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Measuring Efficiency of Select Large Cap and Small Cap Open Ended Equity Schemes

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I. Introduction

Investment in mutual fund is considered as safe bet and yields high returns due to professional management and large Asset Under Management (AUM). AUM is a monetary term indicates the market value of all the funds being managed by a fund house on behalf of its clients and investors. The percentage of scheme type aggregate AUM of various mutual fund categories at the end of the study period has been category wise mentioned in Table-1. With their phenomenal investments the fund houses can leverage on low expense ratio, transaction cost, advertisement etc. on the other hand the funds with large amount of AUM may suffer from investing in substandard or low yield investments. Historical research reveals that fund performance is minimal. When risk adjustment is considered, the performance is dismal. In this context researchers assessed the performance of open ended equity growth schemes in India. Samples of 17 schemes with eight years of data were sourced. The data were analyzed using Sharpe risk adjusted measure; Analysis of variance to find the difference in funds managed by different fund houses, compared performance between small cap and large cap funds and finally measured the relative efficiency using DEA.

II. Review of Literature

Since last five decades, the capital market investments in India have been growing continuously on long term basis except in occurrence of crisis or economic slowdown. The mutual funds industry in India is expected to grow 18.6 percent by 2018 (Capoor, 2015). Investments in mutual funds have also increased with increase in investments in stock markets. Lai and Lau (2010) argue that mutual fund performances yield superior returns with relatively lower systematic risks using risk-adjusted performance models. Lipton and Kish (2010) found that funds reported higher returns when those were adjusted separately using information ratio for systematic risk and individual risk. Shawky and Tian (2011) examined that equity mutual funds play some role liquidity of fund holding and shown that mutual fund managers earns additionally return of 1.5% annually as return by rendering liquidity services. Horng (2011) suggests that the mutual funds can generate huge returns and minimize risk by considering transaction fee. Gottesman and Morey (2012) analyzed performance of domestic equity funds using the ratings of Morningstar's corporate culture over a period of five years from 2005 to 2010. To measure fund performance they used Sharpe ratio and regression method. Results show insignificant evidence that corporate culture predicts outperformance. Investors of mutual funds perceive that funds with good corporate culture may not prey to scandal as other funds; this assumption may lead to significant performance of funds. The better corporate cultures have lower expense and turnover ratios are also a reason of better performance.

Oleksandra and Oldrich (2015) evaluated performance of increased investment in emerging regions like BRIC, CEE, Sea, and MENA. They evaluated both active and non-active mutual funds from 27 countries during 2000 to 2015 using Sharpe, Treynor, Jenson models, Fama-French three factor, and Carhart four factor models. The results reveal that mutual funds were underperformed during recession time and recovered little during economic growth.

Vassilios et.al (2015) conducted a study on performance of mutual funds on the basis of gender and style diversity. To understand the effect on fund performance they examined 358 diversified European

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equity funds, and performance was evaluated against market indices. Fama-French (1996) three factor model and Treynor and Mazuy (1996) timing approach were used to test the growth timing skills of fund managers. To deal with the bias from heterogeneity in fund returns they took quintile regression approach. They found no significant difference in performance among male and female fund managers.

Laes & Silva (2014) analyzed the performance of equity funds in Brazil for a period during 2002 to 2012. They used Carhart's four factor model to assess the performance of the funds. Bootstrap procedures and simulation analysis were conducted to identify whether the skill of fund managers influencing the performance or luck. The results of the study say that returns from investment are mostly depending on luck of the fund managers than their skill. They finally expose that the funds with smaller NAVs was underperformed and funds with higher NAVs performed better. The negative unconditional risk-adjusted performance of properly managed funds performs better even in bad conditions than in good conditions of the economy.

The performance persistence using various models like Sharpe ratio, Treynor's measure and Jenson's alpha etc. of any mutual fund in most economies does not give any future guaranteed outperformance or otherwise. The persistence of individual fund performance can be well equipped using the cross-section bootstrap methodology to distinguish skill and luck. The results of many studies reveal that the there is no great extent role of skill of managers when it outperformed, but the performance is attributed to good luck (Cuthbertson et.al.).

