A Study of Mutual Funds from Different Sectors in India

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Abstract

Savings constitute a major part of GDP in India. These savings flow into different investment avenues. People commit their funds in expectation of some future returns in terms of revenue or capital. The main hurdle in this process is the selection of the appropriate security which involves complete market and security analysis along with portfolio management. This becomes a difficult task for ordinary investors, given their busy life. This leads the investors to resort to indirect methods of investing, the most prominent and successful being the mutual funds which manage the portfolio on behalf of the investors. However, the selection of the correct mutual fund is an important task. The present study attempted to analyze and compare a few selected mutual funds to help the investors in fund selection.

Keywords: **investment, mutual funds, BSE SENSEX, UTI**

JEL Classification: G10, G11, G17, G23

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The Indian stock market now is more volatile than it ever was. The prices rise and fall every second. In this market scenario, it becomes difficult for an investor to choose the correct investment avenue so that there is no loss on the invested principal amount and apart from that, there are some positive returns. It becomes difficult for individual investors to analyze each and every security to make their portfolio. So, they tend to look for indirect investing methods. The most upcoming industry in this regard is the mutual fund industry. People just have to buy the units of these funds and the rest is done by the fund managers. They manage the portfolio of the investors on their behalf for a fee. Mutual funds are in the form of a trust (usually called an asset management company) that manages the pool of money collected from various investors for investment in various classes of assets to achieve certain financial goals. In return for such services, asset management companies charge small fees. Every mutual fund launches different schemes, each with a specific objective. Investors who share the same objectives invest in that particular scheme. Each mutual fund scheme is managed by a fund manager with the help of his/her team of professionals. One fund manager may be managing more than one scheme also. The mutual funds usually invest funds in bonds, equities, debentures, call money, and so forth depending on the objectives and terms of scheme floated by the mutual fund. There are mutual funds which even invest in gold or other asset classes.

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One of the main advantages of mutual funds is that small investors get a chance to invest in professionally managed and diversified portfolios, which would be difficult otherwise with a small amount of money. Despite great advantages, the full potential of the mutual fund industry has not been utilized. The probable reasons that can be cited include lack of awareness about these financial instruments among the masses. Apart from this, people don't know how to analyze the fund performance so as to make an apt choice of the funds. A professional help in this matter would allow making a wise investment decision.

To overcome this drawback of the investors, the present study presents a method of evaluating different mutual funds and advises investors about the most suitable investment avenues from the selected mutual funds. The main objective of the study is thus to compare the performance of different mutual funds in different sectors using the benchmark index and determine the most profitable mutual fund from the given sample and the most worthy sector from the chosen ones.

Random sampling is used and the sectors and companies were chosen based on past performances. The sample size is small, but indicative. Four sectors (pharma & health, FMCG, banking & finance, and technology) with four mutual fund companies each were taken (except for three in the technology sector). The study is based on secondary data. The scope of the study is limited to a period of 1 year (November 2013 to November 2014).

The net asset values of the mutual funds and the respective benchmark index were taken. The study aimed at evaluating the performance of mutual funds of each sector with special tools of Jensen's α, systematic risk β, total risk σ, and coefficient of determination R^2.

Review of Literature

CAPM and APT benchmarks were used by Lehmann and Modest (1987) to ascertain whether conventional measures of abnormal mutual fund performance were sensitive to be the chosen performance benchmark. They found statistically significant abnormal performance using all the benchmarks. However, they could not find an economic explanation to this phenomenon.

A framework was proposed by Pastor and Stambaugh (2002) for evaluation of mutual funds. It was shown that returns on non-benchmark passive assets helped to estimate the alpha more precisely for most funds. They concluded that optimal portfolios constructed from a large universe of equity funds could include actively managed funds even when managerial skill was precluded.

Simulated funds were used by Kothari and Warner (2001) to study measures of mutual fund performance and concluded that previously used performance measures had little ability to detect economically large magnitudes of abnormal performance of funds. Bharathi and Bharathi (2007) examined the performance of mutual funds using Sharpe Ratio, Treynor Ratio, and Jensen differential return measure. The results indicated a mixed performance of sample schemes during the study period. The returns of the funds during the period were positive and satisfactory.

