

Different Faces of Risk and Return Associated with Equity Funds Vis a Vis Benchmark Stock Index in India

Meetu Chawla

Research scholar
Department of Management Studies,
Maharishi Markandeshwar University ,
Sadopur, Ambala

Dr. Naaz Gorowara

Assistant Professor,
Department of Management Studies,
Maharishi Markandeshwar University,
Sadopur(Ambala).

Abstract

Risk and return are two key facets of Mutual fund Investment. Risk and return framework influences the investment decision of an investor. Hence this paper has tried to investigate the different faces of risk and return associated with equity mutual funds Vis a Vis benchmark stock index in India. Monthly closing NAV's of Equity funds along with benchmark indices (BSE Sensex, Nifty 50) are examined for a period from April 1, 2008 till February 29, 2020 .The paper discusses about the total risk, systematic risk and unsystematic risk associated with selected mutual fund schemes and benchmark index. It also revolves around the annual returns (continuously compounded) provided by the equity schemes in Indian stock market. Line charts, Unit root tests (Augmented Dickey-Fuller test) were adopted to check the stationery nature of the time series and to convert into stationery one. Results exhibited that all the Mutual Funds provided significant positive growth and higher returns as compared to Benchmark stock indices.

Keywords: Risk, Return, Benchmark indices, Systematic Risk, Unsystematic risk, Unit root test.

Introduction

The Indian mutual fund industry has emerged as one of the key drivers of growth in terms of size and depth of the financial market in Indian economy. Among many of the financial instruments, mutual products are gaining popularity and providing opportunities for investors because of its well-regulated benefits and diversification of risk, so a more quantifiable analysis is required to evaluate the performance of growth oriented mutual fund schemes of India in association with their risk and return Vis -a- Vis benchmark stock index. The main problem of the study is to examine the financial performance, associated risk and returns of selected equity growth oriented open-ended mutual fund schemes with respect to the benchmark stock indices in India. So, an attempt has been made to analyse the different faces of risk and return associated with equity fund in comparison with Benchmark indices. Mutual fund Industry has come a long way in India and booming the world of finance. According to AMFI, AUM of Indian Mutual fund Industry has enormously grown from Rs. 6.14 trillion as on March 31, 2010 to 22.23 trillion as on March 31, 2020, more than $3\frac{1}{2}$ fold increase in the time period of 10 years. However they were

introduced in India in 1963 with the formation of UTI, which was the first player in mutual fund industry, at the initiative of Reserve bank of India and Govt. of India. However up to 1987, UTI had monopoly over the market till the opening of public sector. In 1987 SBI and Canara bank floated Mutual fund in Indian mutual fund Industry. 1993 was marked by the entry of private mutual funds in the Indian market (Manek, 2016). Hence, the Indian mutual fund industry has come a long way and has bright future prospects as investors are aware and want to invest in these AMC's. Hence Mutual fund is an attempt towards maximising the return of the investor and minimising the different levels of risk being involved with the securities. (Prince and Bacon 2010)

Review of literature

This is a brief description about research work conducted in the field of mutual funds. Some of these studies are based on Indian mutual funds and abroad, which have been reviewed to identify the research gap and significance for the present study.

Treynor (1965) formulated a methodology for performance evaluation of a mutual fund that is being opined as reward to volatility ratio, which is defined as average excess return over the portfolio return. Sharpe (1966) who developed the 'Sharpe ratio' (measuring fund performance) ranked mutual funds based on the Sharpe ratio over two periods from 1944 to 1953 and from 1954 to 1963. Jensen (1968) did a pioneer work in developing a portfolio evaluation technique consisting of risk adjusted returns. His empirical study was based on the ability of 115 fund managers. His empirical work analyzed the performance of mutual funds by applying alpha (Jensen's alpha) during the period from 1945 to 1964. Results revealed that 39 funds shown above average returns and concluded that fund managers were not able to predict stock price movements. Diversification was ignored in his paper. Jayadev, (1996) conducted an empirical study by taking 36 equity mutual funds and his sample data was based on monthly returns over a period of 3 years and it was analyzed that there was high presence of