Vincent Glode (2011) analyzed 3,147 USA equity mutual funds during 1980 to 2005 and find that the funds with poor performance were charging high fees and generating counter cyclical returns. Eling and Faust (2010) conducted a study on hedge funds and other mutual funds in emerging markets for different sub-periods from 1996 to 2008. Their results designate that majority of the mutual funds were underperformed with traditional benchmarks. Whereas some hedge funds produce momentous positive alpha and hedge funds are more dynamic in transforming the asset allocation.

Basso and Funari (2001) used DEA model to evaluate the performance of mutual funds. The model allows determining the relative efficiency of the funds considered as DMUs. They have collected data of weekly logarithmic returns of 47 Italian mutual funds for a period of 30 months for the research. As the DEA model needs at least one input variable and one output variable, they considered Portfolio Standard Deviation, Subscription and Redemption costs as inputs and Portfolio return as output. The results of their study reveal that the performance of mutual funds are better explained using the DEA by simulating input-oriented, output oriented models and Constant Returns to Scale (CRS), Variable Returns to Scale (VRS), Increasing Returns to Scale (IRS), and Decreasing Returns to Scale (DRS). The results of their study suggest that the DEA methodology is useful in complement the traditional performance indexes in measuring the mutual funds performance.

Data Envelopment Analysis (DEA) is a data analysis tool mostly used in Operational Research area. The DEA has become accepted model in assessing performance in various cases. As a first step in entering the DEA modeling researcher must identify Decision Making Units (DMUs). Portfolio management and its assessment is a key area of financial research. Jensen's alpha and Sharpe index are the two accepted indices in the performance evaluation of mutual funds. But these indices will not provide the efficiency level of the portfolios considered. The problem of efficiency persistence can be defeated easily using the model in operations research is DEA (Choi et.al., 1997).

III. Methodology

a) Objective of the Study

Existing literature discussed above provides mixed results. Few of the researchers (Lai and Lau, Horng, and Shawky and Tian) found mutual funds outperform market, and few others argue that, mutual funds underperform (Eling and Faust, Vincent Glode). Furthermore, performance of mutual funds depends on various factors like fund size, portfolio, expense ratio, managers skills, market conditions etc. In addition to these factors timing and persistence is a major topic for research. If a fund outperforms market, then that performance should continue irrespective of macro economic conditions. Another point to be noted is performance persistence of fund manager, if the fund is performing better under the aegis of a particular fund manager, then that performance should stand for longer time frame.

The present study aims to evaluate performance of open ended equity growth schemes in India. Researchers set the following objectives to conduct this research

1. To evaluate mutual fund scheme performance after adjusted to risk
2. To find out whether there is any difference among performance of fund schemes
3. Is the performance of small cap schemes and large cap schemes are same
4. To measure the relative efficiency of fund schemes using Data Envelopment model.

b) Hypotheses

H1: As different mutual fund schemes are managed by different fund managers, scheme performance differs from each other.

H2: There will be significant difference in the performance of small cap and large cap schemes

c) Data

As on December 31, 2015 there are 43 mutual funds operating in India (Source: Securities and Exchange Board of India - SEBI). The total schemes were grouped into three categories namely Open ended, Close ended, and Interval funds. As on December 31, 2015 there are 31,409 mutual fund schemes exist in India, of which 22,002 are in the category of close end funds, 9,334 are in the category of open ended funds, and 73 schemes exist in the category of interval funds (Source: Association of Mutual Funds in India - AMFI).

Of the 9,334 open ended schemes, 2,161 are open ended equity growth schemes. The present study period was between 2005 and 2014, so the researchers set 2005 as cutoff year and shortlisted 260 open ended equity growth schemes that were launched in the year 2005.

Even though the schemes were launched in the year 2005, there was a time lag between issue date and trading date. For the year 2006 the data was insufficient and irregular. So, researchers considered data from January 1, 2007 to December 31, 2014. Of the 260 schemes many schemes were withdrawn from trading or merged with other schemes, and in few instances, the fund houses were merged with other funds. Considering all these factors, the final sample turned into 17 schemes with complete data for a period of eight years.

