67	41
44	UTI-Equity Fund	23.12	35
45	UTI-Master Plus	36.79	14
46	UTI-Master Value Fund	28.99	24
47	UTI-Mastershare	24.51	33
48	UTI-MNC Fund	25.49	30
49	UTI-Top 100 Fund	19.74	38

Source: Researcher's Study

Table 4.3

Standard Deviation

S.No.	Mutual Fund Name	S.D (percent)	S.No.	Mutual Fund Name	S.D (percent)
1	Birla Sunlife	1.61	26	Kotak 50	1.71
2	Birla Sunlife Buy	1.34	27	LIC Nomura Growth Fund	1.69
3	Birla Sunlife	1.31	28	LIC Noumra Equity Fund	1.68
4	Birla Sunlife Equity	1.54	29	Morgan Stanley Growth Fund	1.53
5	Birla Sunlife	1.44	30	Principal Growth Fund	1.47
6	Birla Sunlife Mid	1.45	31	Reliance Vision Fund	1.44
7	Birla Sunlife MNC	1.11	32	Reliance Growth Fund	1.49
8	Birla Sunlife	1.42	33	SBI Contra Fund	1.77
9	DSP BR	1.46	34	Sundaram Growth Fund	1.60
10	DWS Alpha Equity	1.53	35	Sundaram Select Midcap Fund	1.39
11	Escorts Growth Plan	2.69	36	Sundaram Select Focus Fund	1.57
12	Franklin India	1.46	37	Tata Bonaza Fund	1.78
13	Franklin India Prima	1.42	38	Tata Discovery Fund	1.86
14	Franklin India Prima	1.38	39	Tata Equity Opportunities Fund	1.53
15	HDFC Capital	1.34	40	Tata Ethical Fund	1.50
16	HDFC Equity Fund	1.51	41	Tata Growth Fund	1.59
17	HDFC Growth Fund	1.42	42	Tata Pure Equity Fund	1.48
18	HDFC Top 200	1.51	43	Taurus Starshare Fund	2.34
19	HSBC Equity Fund	1.45	44	UTI Equity Fund	1.93
20	ICICI Pru Dynamic	1.39	45	UTI Master Plus	1.55
21	ICICI Pru Top 100	1.56	46	UTI Master Share	1.79
22	ICICI Pru Top 200	1.54	47	UTI Master Value Fund	1.11
23	ING Core Equity	1.68	48	UTI MNC Fund	2.07
24	JM Basic Fund	1.91	49	UTI Top 100 Fund	1.71
25	JM Equity Fund	1.67			

Table 4.4

Systematic Risk (Beta)

S.No.	Mutual Fund Name	Beta	S.No.	Mutual Fund Name	Beta
1	Birla Sunlife Advantage Fund	0.97	26	Kotak 50	0.90
2	Birla Sunlife Buy India Fund	0.73	27	LIC Nomura Growth Fund	0.96
3	Birla Sunlife Dividend Yield Plus	0.73	28	LIC Noumra Equity Fund	0.99

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4	Birla Sunlife Equity Fund	0.91	29	Morgan Stanley Growth Fund	0.92
5	Birla Sunlife Frontline Equity Fund	0.87	30	Principal Growth Fund	0.88
6	Birla Sunlife Mid Cap Fund	0.81	31	Reliance Vision Fund	0.88
7	Birla Sunlife MNC Fund	0.60	32	Reliance Growth Fund	0.84
8	Birla Sunlife Opportunities Fund	0.78	33	SBI Contra Fund	0.91
9	DSP BR Opportunities Fund	0.88	34	Sundaram Growth Fund	0.96
10	DWS Alpha Equity Fund	0.91	35	Sundaram Select Midcap Fund	0.85
11	Escorts Growth Plan	0.15	36	Sundaram Select Focus Fund	0.92
12	Franklin India Bluechip Fund	21.72	37	Tata Bonaza Fund	0.98
13	Franklin India Prima Fund	0.75	38	Tata Discovery Fund	0.98
14	Franklin India Prima Plus	20.59	39	Tata Equity Opportunities Fund	0.90
15	HDFC Capital Builder Fund	0.16	40	Tata Ethical Fund	0.86
16	HDFC Equity Fund	0.89	41	Tata Growth Fund	0.85
17	HDFC Growth Fund	0.84	42	Tata Pure Equity Fund	0.88
18	HDFC Top 200 Fund	0.91	43	Taurus Starshare Fund	0.98
19	HSBC Equity Fund	0.87	44	UTI Equity Fund	0.80
20	ICICI Pru Dynamic Plan	0.19	45	UTI Master Plus	0.93
21	ICICI Pru Top 100	0.20	46	UTI Master Share	0.83
22	ICICI Pru Top 200	0.93	47	UTI Master Value Fund	0.77
23	ING Core Equity Fund	0.20	48	UTI MNC Fund	0.58
24	JM Basic Fund	25.12	49	UTI Top 100 Fund	0.88
25	JM Equity Fund	0.98			