market risks in the investment related to mutual funds. Growth oriented mutual funds like Master gain and Magnum showed a better performance and provided satisfactory average monthly returns. Sethu (2001) examined the NAV data related to the 18 open-ended mutual funds between 1995 and 1999. In respect to this, the different evaluation techniques like NSE Nifty, BSE Sensitive Index and S&P CNX 500 have been used to evaluate the performance of the mutual funds. It was concluded that the portfolio of the investors was not diversified in nature. Naulas (2005) explored the performance of Greek equity funds through risk and return analysis. Time period of their study was 1997 to 2000. They found that in the first three years of mutual funds, the funds performed better in comparison to the stock market and in the fourth year Greek funds were not able to perform due to negative returns with respect to risk and return. Panwar and Madhumathi (2005) evaluated public sector and private sector funds during the period from May, 2002 to May, 2005. Results revealed that public sector sponsored funds exhibit the average return as reflected by private sector funds and do not differ significantly. The study was also found that there was a statistical difference between sponsored funds in terms ESDAR (excess standard deviation adjusted returns) as a performance evaluation measure to explore the differences in features of asset held, portfolio diversification on investment and performance for the span of time. Duggimpudi (2010) paper revolves around the performance evaluation of equity diversified funds in the Indian capital market over ten years. Samples were obtained in two overlapped phases from 2000 to 2009 and from 2005 to 2009, respectively used in this empirical analysis. Various performance ratios namely Sharpe, Treynor and Jensen have been used in this paper. In addition to that, the equity funds were ranked on the basis of their performance in the last ten years. Later Ikram & Khan, (2011), also worked on strong market efficiency theory by applying risk adjusted ratios like Sharpe, Treynor and Jensen respectively. They further Evaluated the appraisal of 8 mutual funds for the time period from April 1, 2000 to April 30, 2005 and evaluated the

efficiency of Indian Capital Market. The results of this study indicated that the mutual funds outperformed the benchmark index and concluded that the Indian Capital Market is not Strong form Efficient. Pandow and Bhutt (2017) exhibited the risk and return analysis of 44 mutual funds for the time period of 2007-2011 by applying average return, risk free return and standard deviation. According to him there are two factors which effect investors are minimization of risk and maximization of return. They carried scheme wise analysis and revealed that 80% of the schemes performed well except handfuls which were not able to beat the market. Their study emphasized on floating mutual funds in Tier II and Tier III cities of India and concluded that there is significant growth rate of mutual funds in India and fund managers should focus on generating superior risk free rate of return.

Objectives and research methodology

The objective of the research paper is to examine the risk and return behavior of the 14 equity schemes in India and its comparison with the benchmark stock indices. The following hypothesis are tested in the study

Hypothesis 1: The equity funds are better option for equity investments as they perform better than benchmark equity indices

Hypothesis 2: There exists significant risk diversification in equity funds as compared to benchmark equity indices

The paper discusses about the total risk, systematic risk and unsystematic risk and associated with the selected equity schemes. This paper also discusses about the annual returns (continuously compounded) provided by the equity schemes in Indian stock market. The study also estimates the risk adjusted returns provided by the schemes.

Data analysis and interpretation

Risk and return of selected equity schemes

Risk and return of selected equity schemes is analyzed with respect to Benchmark Index. Line charts are drawn to give a better picture of the performance of funds on the basis of their Net Asset value (Prices), Graphs indicated that all the equity funds outperformed over the Benchmark (BSE Sensex and Nifty 50).

Table 1: Descriptive analysis of index and fund returns

Name of funds and stock indices	Return	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	Probability
ABSL Front Line Fund	0.88%	0.65%	27.49%	-29.22%	5.81%	-0.48848	10.19052	313.754	0.000
HDFC Equity Fund	0.91%	1.07%	29.02%	-27.83%	6.59%	-0.10985	6.679702	80.96464	0.000
HDFC Top 100 Fund	0.93%	1.01%	25.87%	-25.18%	6.14%	-0.12646	6.271599	64.15532	0.000
ICICI Prudential Blue Chip Fund	0.99%	1.13%	20.99%	-23.97%	5.18%	-0.38026	7.108247	104.0092	0.000
ICICI Mid Cap Fund	0.76%	1.04%	32.48%	-43.32%	7.33%	-1.17469	13.22761	656.1534	0.000

Kotak Emerging Equity Mid Cap Fund	0.93%	2.09%	22.85%	-30.68%	6.62%	-1.09403	7.231917	135.2344	0.000
Kotak Equity Opportunities Fund	0.88%	1.12%	29.58%	-28.90%	6.05%	-0.52472	10.17747	313.5123	0.000
Reliance Vision fund	1.22%	0.97%	81.37%	-22.68%	9.30%	4.436243	40.39286	8800.143	0.000
Reliance Growth Fund	0.88%	1.21%	29.24%	-25.28%	6.37%	-0.07031	6.658238	79.85644	0.000
SBI Blue Chip Fund	0.80%	0.80%	29.34%	-23.41%	5.77%	-0.03757	8.631953	189.0254	0.000
SBI Magnum Multi Cap Fund	0.76%	1.10%	24.65%	-26.55%	5.89%	-0.59572	7.505651	129.4176	0.000
UTI Mid Cap Fund	1.07%	1.60%	33.62%	-27.72%	6.78%	-0.1761	7.967898	147.7908	0.000
UTI Equity Fund	0.99%	0.98%	20.01%	-22.88%	5.25%	-0.61351	6.437593	79.38062	0.000
Nifty 50	0.60%	0.55%	24.74%	-30.67%	6.05%	-0.67818	8.695433	204.2378	0.000
BSE Sensex	0.63%	0.52%	24.89%	-27.30%	5.97%	-0.46308	7.689598	136.1485	0.000