The daily Net Asset Value (NAVs) of 17 sample schemes was sourced from AMFI India. For the purpose of comparison schemes were grouped into large cap and small cap based on the average Assets Under Management (AUM). Schemes with AUM above or equal to INR 1,000 crore are categorized as large cap and schemes with AUM below INR 1,000 crore are categorized as small cap schemes.

d) Data Analysis Tools

For the purpose of present study daily NAVs of 17 open ended equity growth schemes were collected during 2007 to 2014. Initially, daily NAVs of the entire sample Scheme were plotted on scatter plots to identify outliers or extreme values. There were no outliers in the data and when a trend line was fitted on scatter plot, data points were cluttered on to the trend line. The data was found linear.

Next, as the data span for eight years researchers opted log normal returns instead of daily continuous compounding returns. The log normal returns smooth the data and make it more linear. After that, researchers computed descriptive statistics to check the normality of the data. Normality test is important, because hypothesis testing tools researchers applied assumes that the data is normally distributed. Skewness and Kurtosis are used to check normality of distributed time series data.

Researchers calculated monthly average return and unsystematic risk of the schemes on daily lognormal returns to understand risk and reward relationship among schemes and in different years of study under consideration.

Thereafter, monthly returns and unsystematic risk was used to calculate the annualized return (continuous compounding return) and yearly compounding individual risk which explain the risk and return relationship among the schemes every year. The performance of mutual fund schemes were evaluated on the basis of risk-adjusted performance measure of Sharpe index after reporting individual risk i.e. Standard deviation.

Hypothesis testing has done to test if there is any significance difference among schemes on the basis of monthly average returns of individual schemes during the period of eight years. To test the hypothesis researchers run year wise Analysis of Variance (ANOVA) on monthly returns of all individual schemes.

The schemes considered for this study were categorized into large cap and small cap equity funds. To test the difference among two categories independent sample t-test was performed, this test considers unequal variances among variables. For this test all the sample schemes in each category treated group as whole during the years of study.

Efficiency of all schemes in each group has measured on a scale using the Scale efficiency measurement tool of Data Envelopment Analysis (DEA), an operations research tool which can be applied in assessing mutual fund performance efficiency. The scale measurement results will be explained in terms of percentage efficient to the most efficient scheme.

IV. Results & Discussion

a) Descriptives

In previous section researchers discussed on selection of funds and statistical tests conducted to analyze the performance of mutual fund schemes. In continuation to that, to test the stationary of the data considered, descriptive statistics were run on daily log normal returns for eight continuous years from 2007. The Skewness results that the data is normally distributed (Skewness is near to '0') among all years and also for all schemes.

b) Risk-adjusted Performance

i. *Annualized Return*

From the daily lognormal returns of 17 schemes, monthly average return has been calculated for the purpose of testing hypothesis. The monthly compounding returns have been used to calculate annualized return every year for eight full years from the year 2007 to 2014. From the Table-3 it is evident that the

schemes reported significant positive annualized returns in years 2007, 2009, 2012, and 2014. ICICI Prudential Blended Plan (ICICI Blended) reported significant consistent positive returns during all years for the period of study considered. All the schemes except ICICI Blended were reported negative continuous compounding returns in the years 2008 and 2011 due to pessimistic market conditions during these years.

ii. *Annualized Standard Deviation*

The volatility of the schemes considered can be seen from the Table-4. The annualized Standard deviation represents the volatility of the schemes in all the years considered. The Schemes were more volatile during negative return period and less in the favorable return period compared to high volatile period. The schemes with positive returns are less volatile in the years 2007, 2012, and 2014. It is further identified that the Standard deviation of all schemes in the year 2008 were more compared to the previous year i.e. 2007 and the year 2008 was more volatile than all other years. The very recent year to the study period i.e. 2014 ended positively reporting positive returns and less volatile compared to all other previous years.

All the schemes experienced fat volatility in the year 2008 and the near volatility continued to the subsequent year. The higher volatility severely impacted returns in years where the schemes reported negative returns. The relation between risk and reward explanation has here been done independently. These results might not yield appropriate discussion in assessing the performance of funds during the years of study. The suitable measure can be a risk-adjusted performance of mutual funds is Sharpe index.

iii. *The Sharpe Ratio*

The annualized return on Net Asset Value of mutual funds provides information on returns without considering the risk parameter. Sharpe ratio is one of the risk-adjusted performance indexes of other measures. The Sharpe ratio is calculated using the expected return on portfolio, risk free rate of return, and Standard deviation. The same tool applied on the schemes for the study under consideration. Table- 5 shows the results of the Sharpe ratio after adjusting for risk for individual years from 2007 to 2014 for all the schemes of the sample. The higher the ratio the better performance will be considered by using Sharpe ratio.