Table 4.5

Mutual Fund Performance on the Basis of Sharpe Ratio

S.No.	Mutual Fund Name	Sharpe Ratio (Mutual Fund)	Ranking
1	Birla Sunlife Advantage Fund	0.0313	31
2	Birla Sunlife Buy India Fund	0.0536	4
3	Birla Sunlife Dividend Yield Plus	0.0485	15
4	Birla Sunlife Equity Fund	0.0455	22
5	Birla Sunlife Frontline Equity Fund	0.0461	20
6	Birla Sunlife Midcap Fund	0.0498	13
7	Birla Sunlife MNC Fund	0.0461	21
8	Birla Sunlife opportunities Fund	0.0240	40
9	DSP BR Opportunities Fund	0.0477	17
10	DWS Alpha Equity Fund	0.0390	25
11	Escorts Growth Plan	-0.8805	49
12	Franklin Bluechip India Fund	0.0471	18
13	Franklin India Prima Fund	0.0509	8
14	Franklin India Prima Plus Fund	0.0514	7
15	HDFC Capital Builder Fund	0.0541	3
16	HDFC Equity Fund	0.0506	9
17	HDFC Growth Fund	0.0501	10
18	HDFC Top 200 Fund	0.0518	5
19	HSBC Equity Fund	0.0464	19
20	ICICI Pru Dynamic Plan	0.0515	6
21	ICICI Pru Top 100	0.0381	28
22	ICICI Top Pru Top 200	0.0387	26
23	ING Core Equity Fund	0.0278	37
24	JM Basic Fund	-0.0114	48
25	JM Equity Fund	0.0226	41
26	Kotak 50	0.0077	46
27	LIC Nomura Equity Fund	0.0225	42
28	LIC Nomura Growth Fund	0.0289	36
29	Morgan Stanley Growth Fund	0.0290	35

30	Principal Growth Fund	0.0300	33
31	Reliance Growth Fund	0.0591	1
32	Reliance Vision Fund	0.0426	24
33	SBI Contra Fund	0.0264	39
34	Sundaram Growth Fund	0.0346	30
35	Sundaram Midcap Fund	0.0568	2
36	Sundaram Select Focus Fund	0.0370	29
37	Tata Bonaza Fund	0.0184	44
38	Tata Discovery Fund	0.0200	43
39	Tata Equity Opportunities Fund	0.0481	16
40	Tata Ethical Fund	0.0452	23
41	Tata Growth Fund	0.0385	27
42	Tata Pure Equity Fund	0.0500	11
43	Tata Pure Equity Fund	0.0500	12
44	Taurus Starshare Fund	0.0301	32
45	UTI Equity Fund	0.0268	38
46	UTI Master Plus	0.0295	34
47	UTI Master Value Fund	0.0111	45
48	UTI MNC Fund	0.0498	14
49	UTI Top 100 Fund	0.0038	47