Growth rate analysis of the selected funds and stock indices

In the study the growth rate of the selected mutual funds as well as the stock indices are calculated and compared. The growth rate of the mutual funds and stock indices are

estimated with the help of semi log modal. The semi log model used in the study is mathematically represented as below:

$$\text{Log (mutual fund Nav)} = \alpha + \beta * \text{time} + \varepsilon$$

The log the mutual funds NAV is considered as the dependent variable and time is considered as the independent variable. Since the monthly average of NAV of the different mutual funds is considered in the study, the regression model will provide the monthly growth rate. The slope coefficient of the regression model if multiply with 100, indicates the monthly growth rate of the fund. The

annual growth rate is calculated by multiplying the monthly growth rate with 12. The statistical significance of growth rate of the fund's NAV is examined with the help of t statistics and its p value at 5 percent significant level. The result of the growth rate analysis is shown below in table 2.

Table 2: Growth rate analysis of the funds and stock indices

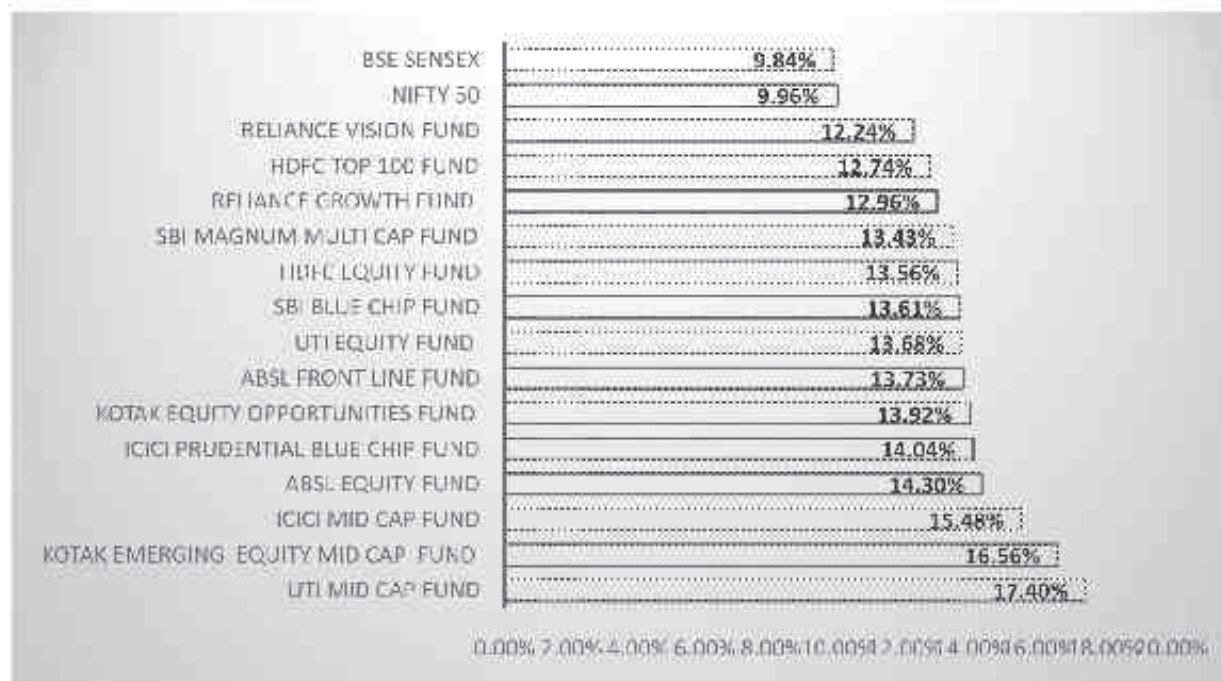
Name of funds and stock indices	Monthly growth rate	Annual growth rate	T statistics (p value)	F statistics (p value)	R square
ABSL Equity Fund	1.19 %	14.299 %	36.137 (0.000)	1305.886 (0.000)	90.25%
ABSL Front Line Fund	1.144%	13.72%	41.549 (0.000)	1726.330 (0.000)	92.45%
HDFC Equity Fund	1.13%	13.56%	34.462 (0.000)	1187.893 (0.000)	89.38%
HDFC Top 100 Fun	1.061 %	12.74 %	37.283 (0.000)	1389.841 (0.000)	90.78%
ICICI Prudential Blue Chip Fund	1.17%	14.04%	46.441 (0.000)	2166.249 (0.000)	93.88%
ICICI Mid Cap Fund	1.29%	15.48%	29.852 (0.000)	891.175 (0.000)	86.33%
Kotak Emerging equity Mid cap Fund	1.38%	16.56%	35.550 (0.000)	1263.851 (0.000)	89.99%
Kotak Equity Opportunities Fund	1.16%	13.92%	39.291 (0.000)	1544.286 (0.000)	96.36%
Reliance Vision fund	1.02%	12.24%	26.441 (0.000)	699.241 (0.000)	83.21%
Reliance Growth Fund	1.08%	12.96%	33.333 (0.000)	1110.915 (0.000)	88.73%
SBI Blue Chip Fund	1.13%	13.60 %	40.685 (0.000)	1655.290 (0.000)	92.15%
SBI Magnum Multi Cap Fund	1.11%	13.42%	35.058 (0.000)	1229.11 (0.000)	89.70%
UTI Mid Cap Fund	1.45%	17.4%	34.160 (0.000)	1166.914 (0.000)	89.21%
UTI Equity Fund	1.14%	13.68	46.481 (0.000)	2160.860 (0.000)	93.87%
Nifty 50	0.83%	9.96%	35.177	1237.471	89.77%
BSE Sensex	0.82%	9.84%	33.861 (0.000)	1146.910 (0.000)	89.05%