The results of the Sharpe ratio reveal that the favorable returns mutual fund schemes after adjusting risk for the years 2007, 2009, 2012, and 2014, with highest return of 2.81 by Birla Sunlife India Gennext Fund (BIRLA Gennext), 3.07 by ICICI Prudential Blended Plan A (ICICI Blended), 2.46 by Principal Large Cap Fund (SP), 4.81 by ICICI Blended, and 6.21 by ICICI Blended respectively. All the schemes reported negative results in the years 2008 and 2011 except the scheme ICICI Blended. Researchers can observe the clear difference from the Table-1 and Table-3 are the annualized returns in the year 2010 were significant positive returns, but Sharpe ratio showing the negative performance as the risk was more in that year. The performance of mutual funds was not positive due to fluctuations in the fund movements as market influences these funds.

c) *Testing Hypothesis*

Performance persistence of mutual funds has been tested with differences between the sample. For this, researchers used monthly average return of all the schemes for the eight years from 2007 to 2014 were considered. Researchers tested hypothesis by stating the null hypothesis that there is no significance difference between the individual schemes taken into consideration. The hypothesis test has been conducted using one-way Analysis of Variance (one-way ANOVA) using Microsoft Excel. The results of the ANOVA can be figured from Table-6, which reveal that the degree of freedom (df) between the sample (t) is 16 (t-1=17-1) and the df within sample is 187. The relationship of F value and F critical value give justification to the hypothesis. From the table-5 it is observed that the F-value is less than F-critical value in all years from 2007 to 2014, hence the null hypothesis cannot be rejected. As per the test results of the ANOVA there is no significance difference between the samples used for the evaluation of performance of mutual funds.

d) *Comparative Analysis (t-test)*

The interim objective of the study was to perform comparative evaluation of large cap and small cap open ended equity schemes. To achieve the objective researchers categorized the 17 schemes into large cap equity and small cap equity funds on the basis of Average Assets under Management (AAUM) sourced from the factsheets of respective fund houses as on 31/12/2014. The comparative analysis of the performance efficiency has been done after testing the significance difference i.e. variability among two categories using the t-test statistic.

The t-test results presented in Table-7 presents the values of hypothesized Mean difference of the categories. The one tail p-value of the t-test result is more than alpha i.e. 0.05, the null hypothesis says that there is no significance difference among the categories is accepted. Further study on comparative performance efficiency model applied, as the results of the independent sample t-test is accepting the null hypotheses.

e) *Data Envelopment Analysis*

The results of relative efficiency of large cap equity funds category provided in table - 8, which explains the most efficient scheme to other efficient and inefficient funds. The scheme with 1 (100%) is to be considered as most efficient among the other schemes.

The scheme UTI Opportunities Fund-Growth Option (UTI Opportunity) and SBI Magnum Multiplier Fund (ICICI Infra) were most efficient schemes for the year 2007 and efficiency of other schemes in the year can be seen from table 7. UTI Equity was continued with more efficiency in three consecutive years from 2008 to 2010. In the subsequent years other schemes were efficient i.e. UTI Opportunity in 2011, Franklin Small in years 2012 and 2014, and SBI Multiplier in 2013.

The efficiency scores of small cap equity schemes were shown in table - 9, which provide the scores of ten small cap schemes from the year 2007 to 2014. It is observed that ICICI Blended was the only scheme with the highest efficiency score (1) in all the years except in 2013, ICICI Exports occupied maximum efficiency score during 2013. Interestingly, the schemes reported maximum efficiency score in all the years from the same mutual fund. All small cap schemes compared to large cap schemes were treated as inefficient schemes. The overall efficiency of both large cap and small cap equity funds were also tested by aggregating the eight years annualized return of individual schemes. The efficiency scores of both large cap and small cap equity funds were finally evaluated as inefficient.