Source: Researcher's study

Table 4.6

Mutual Fund Performance of the Basis of Treynor Ratio

S.No.	Mutual Fund Name	Treynor Ratio	Ranking
1	Birla Sunlife Advantage Fund	0.0524	33
2	Birla Sunlife Buy India Fund	0.0984	7
3	Birla Sunlife Dividend Yield Plus	0.0867	13
4	Birla Sunlife Equity Fund	0.0764	23
5	Birla Sunlife Frontline Equity Fund	0.0765	22
6	Birla Sunlife Midcap Fund	0.0889	11
7	Birla Sunlife MNC Fund	0.1113	5
8	Birla Sunlife opportunities Fund	0.0436	38
9	DSP BR Opportunities Fund	0.0789	19
10	DWS Alpha Equity Fund	0.0659	27
11	Escorts Growth Plan	-0.1562	49
12	Franklin Bluechip India Fund	0.0032	47
13	Franklin India Prima Fund	0.0962	9
14	Franklin India Prima Plus Fund	0.0034	46
15	HDFC Capital Builder Fund	0.4642	1

16	HDFC Equity Fund	0.0858	15
17	HDFC Growth Fund	0.0843	16
18	HDFC Top 200 Fund	0.0858	14
19	HSBC Equity Fund	0.0775	21
20	ICICI Pru Dynamic Plan	0.3786	2
21	ICICI Pru Top 100	0.2987	3
22	ICICI Top Pru Top 200	0.0646	28
23	ING Core Equity Fund	0.2336	4
24	JM Basic Fund	-0.0009	48
25	JM Equity Fund	0.0384	40
26	Kotak 50	0.0147	44
27	LIC Nomura Equity Fund	0.0394	39
28	LIC Nomura Growth Fund	0.0487	36
29	Morgan Stanley Growth Fund	0.0483	37
30	Principal Growth Fund	0.0503	35
31	Reliance Growth Fund	0.0962	8
32	Reliance Vision Fund	0.0754	24
33	SBI Contra Fund	0.0516	34
34	Sundaram Growth Fund	0.0579	30
35	Sundaram Midcap Fund	0.0987	6
36	Sundaram Select Focus Fund	0.0630	29
37	Tata Bonaza Fund	0.0335	42
38	Tata Discovery Fund	0.0380	41
39	Tata Equity Opportunities Fund	0.0820	18
40	Tata Ethical Fund	0.0788	20
41	Tata Growth Fund	0.0722	26
42	Tata Pure Equity Fund	0.0840	17
43	Tata Pure Equity Fund	0.0751	25
44	Taurus Starshare Fund	0.0882	12
45	UTI Equity Fund	0.0558	31
46	UTI Master Plus	0.0550	32
47	UTI Master Value Fund	0.0258	43
48	UTI MNC Fund	0.0950	10
49	UTI Top 100 Fund	0.0090	45