The results indicate that the probability value of t-statistics is found to be less than 5 % level of significance. Hence the significant growth rate of all the selected Mutual Funds and stock indices can be concluded. It is also observed that all the Mutual Funds provided higher returns as compared to Benchmark stock indices. The average annual growth rate provided by stock indices is found to be 9.84% in case of BSE Sensex and 9.96% in case of Nifty 50. However all the selected Mutual Funds provided the annual returns more than 12%. Hence on an average the funds provide at least 3% returns over and above the stock indices. The highest return is provided by UTI Midcap Fund (17.4%), Kotak Equity Opportunities Mid Cap Fund (16.56%) and ICICI Midcap Fund (15.48%). The remaining selected funds

provided the annual returns in the range of 12.24% - 14.30%. Hence it can be concluded in the study that the investment in Mutual Funds is one the most preferred available option for the retail investors in order to make handsome returns in long term from the equity market.

It is suggested to the retail investor that they should invest in Mutual Funds rather than invest in stock directly. However significant research is required to select the best performing Mutual Funds. It is also observed that all these funds provided good returns in long term period. The annual return of the selected mutual funds is shown below in Figure:

Figure: Returns provided by selected mutual funds as compared to benchmark stock indices.



Unit root test

It is observed that most of the financial time series are suffering from Unit root problem. It is recommended that the econometric analysis should be applied on the financial Time series after dealing with the problem of Unit root. Most of the econometric Models developed on the financial time series with Unit root problem are considered spurious. Since we are having the monthly behavior of selected

Mutual Funds and stock indices, it is required to examine the unit root if any present in the behavior of the series. The ADF test is used to examine the Unit root in the selected financial time series. The ADF test is applied with three assumptions namely none, with intercept and with intercept and a trend.

The ADF Unit root test is expressed mathematically as

$$Y_t = \alpha + \beta_1 * time + \beta_2 * Y_{t-1} + \sum_{i=2}^n \beta_i * Y_{t-i} + \varepsilon$$

Where the first term indicates the intercept, second term indicates the trend, the third term test the present of unit root and fourth term indicates the lagged values of the

series. The Unit root test assumes the null hypothesis that the series is having Unit root or the series is non stationery. The result of Unit root test is shown below:

Table 3: Results of the unit root test

<i>Time Series</i>	None	With Intercept	With intercept and trend	Remark
	T stats (p value)	T stats (p value)	T stats (p value)	
Nifty 50	1.264 (0.947)	-0.314 (0.918)	-3.692 (0.026)	Unit root exists
BSE Sensex	1.412 (0.960)	-0.139 (0.941)	-3.527(0.040)	Unit root exists
ABSL Equity Fund	1.934(0.987)	0.127(0.966)	-2.639(0.263)	Unit root exists
ABSL Front Line Fund	1.781(0.981)	-0.310(0.9192)	-2.913(0.161)	Unit root exists
HDFC Equity Fund	1.278(0.948)	-0.680(0.847)	-2.752(0.2175)	Unit root exists
HDFC Top 100 Fund	1.827(0.983)	-0.183(0.9367)	-3.001(0.1355)	Unit root exists
ICICIPrudentialBlue Chip Fund	2.145(0.992)	-0.311(0.9191)	-2.447(0.353)	Unit root exists
ICICI Mid Cap Fund	1.378(0.957)	-0.197(0.934)	-2.447(0.353)	Unit root exists
Kotak Emerging Equity Fund	1.99(0.989)	0.331 (0.979)	-2.661(0.254)	Unit root exists
Kotak Equity Opportunities Fund	2.457(0.996)	0.694(0.991)	-2.793(0.202)	Unit root exists
Reliance Vision fund	1.658(0.976)	0.753(0.992)	-1.139(0.917)	Unit root exists
Reliance Growth Fund	1.701(0.978)	-0.063(0.950)	-2.682(0.245)	Unit root exists
SBI Blue Chip Fund	1.822(0.983)	-0.071(0.949)	-2.984(0.140)	Unit root exists
SBI Magnum Multi Cap Fund	1.919(0.986)	0.2439(0.974)	-2.793(0.202)	Unit root exists
UTI Mid Cap Fund	1.507(0.967)	-0.375(0.909)	-2.099(0.541)	Unit root exists
UTI Equity Fund	2.654(0.998)	0.559(0.988)	-2.998(0.136)	Unit root exists

The result indicates that the probability value of t statistics in case of all the mutual funds with all three assumptions is found to be greater than 5% level of significance. Hence it can be concluded that the monthly NAV Series of all the selected mutual funds are containing unit root and non-stationery in behavior. Hence, the NAV series of mutual Funds is unfit for any econometric modeling and required to be transformed. In order to make all the series stationary the first log difference is estimated. The first differencing after taking the log of all the series of selected mutual Funds provide the monthly returns which are expected to be stationary and fit for further econometric modeling.

In case of stock indices Nifty 50& BSE Sensex, the results indicate that the series are trend stationary because in case of 3rd assumption i.e. with intercept and trend, the probability value is found to be more than 5% level of significance. Hence in order to make the stock indices stationary the trend is removed in order to eliminate the unit root problem. The ADF test is further applied to all the transformed series and the results obtained are shown below.

Table 4: Results of Unit root Test applied on the transformed series

<i>Time Series</i>	None	With Intercept	With intercept and trend	Remark
	T stats (p value)	T stats (p value)	T stats (p value)	
Nifty 50 Return	-10.914 (0.000)	-10.952 (0.000)	-10.931 (0.000)	Series are not containing unit root
BSE Sensex Return	-10.524 (0.000)	-10.563 (0.000)	-10.551 (0.000)	Series are not containing unit root
ABSL Equity Fund Return	-9.502 (0.000)	-9.590 (0.000)	-9.574 (0.000)	Series are not containing unit root
ABSL Front Line Fund Return	-9.999 (0.000)	-10.129 (0.000)	-10.093 (0.000)	Series are not containing unit root
HDFC Equity Fund Return	-9.682 (0.000)	-9.782 (0.000)	-9.751 (0.000)	Series are not containing unit root
HDFC Top 100 Fund Return	-10.093 (0.000)	-10.231 (0.000)	-10.194 (0.000)	Series are not containing unit root
ICICI Prudential Blue Chip Fund Return	-10.031 (0.000)	-10.314 (0.000)	-10.287 (0.000)	Series are not containing unit root
ICICI Mid Cap Fund Return	-8.718 (0.000)	-8.742 (0.000)	-8.727 (0.000)	Series are not containing unit root
Kotak Emerging Equity Fund Return	-8.915 (0.000)	-8.997 (0.000)	-9.007 (0.000)	Series are not containing unit root
Kotak Equity Opportunities Fund Return	-10.058 (0.000)	-10.174 (0.000)	-10.182 (0.000)	Series are not containing unit root
Reliance Vision fund Return	-11.329 (0.000)	-11.461 (0.000)	-11.548 (0.000)	Series are not containing unit root
Reliance Growth Fund Return	-9.617 (0.000)	-9.704 (0.000)	-9.679 (0.000)	Series are not containing unit root
SBI Blue Chip Fund Return	-9.689 (0.000)	-9.786 (0.000)	-9.760 (0.000)	Series are not containing unit root
SBI Magnum Multi Cap Fund Return	-9.671 (0.000)	-9.753 (0.000)	-9.757 (0.000)	Series are not containing unit root
UTI Mid Cap Fund Return	-9.212 (0.000)	-9.334 (0.000)	-9.301 (0.000)	Series are not containing unit root
UTI Equity Fund Return	-10.095(0.000)	10.095 (0.000)	-10.314 (0.000)	Series are not containing unit root