V. Conclusion

One of the objectives of the study is to analyze performance of mutual fund schemes after adjusting for risk. The results of the study reveal that for four years all the funds reported positive risk adjusted returns and for remaining four years negative returns. The years when positive returns reported during those years the stock market in general reported positive returns. The years when schemes reported negative returns, the market was also moved downside performance.

Another objective is to test whether there is any difference in returns among schemes or they similar. When researchers tested to find out the difference among returns of funds using analysis of variance, researchers failed to reject the null hypothesis, which mean all the funds moved in tandem. This result implies that, fund managers did not exhibit any extraordinary skill to outperform the market. However to some extent during the time of bull market they chose right portfolio and reported similar results as of markets.

The study hypothesize that there will be a significant difference in the performance of small cap and large cap schemes. The hypothesis testing results of present study did not find any difference in the performance of small cap and large cap schemes. The study failed to reject null hypothesis.

Finally, the relative efficiency of schemes considered was measured using the DEA model. The DEA results were also mixed. The performances of Schemes are not persistent. In large cap category UTI Fund Schemes were more efficient than other schemes in the category. Whereas, ICICI Blended was most efficient scheme than other schemes in the small cap category. Researchers conclude that when market conditions are positive and Bull Run is there similar to stock markets, mutual funds also yield same returns.

VI. Practical Implications

Researchers suggest that investors with quite good amount of money to invest are advised to invest in equity stocks directly instead of opting for mutual funds. By this they can save expense ratio, portfolio management fee, high transaction cost, spread in bid-ask price. However, small investors can opt for mutual funds, because the fund houses offer professional services.

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Tables

Table-1 : Category Wise Aggregate AUM As On December 31, 2014 (% of Scheme total)

Types of Schemes / Investor Type	Corporates	Banks/FIs	FIIs	High Networth Individuals*	Retail
Liquid/Money Market	83.27	5.33	0.58	9.73	1.08
Gilt	59.92	1.12	0.6	33.72	4.64
Debt Oriented	57.59	1.41	1.27	32.91	6.83
Equity Oriented	12.02	0.37	1.56	29.32	56.74
Balanced	16.11	1.17	0.17	40.32	42.23
Gold ETF	48.82	0.06	0.04	15.92	35.17
ETFs(other than Gold)	21.07	34.16	20.87	13.63	10.27
Fund of Funds investing Overseas	18.84	0	0	56.39	24.77

*Source: Association of Mutual Funds in India. *Individuals investing ₹ 5 lakh and above.*

Table-2 : Descriptive Statistics of 17 Schemes

Scheme Code	Kurtosis	Skewness
Birla Gennext	3.683	-0.608
Birla Top100	3.518	-0.393
Franklin Flexicap	3.815	-0.347
Franklin Small	4.638	-0.755
HDFC	3.560	-0.426
HSBC	2.633	-0.704
ICICI Blended	7.332	0.816
ICICI Exports	4.095	-0.496
ICICI Infra	4.707	-0.268
Kotak	4.204	-0.506
Principal	6.051	-0.525
SBI Contra	4.995	-0.503

SBI Multicap	3.899	-0.432
SBI Multiplier	3.454	-0.441
Sundaram	4.305	-0.657
UTI Equity	3.832	-0.473
UTI Opportunity	3.946	-0.314

Source: Researchers' own contribution

Table-3 : Annualized Return of 17 Schemes for Eight Years (%)