Source: Researcher's Study

Table 4.7

Mutual Fund Returns vs Market Portfolio Returns

SI.No.	Mutual Fund Name	Mean Mutual Fund Return	Mutual Fund S.D. (σ)	Mean Risk-Free Interest Rate	Mean Market Portfolio Return	Market Portfolio S.D. (σ)
1	Birla Sunlife Advantage Fund	0.075	1.615	0.024	0.076	1.619
2	Birla Sunlife Buy India Fund	0.096	1.343	0.024	0.076	1.619
3	Birla Sunlife Dividend Yield Plus	0.088	1.312	0.024	0.076	1.619
4	Birla Sunlife Equity Fund	0.094	1.535	0.024	0.076	1.619
5	Birla Sunlife Frontline Equity Fund	0.091	1.441	0.024	0.076	1.619
6	Birla Sunlife Midcap Fund	0.097	1.453	0.024	0.076	1.619
7	Birla Sunlife MNC Fund	0.091	1.441	0.024	0.076	1.619
8	Birla Sunlife opportunities Fund	0.058	1.418	0.024	0.076	1.619
9	DSP BR Opportunities Fund	0.094	1.457	0.024	0.076	1.619
10	DWS Alpha Equity Fund	0.084	1.530	0.024	0.076	1.619
11	Escorts Growth Plan	0.001	0.027	0.024	0.076	1.619
12	Franklin Bluechip India Fund	0.093	1.460	0.024	0.076	1.619
13	Franklin India Prima Fund	0.097	1.422	0.024	0.076	1.619
14	Franklin India Prima Plus Fund	0.095	1.380	0.024	0.076	1.619
15	HDFC Capital Builder Fund	0.097	1.343	0.024	0.076	1.619
16	HDFC Equity Fund	0.101	1.510	0.024	0.076	1.619
17	HDFC Growth Fund	0.095	1.416	0.024	0.076	1.619
18	HDFC Top 200 Fund	0.102	1.508	0.024	0.076	1.619
19	HSBC Equity Fund	0.092	1.448	0.024	0.076	1.619
20	ICICI Pru Dynamic Plan	0.096	1.385	0.024	0.076	1.619
21	ICICI Pru Top 100	0.084	1.561	0.024	0.076	1.619
22	ICICI Top Pru Top 200	0.084	1.544	0.024	0.076	1.619
23	ING Core Equity Fund	0.071	1.685	0.024	0.076	1.619
24	JM Basic Fund	0.003	1.915	0.024	0.076	1.619
25	JM Equity Fund	0.062	1.673	0.024	0.076	1.619
26	Kotak 50	0.038	1.705	0.024	0.076	1.619
27	LIC Nomura Equity Fund	0.062	1.686	0.024	0.076	1.619
28	LIC Nomura Growth Fund	0.073	1.676	0.024	0.076	1.619
29	Morgan Stanley Growth Fund	0.069	1.528	0.024	0.076	1.619
30	Principal Growth Fund	0.069	1.471	0.024	0.076	1.619

31	Reliance Growth Fund	0.110	1.440	0.024	0.076	1.619
32	Reliance Vision Fund	0.088	1.490	0.024	0.076	1.619
33	SBI Contra Fund	0.071	1.775	0.024	0.076	1.619
34	Sundaram Growth Fund	0.080	1.597	0.024	0.076	1.619
35	Sundaram Midcap Fund	0.103	1.390	0.024	0.076	1.619
36	Sundaram Select Focus Fund	0.083	1.572	0.024	0.076	1.619
37	Tata Bonaza Fund	0.057	1.782	0.024	0.076	1.619
38	Tata Discovery Fund	0.062	1.857	0.024	0.076	1.619
39	Tata Equity Opportunities Fund	0.098	1.532	0.024	0.076	1.619
40	Tata Ethical Fund	0.092	1.498	0.024	0.076	1.619
41	Tata Growth Fund	0.085	1.587	0.024	0.076	1.619
42	Tata Pure Equity Fund	0.098	1.476	0.024	0.076	1.619
43	Tata Pure Equity Fund	0.098	1.476	0.024	0.076	1.619
44	Tata Starshare Fund	0.095	2.341	0.024	0.076	1.619
45	UTI Equity Fund	0.076	1.930	0.024	0.076	1.619
46	UTI Master Plus	0.070	1.551	0.024	0.076	1.619
47	UTI Master Value Fund	0.044	1.790	0.024	0.076	1.619
48	UTI MNC Fund	0.080	1.110	0.024	0.076	1.619
49	UTI Top 100 Fund	0.032	2.075	0.024	0.076	1.619

Source: Researcher's Study

Table 4.8

Risk and Return Grid

	I		II
High Returns and low Risk	R_a > R_m	High Return & High Risk	R_a > R_m
	σ_a < σ_m		σ_a > σ_m
	Birla Sunlife Buy India Fund		Taurus Starshare Fund
	Birla Sunlife Dividend Yield Plus		UTI Equity Fund
	Birla Sunlife Equity Fund		
	Birla Sunlife Frontline Equity Fund		
	Birla Sunlife Midcap Fund		
	Birla Sunlife MNC Fund		
	DSP BR Opportunities Fund		
	DWS Alpha Equity Fund		
	Franklin Blue-chip India Fund		