The table shown above indicates that the probability value of t statistics is found to be less than 5% level of significance in case of all the mutual funds and stock indices return series. The p value is found to be significant in case of all the three assumptions of ADF test. Hence it can be concluded that the monthly NAV return series and stock indices return series are free from the unit root problem and stationary in nature. Hence, the returns series of the selected mutual funds are fit for further econometric modeling. Thus, it can be concluded that the transformed series (first log differencing) which indicates the monthly returns of the series are stationary and fit for further econometric modeling.

Total risk, systematic risk and unsystematic risk

In the financial market, risk is the probability of using some or all of the investment value. The risk in holding a security

is generally associated with the probability that realized return would be less than the expected return. Total risk is comprised of systematic and unsystematic risk. Systematic risk can be defined as the risk inherent to the entire market or entire market segment. Systematic risk cannot be avoided through diversification; it is also known as non-diversifiable risk. It can be segregated into three parts namely a) Market risk .b) Interest rate risk .c) Purchasing power risk. Unsystematic risk belongs to the particular industry or a firm and it arises due to the unique circumstances of a specific security as opposed to the overall market. It is associated with random causes that can be eliminated through diversification and it is attributable to the firm specific events. It is also known as diversifiable risk.

$$\text{Total risk} = \text{Systematic risk} + \text{Unsystematic risk}$$

$$\sigma_p^2 = \beta^2 * \sigma_m^2 + \epsilon^2$$

Here the total risk associated with the mutual funds is estimated with the help of variance which is the term mentioned in the left-hand side of the above equation. The systematic risk is estimated with the help of $\beta^2 * \sigma_m^2$, which is first term in the RHS of the equation. The ϵ^2 is the residual risk known as the unsystematic risk of the series.

The beta is defined as the measure of systematic risk, it measures the sensitivity of the mutual fund scheme towards the market movement, in the above equation it is estimated with the help of following formulae

$$\beta_p = \frac{\text{Cov}(P_t, M_t)}{\sigma_m^2}$$

The results of the total risk, systematic risk and unsystematic risk estimated for the different mutual funds included in the study are shown below:

Table 4: Risk associated with selected funds

Name of the mutual fund	Total risk	Beta	Variance of the market	Systematic risk	Unsystematic risk
ABSL Equity Fund Return	40.196	0.985	36.650	36.100	4.096
ABSL Front Line Fund Return	33.698	0.926	36.650	33.929	Negligible
HDFC Equity Fund Return	43.428	1.026	36.650	37.602	5.826
HDFC Top 100 Fund Return	37.577	0.943	36.650	34.560	3.017
ICICI Prudential Blue Chip Fund Return	26.832	0.610	36.650	22.356	4.476
ICICI Mid Cap Fund Return	53.728	1.075	36.650	39.399	14.329
Kotak Emerging Equity Fund Return	43.824	0.962	36.650	35.273	8.551
Kotak Equity Opportunities Fund Return	36.482	0.957	36.650	35.075	1.407
Reliance Vision fund Return	86.490	1.035	36.650	37.932	48.558
Reliance Growth Fund Return	40.589	0.967	36.650	35.440	5.149
SBI Blue Chip Fund Return	33.408	0.921	36.650	33.754	-0.346
SBI Magnum Multi Cap Fund Return	34.692	0.930	36.650	34.085	0.607
UTI Mid Cap Fund Return	45.158	0.586	36.650	21.477	23.681
UTI Equity Fund Return	27.563	0.828	36.650	30.346	Negligible

Name of the mutual fund	Total risk	Systematic risk	Unsystematic risk
ABSL Equity Fund Return	100%	89.809%	10.21 %
ABSL Front Line Fund Return	100 %	101.121%	-----
HDFC Equity Fund Return	100%	86.584%	13.4%
HDFC Top 100 Fund Return	100%	91.971%	8.02%
ICICI Prudential Blue Chip Fund Return	100%	83.318%	16.68%
ICICI Mid Cap Fund Return	100%	73.330%	26.66%
Kotak Emerging Equity Fund Return	100%	80.487%	19.51%
Kotak Equity Opportunities Fund Return	100%	96.143%	3.85%
Reliance Vision fund Return	100%	43.857%	56.14%
Reliance Growth Fund Return	100%	87.314%	12.68%
SBI Blue Chip Fund Return	100%	101%	-----
SBI Magnum Multi Cap Fund Return	100%	98.25%	1.74%
UTI Mid Cap Fund Return	100%	47.559%	52.44%
UTI Equity Fund Return	100%	110.022%	-----