Scheme Code	2007	2008	2009	2010	2011	2012	2013	2014
Birla Gennext	**53.64**	-61.33	**39.49**	17.04	-18.13	**38.90**	-2.63	**41.67**
Birla Top100	**43.73**	-61.42	**43.30**	8.42	-26.25	**34.07**	4.83	**41.54**
Franklin Flexicap	**46.98**	-61.68	**49.85**	9.95	-27.76	**28.01**	1.48	**44.21**
Franklin Small	**51.49**	-92.93	**59.54**	7.80	-33.78	**40.64**	5.57	**63.88**
HDFC	**46.38**	-70.09	**54.48**	14.91	-26.96	**19.94**	-6.31	**43.37**
HSBC	**53.02**	-103.33	**55.96**	-0.38	-64.30	**40.29**	-8.55	**60.93**
ICICI Blended	**7.69**	9.50	**4.10**	6.47	7.78	**9.77**	9.29	**8.76**
ICICI Exports	**53.65**	-93.35	**43.99**	10.06	-28.79	**31.07**	35.76	**42.95**
ICICI Infra	**73.69**	-64.94	**43.45**	4.27	-39.38	**27.33**	-10.02	**46.50**
Kotak	**45.94**	-67.27	**48.78**	6.68	-28.08	**28.99**	4.04	**36.17**
Principal	**57.12**	-76.04	**62.34**	12.61	-31.82	**32.17**	-1.52	**38.43**
SBI Contra	**56.67**	-70.22	**49.24**	-5.45	-37.84	**31.76**	-6.45	**40.40**
SBI Multicap	**42.61**	-78.12	**44.52**	-3.01	-40.56	**36.07**	-0.62	**46.63**
SBI Multiplier	**57.34**	-75.12	**48.44**	2.35	-34.87	**31.27**	4.82	**41.28**
Sundaram	**63.79**	-80.55	**64.93**	-3.46	-44.38	**36.99**	-13.01	**74.32**
UTI equity	**47.70**	-55.63	**50.83**	11.92	-23.26	**31.53**	4.03	**41.77**
UTI Opportunity	**65.14**	-58.15	**53.67**	10.54	-15.47	**24.87**	1.01	**37.00**

Source: Researchers' own contribution

Table-4 : Annualized Standard Deviation of 17 Schemes for Eight Years (%)

Scheme Code	2007	2008	2009	2010	2011	2012	2013	2014
Birla Gennext	17.29	35.15	19.33	15.04	21.32	13.38	18.18	12.18
Birla Top100	19.57	35.78	21.51	13.81	18.74	17.67	15.21	16.03
Franklin Flexicap	20.04	40.12	24.45	15.46	20.03	17.39	15.72	14.46
Franklin Small	22.04	45.46	30.91	16.61	19.03	15.53	18.08	15.48
HDFC	20.69	46.91	27.60	13.52	17.30	17.22	19.88	20.69
HSBC	21.39	47.27	25.56	21.97	31.67	25.16	26.91	16.13
ICICI Blended	1.23	1.47	1.18	1.14	0.89	0.99	0.56	0.61
ICICI Exports	19.94	44.98	27.59	15.52	21.02	19.65	11.46	15.54
ICICI Infra	26.50	49.15	21.43	14.67	19.14	21.44	20.32	29.37
Kotak	18.69	40.39	21.26	13.98	19.14	17.85	10.41	12.28
Principal	23.06	47.50	23.27	13.87	17.84	16.78	14.23	15.00
SBI Contra	21.54	42.69	24.53	15.91	20.28	15.79	14.82	12.90
SBI Multicap	23.50	39.61	22.83	14.90	21.86	17.03	15.26	12.99
SBI Multiplier	20.81	40.83	21.51	13.41	19.66	15.42	15.08	12.30
Sundaram	26.48	50.80	31.87	18.18	22.08	18.82	21.68	26.59

UTI Equity	21.59	35.82	19.77	14.00	17.93	15.78	14.27	13.68
UTI Opportunity	24.30	32.73	22.41	14.60	15.47	15.43	14.27	13.54

Source: Researchers' own contribution

Table-5 : Sharpe Ratio as a measure of risk-adjusted Performance (%)