	Franklin India Prima Fund			
	Franklin India Prima Plus Fund			
	HDFC Capital Builder Fund			
	HDFC Equity Fund			
	HDFC Growth Fund			
	HDFC Top 200 Fund			
	HSBC Equity Fund			
	ICICI Pru Dynamic Plan			
	ICICI Pru Top 100			
	ICICI Top Pru Top 200			
	Reliance Growth Fund			
	Reliance Vision Fund			
	Sundaram Growth Fund			
	Sundaram Select Focus Fund			
	Tata Equity Opportunities Fund			
	Tata Ethical Fund			
	Tata Growth Fund			
	Tata Pure Equity Fund			
	Tata Pure Equity Fund			
	UTI MNC Fund			
	Sundaram Mid-cap Fund			
	III			IV
Low Return and Low Risk	Ra<Rm		Low Return and High Risk	Ra<Rm
	σa<σm			σa>σm
	Birla Sunlife Advantage Fund			ING Core Equity Fund
	Birla Sunlife opportunities Fund			JM Basic Fund
	Escorts Growth Plan			JM Equity Fund
	Morgan Stanley Growth Fund			Kotak 50
	Principal Growth Fund			LIC Nomura Equity Fund
	UTI Master Plus			LIC Nomura Growth Fund
				SBI Contra Fund
				Tata Bonaza Fund
				Tata Discovery Fund

				UTI Master Value Fund
				UTI Top 100 Fund

Source: Researcher's Study

Table 4.9

Sharpe Ratio's Mutual Fund Scheme vs. Market Portfolio Sharpe Ratio

S.No.	Mutual Fund Name	Mutual Fund (Sharpe Ratio)	Market Portfolio (Sharpe Ratio)
1	Birla Sunlife Advantage Fund	0.0313	0.0319
2	Birla Sunlife Buy India Fund	0.0536	0.0319
3	Birla Sunlife Dividend Yield Plus	0.0485	0.0319
4	Birla Sunlife Equity Fund	0.0454	0.0319
5	Birla Sunlife Frontline Equity Fund	0.0461	0.0319
6	Birla Sunlife Midcap Fund	0.0498	0.0319
7	Birla Sunlife MNC Fund	0.0461	0.0319
8	Birla Sunlife opportunities Fund	0.0239	0.0319
9	DSP BR Opportunities Fund	0.0477	0.0319
10	DWS Alpha Equity Fund	0.0390	0.0319
11	Escorts Growth Plan	-0.8805	0.0319
12	Franklin Bluechip India Fund	0.0470	0.0319
13	Franklin India Prima Fund	0.0509	0.0319
14	Franklin India Prima Plus Fund	0.0513	0.0319
15	HDFC Capital Builder Fund	0.0540	0.0319
16	HDFC Equity Fund	0.0506	0.0319
17	HDFC Growth Fund	0.0500	0.0319
18	HDFC Top 200 Fund	0.0517	0.0319
19	HSBC Equity Fund	0.0463	0.0319
20	ICICI Pru Dynamic Plan	0.0514	0.0319
21	ICICI Pru Top 100	0.0380	0.0319
22	ICICI Top Pru Top 200	0.0386	0.0319
23	ING Core Equity Fund	0.0278	0.0319
24	JM Basic Fund	-0.0114	0.0319
25	JM Equity Fund	0.0226	0.0319
26	Kotak 50	0.0077	0.0319
27	LIC Nomura Equity Fund	0.0224	0.0319
28	LIC Nomura Growth Fund	0.0288	0.0319
29	Morgan Stanley Growth Fund	0.0289	0.0319
30	Principal Growth Fund	0.0299	0.0319
31	Reliance Growth Fund	0.0591	0.0319