Conclusions and discussion

The present study observes that Mutual fund is an instrument for those investors who want to achieve gains without spending on extensive research and trading expense. We investigated the risk and return levels of various mutual funds by adopting methods of continuously compounded rate and found that all the funds performed better than BSE Sensex and Nifty 50. Line charts were represented to exhibit the growth performance. It is also observed that all these funds provided good returns in long term period than benchmark indices. Data analysis was carried through econometric models. Unit root tests (Augmented Dickey-Fuller test) were adopted to check the stationery nature of the series and then to convert into stationery one. Hence Mutual fund is an attempt towards maximising the return of the investor and minimising the different levels of risk being involved with the securities. (Prince and Bacon 2010) It will influence the investors to mobilize their savings into different mutual funds and moreover persuade them to invest in equity mutual funds which provide better returns rather than investing in stock market directly.

References

- Ang, J. S., & Lin, J. W. (2001). A fundamental approach to estimating economies of scale and scope of financial products: The case of mutual funds. *Review of Quantitative Finance and Accounting*, 16(3), 205-222.
- Annapoorna, M. S., & Gupta, P. K. (2013). A comparative analysis of returns of mutual fund schemes ranked 1 by CRISIL. *Tactful Management Research Journal*, 2(1), 1-6.
- Ashraf, S. H., & Sharma, D. (2014). Performance Evaluation of Indian Equity Mutual Funds against Established Benchmarks Index. *International Journal of Accounting Research*, 2, 1-7.
- Bahl, S., Rani M. 2012 "A comparative analysis of mutual fund schemes in India." *International Journal of Marketing, Financial Services & Management Research* 1 (7), 2012.
- Barua, S. K., & Varma, J. R. (1991). Mastershares: A Bonanza for Large Investors. *Vikalpa*, 16(1), 29-34.
- Chander, R. (2000). Performance appraisal of mutual funds in India. *Finance India*, 14(4), 1256-1261.
- Chitra, V., & Hemalatha, T. (2018). Risk & return analysis of performance of mutual fund schemes in India. *IJAR*, 4(1), 279-283.
- Choudhary, V., & Chawla, P. S. (2014). Performance Evaluation of Mutual Funds: A Study of Selected Diversified Equity Mutual Funds in India. In *International Conference on Business, Law and Corporate Social Responsibility (ICBLCSR'14)* Oct 1-2, 2014 Phuket (Thailand). doi:10.15242/icehm.ed1014025
- Dhanda, S. K., Batra, G. S., & Anjum, B. (2012). Performance evaluation of selected open ended mutual funds in India. *International Journal of Marketing, Financial Services & Management Research*, 1(1), 29-38.
- Duggimpudi, R, Abdou and Zaki M. (2010). An evaluation of equity diversified mutual funds : the case of the Indian market. *Investment Management and Financial Innovations*, 7(4). <http://usir.salford.ac.uk/13011/>
- Engle, R. (2002). Dynamic Conditional Correlation: A simple class of multivariate Generalized Autoregressive Conditional Heteroskedasticity models. *Journal of Business and Economic Statistics*, 20(3), 339-350.
- Elton, E., Gruber, M., Das, S. and Hlavka, M. (1993). Efficiency with Costly Information: a Reinterpretation of Evidence from Managed Portfolios, *Review of Financial Studies*, 1-23
- Engle, R. (2002). Dynamic Conditional Correlation: A simple class of multivariate Generalized Autoregressive Conditional Heteroskedasticity models. *Journal of Business and Economic Statistics*, 20(3), 339-350.
- Fama EF (1972) Components of Investment Performance. *Journal of Finance* 27, 551- 567.
- Friend, Irwin and Vickers, Douglas, (1965). Portfolio Selection and Investment Performance. *The Journal of Finance*, 20(3), 391-415.
- Gupta, A. (2001). Mutual funds in India: A study of investment management. *Finance India*, 15(2), 631-637.
- Gupta, O.P., and Sehgal S., (1998) Investment Performance of Mutual Funds: The Indian Experience, a paper presented at UTI-ICM Second Capital Market Conference.
- Friend, I., Brown, F. E., Herman, E. S., & Vickers, D. (1962). A study of mutual funds. US Government Printing Office, Washington, DC.
- Ikram, S. & Khan, A.Q. (2011). Testing strong form market efficiency of Indian capital market, Performance evaluation of mutual funds. *International journal of Business and Information Technology*, 1(2).