Scheme code	2007	2008	2009	2010	2011	2012	2013	2014
Birla Gennext	2.81	-1.89	1.78	0.80	-1.08	2.53	-0.42	3.01
Birla Top100	1.98	-1.86	1.78	0.25	-1.67	1.64	-0.01	2.28
Franklin Flexicap	2.09	-1.66	1.83	0.32	-1.64	1.32	-0.22	2.71
Franklin Small	2.11	-2.15	1.76	0.17	-2.04	2.29	0.03	3.80
HDFC	2.00	-1.60	1.79	0.73	-1.85	0.87	-0.57	1.85
HSBC	2.24	-2.29	1.99	-0.24	-2.19	1.40	-0.50	3.47
ICICI Blended	2.19	3.07	-0.76	1.29	3.12	4.81	7.65	6.21
ICICI Exports	2.44	-2.19	1.41	0.33	-1.61	1.33	2.68	2.44
ICICI Infra	2.59	-1.42	1.79	-0.05	-2.32	1.04	-0.74	1.41
Kotak	2.19	-1.79	2.06	0.12	-1.73	1.34	-0.09	2.54
Principal	2.26	-1.71	2.46	0.55	-2.06	1.62	-0.46	2.23
SBI Contra	2.40	-1.76	1.80	-0.66	-2.11	1.69	-0.77	2.75
SBI Multicap	1.60	-2.10	1.73	-0.54	-2.08	1.83	-0.37	3.20
SBI Multiplier	2.52	-1.96	2.02	-0.20	-2.03	1.70	-0.01	2.95
Sundaram	2.22	-1.68	1.88	-0.47	-2.24	1.70	-0.83	2.61
UTI Equity	1.98	-1.69	2.32	0.49	-1.58	1.68	-0.07	2.69
UTI Opportunity	2.47	-1.93	2.17	0.38	-1.32	1.29	-0.28	2.36

Source: Researchers' own contribution

Table-6 : Analysis of Variance of Schemes

		df between-16		df within-187	
aYear	MS Between	MS Within	F-value	P-value	F critical
2007	0.0016	0.0037	0.43	0.97	1.70
2008	0.0048	0.0142	0.34	0.99	1.70
2009	0.0015	0.0047	0.32	0.99	1.70
2010	0.0004	0.0019	0.19	1.00	1.70
2011	0.0018	0.0033	0.56	0.91	1.70
2012	0.0005	0.0025	0.20	1.00	1.70
2013	0.0010	0.0023	0.43	0.97	1.70
2014	0.0016	0.0022	0.70	0.79	1.70

Source: Researchers' own contribution

Table-7 : t-Test -Two-Sample Assuming Unequal Variances		
	Small Cap	*Large Cap*
Mean	9.75	11.34
Variance	1793.91	1762.96
Observations	80.00	56.00
Hypothesized Mean Difference	0.00	
df	119.00	
t Stat	-0.22	
P(T<=t) one-tail	0.41	
t Critical one-tail	1.66	
P(T<=t) two-tail	0.83	
t Critical two-tail	1.98	

Source: Researchers' own contribution

Table-8 : Efficiency of Large Cap Funds (%)								
Scheme	2007	2008	2009	2010	2011	2012	2013	2014
UTI Opportunity	1.00	0.96	0.93	0.92	1.00	0.62	0.77	0.73
UTI Equity	0.85	1.00	1.00	1.00	0.67	0.78	0.98	0.82
Franklin Flexi cap	0.84	0.86	0.98	0.89	0.49	0.69	0.80	0.84
SBI Contra	0.98	0.62	0.97	0.00	0.06	0.79	0.25	0.80
ICICI Infra	1.00	0.77	0.85	0.57	0.00	0.68	0.00	0.86
Franklin Small	0.91	0.00	0.75	0.77	0.23	1.00	0.94	1.00
SBI Multiplier	0.99	0.49	0.95	0.46	0.19	0.77	1.00	0.81

Source: Researchers' own contribution

Table-9 : Efficiency of Small Cap Funds (%)								
Scheme	2007	2008	2009	2010	2011	2012	2013	2014
Birla Top100	0.51	0.37	0.78	0.77	0.53	0.30	0.66	0.28
ICICI Blended	1.00	1.00	1.00	1.00	1.00	1.00	0.82	1.00
Sundaram	0.39	0.20	0.59	0.00	0.28	0.30	0.00	0.19
ICICI Exports	0.50	0.09	0.78	0.67	0.49	0.31	1.00	0.28
SBI Multicap	0.51	0.22	0.78	0.05	0.33	0.30	0.46	0.27
HDFC	0.50	0.29	0.77	0.54	0.52	0.38	0.25	0.28
Principal	0.45	0.24	0.77	0.59	0.45	0.31	0.42	0.28
HSBC	0.50	0.00	0.77	0.31	0.00	0.16	0.17	0.26
Birla Gennext	0.50	0.37	0.78	0.51	0.64	0.29	0.38	0.28
Kotak	0.50	0.32	0.77	0.96	0.50	0.32	0.63	0.29

Source: Researchers' own contribution