32	Reliance Vision Fund	0.0425	0.0319
33	SBI Contra Fund	0.0264	0.0319
34	Sundaram Growth Fund	0.0346	0.0319
35	Sundaram Midcap Fund	0.0568	0.0319
36	Sundaram Select Focus Fund	0.0370	0.0319
37	Tata Bonaza Fund	0.0183	0.0319
38	Tata Discovery Fund	0.0200	0.0319
39	Tata Equity Opportunities Fund	0.0480	0.0319
40	Tata Ethical Fund	0.0451	0.0319
41	Tata Growth Fund	0.0384	0.0319
42	Tata Pure Equity Fund	0.0500	0.0319
43	Tata Pure Equity Fund	0.0500	0.0319
44	Taurus Starshare Fund	0.0301	0.0319
45	UTI Equity Fund	0.0268	0.0319
46	UTI Master Plus	0.0295	0.0319
47	UTI Master Value Fund	0.0110	0.0319
48	UTI MNC Fund	0.0498	0.0319
49	UTI Top 100 Fund	0.0038	0.0319

Source: Researcher's study

Table 4.10

Mutual Fund's Treynor Ratio vs. Market Portfolio's Treynor Ratio

S.No.	Mutual Fund Name	Treynor Ratio (Mutual Fund)	(Treynor Ratio) Market Portfolio
1	Birla Sunlife Advantage	0.0524	0.0517
2	Birla Sunlife Buy India	0.0984	0.0517
3	Birla Sunlife Dividend	0.0867	0.0517
4	Birla Sunlife Equity Fund	0.0764	0.0517
5	Birla Sunlife Frontline	0.0765	0.0517
6	Birla Sunlife Midcap Fund	0.0889	0.0517
7	Birla Sunlife MNC Fund	0.1113	0.0517
8	Birla Sunlife opportunities	0.0789	0.0517
9	DSP BR Opportunities Fund	0.0659	0.0517
10	DWS Alpha Equity Fund	0.0962	0.0517
11	Escorts Growth Plan	0.4642	0.0517
12	Franklin Bluechip India	0.0858	0.0517
13	Franklin India Prima Fund	0.0843	0.0517
14	Franklin India Prima Plus	0.0858	0.0517
15	HDFC Capital Builder Fund	0.0775	0.0517
16	HDFC Equity Fund	0.3786	0.0517

17	HDFC Growth Fund	0.2987	0.0517
18	HDFC Top 200 Fund	0.0646	0.0517
19	HSBC Equity Fund	0.2336	0.0517
20	ICICI Pru Dynamic Plan	0.0962	0.0517
21	ICICI Pru Top 100	0.0754	0.0517
22	ICICI Top Pru Top 200	0.0579	0.0517
23	ING Core Equity Fund	0.0630	0.0517
24	JM Basic Fund	0.0820	0.0517
25	JM Equity Fund	0.0788	0.0517
26	Kotak 50	0.0722	0.0517
27	LIC Nomura Equity Fund	0.0840	0.0517
28	LIC Nomura Growth Fund	0.0751	0.0517
29	Morgan Stanley Growth	0.0882	0.0517
30	Principal Growth Fund	0.0558	0.0517
31	Reliance Growth Fund	0.0550	0.0517
32	Reliance Vision Fund	0.0950	0.0517
33	SBI Contra Fund	0.0436	0.0517
34	Sundaram Growth Fund	-0.1562	0.0517
35	Sundaram Midcap Fund	0.0032	0.0517
36	Sundaram Select Focus	0.0034	0.0517
37	Tata Bonaza Fund	-0.0009	0.0517
38	Tata Discovery Fund	0.0384	0.0517
39	Tata Equity Opportunities	0.0147	0.0517
40	Tata Ethical Fund	0.0394	0.0517
41	Tata Growth Fund	0.0487	0.0517
42	Tata Pure Equity Fund	0.0483	0.0517
43	Tata Pure Equity Fund	0.0503	0.0517
44	Taurus Starshare Fund	0.0516	0.0517
45	UTI Equity Fund	-9.3539	0.0517
46	UTI Master Plus	0.0335	0.0517
47	UTI Master Value Fund	0.0380	0.0517
48	UTI MNC Fund	0.0258	0.0517
49	UTI Top 100 Fund	0.0090	0.0517

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