- Jain, M., Meena, P. L., & Mathur, T. N. (2012). Impact of Foreign Institutional Investment on stock Market with special reference to BSE A study of Last One Decade. *Asian Journal of research in banking and finance*, 2(4), 31-47.
- Jayadev, M. (1996). Mutual fund performance: An analysis of monthly returns. *Finance India*, 10(1), 73-84.
- Jensen, M. C. (1969). Risk, the pricing of capital assets, and the evaluation of investment portfolios. *The Journal of business*, 42(2), 167-247.
- Jensen, M. C. (2001). Value maximization, stakeholder theory, and the corporate objective function. *Journal of applied corporate finance*, 14(3), 8-21.
- Kalyan, N. B., & Gautami, S. (2018). A study on risk & return analysis of the selected mutual funds schemes in India. *International Journal of Research in Social Sciences*, 8(5), 212-221.
- Lo, A. W. (2001). Risk management for hedge funds: Introduction and overview. *Financial Analysts Journal*, 57(6), 16-33.
- Mansor, F., & Bhatti, M. I. (2011). Risk and return analysis on performance of the Islamic mutual funds: evidence from Malaysia. *Global Economy and Finance Journal*, 4(1), 19-31.
- Noulas, G., Papanastasion, J.A., and Lazaridis, J. (2005). Performance of mutual funds. *Managerial Finance*. 31 (2).
- Raza, S. A., Raza, S. A., & Zia, A. (2011). Equity mutual funds performance in Pakistan: risk & return analysis.
- Shano, M., Ganesh, P., & Mwaura, M. (2013). Performance of equity funds in Kenya over the period 2005-2009. In *JKUAT Annual Scientific Conference Proceedings*. 535-545.
- Nalini prava and tripathy (2005) . An empirical evaluation of market timing abilities of Indian fund managers on equity linked savings scheme. *Business review* . 6 (2).
- Nandhini R. and Rathnamani V. (2017). A Study on the Performance of Equity Mutual Funds (With special reference to equity large cap and mid cap mutual funds). *Journal of Business and Management*. 19(2), 67-72
- Panwar, Sharad & Madhumathi, R.(2006).Characteristics and Performance Evaluation of Selected Mutual Funds in India. *SSRN Electronic Journal*. 10.2139/ssrn.876402.
- Sharma, G. D., Mahendru, M., & Singh, S. (2013). Are the stock exchanges of emerging economies inter-linked: Evidence from BRICS. *Indian Journal of Finance*, 7(1).
- Sharpe, W. F. (1966). Mutual fund performance. *The Journal of business*, 39(1), 119-138. Treynor, J.L. (1966). Can mutual funds outguess the market. *Harvard Business Review*, 43(1), 131-136.
- Shruthi, M. P., & Manjunatha, T. Performance of Large Cap and Small Cap Funds in Indian Mutual Fund Schemes.
- Pandow, B. A. (2017). Growth and performance of Indian mutual funds industry. *Journal of Economic & Financial Studies*, 5(02), 26-38
- Pandow A.B. Butt K.A. (2017). Risk and Return Analysis of Mutual Fund Industry in India. *Journal of Banking and Financial Dynamics*, 1(1): 54-65.
- Poornima, S., & Swathiga, P. (2017). A study on relationship between risk and return analysis of selected stocks on NSE using capital asset pricing model. *International Journal of Applied Research*, 3(7), 375-378.
- Ramamurthy, B. M., & Reddy, S. (2005). Recent Trends in mutual fund industry. *SCMS Journal of Indian management*, 2(3), 69-76.
- Sinha, R. P. (2016). Benchmarking of Indian Sectoral Mutual Funds-A Non-Separable Undesirable Output Model. *International Journal of Financial Management*, 6(4).42-53
- Singh B.K (2012), A study on investors' attitude towards mutual funds as an investment option. *International Journal of Research in Management*, 2(2), 61-70
- Vasudevan, R. (2012). Investors' perceptions of mutual fund risks an empirical study. *TRANS Asian Journal of Marketing & Management Research (TAJMMR)*, 1(3and4), 33-42.
- Walia, K., Walia, R., & Jain, M. (2012). Impact of foreign institutional investment on stock market. *International journal of computing and corporate research*, 2(5), 1-15