In a study by Duggimpudi, Abdou, and Zaki (2010), performance of equity diversified mutual funds was evaluated in the Indian context. Total risk, systematic risk, and returns were analyzed using Treynor ratio, Sharpe ratio, and the Jensen's alpha. BSE SENSEX was used as the benchmark. A positive relation was found between risk and returns and the actual returns were found to be more than expected returns. In another study by Mehta and Shah (2012), preferences of mutual fund investors were analyzed and the performances of popular funds was evaluated. Findings revealed factors that influenced buying behavior of investors. The study aimed at helping the AMC's, brokers, distributors, and the potential investors.

Rate of return method, standard deviation, beta, Sharpe ratio, and Treynor ratio were used for analysis in a research by Dhanda, Batra, and Anjum (2012). They studied the risk-return relationship of open ended funds in terms of risk and return relationship. BSE-30 was used as the benchmark. The study found that out of all the chosen funds, only three schemes performed better than the benchmark. Bansal, Garg, and Saini (2012) examined

the performance of select mutual fund schemes. They compared the risk profile taking monthly liquidity, monthly returns, systematic & unsystematic risk and did complete fund analysis by using the Sharpe ratio and Treynor ratio. It was found that out of the various schemes, UTI Money Market Fund (Dividend) outperformed the rest, followed by the Birla Advantage and the Franklin India Blue-chip Fund (Dividend). F T India Monthly Income Plan (Growth) showed a negative value. Thus, it was concluded that most of the funds performed well and had the ability to forecast future security prices well enough to recover their research expenses, management fees and commission expenses.

The paper by Bansal and Kumar (2012) compared the returns of mutual funds with returns of equity shares of different sectors of Indian economy. Fast Moving Capital Goods, Information Technology and Power sectors were studied for this purpose. The analysis was made on the basis of mean return, intercept, beta, Sharpe ratio, Treynor ratio, and Jensen Alpha. UTI Money Market Fund and HDFC Liquid Fund showed best performance. Reliance Growth Fund and Morgan Stanley Growth Fund showed below-average performance. It was concluded that the investors of these sectors had not been rewarded well on their invested money during the study period. An analysis of the financial performance of selected equity large cap mutual fund schemes was done in their study by Rathnamani & Narayanasamy (2013) using Jensen's alpha, standard deviation, beta, R-squared and Sharpe ratio. Except Reliance vision, the rest five equity large cap funds performed well even when there was a fall in the CNX NIFTY in 2011.

Treynor ratio, Sharpe ratio and Jensen's alpha were used to compare the monthly returns of selected mutual funds with market returns (Lohana, 2013). The returns of most of the funds were found to be more than the market index returns. Reliance Banking Fund gave unsatisfactory results under all three measures. IDBI Fixed Maturity Fund and Kotak Gold Fund outperformed the market benchmark. Also, average monthly returns of public and private funds were found to be equal in all selected funds. In a different study, the performance of mutual funds was analyzed using their fund return, risk and performance ratios. It was observed that ICICI equity fund gave the highest returns among the selected funds. Birla sun life mutual fund had higher risk than ICICI (Zaheeruddin, Sivakumar, & Reddy, 2013).

Kumar (2013) studied the investor perception in Punjab along with performance study of Equity and Hybrid funds. Growth rates, percentages, Beta, Sharpe ratio, Treynor ratio, Jenson's alpha Chi-square and Kendall's Concordance Coefficient were used for analysis. Growth schemes were found to outperform balanced fund schemes. Most schemes outperformed the benchmark indices during 2003-2006 while underperformed during 2007 to 2011. It was also concluded that most of the investors were moderate risk takers and had gained satisfactory knowledge of mutual funds through friends and relatives.

Thirty two growth oriented mutual funds were taken for the study by Qamruzzaman (2014) who evaluated the performance on the basis of monthly returns and compared them to benchmark returns. For this purpose, risk adjusted performance measures of Treynor ratio, Sharpe ratio, and Jensen's alpha were used. It was found that the mutual funds showed positive monthly returns and upward trend in comparison to market return. Different risk return measures showed similar performance with exception of few mutual fund schemes. It was concluded that in terms of volatility, growth oriented mutual funds had under performed.

Apart from traditional measures, Data Envelopment Analysis (DEA) techniques and Pearson's correlation coefficient were used for analysis in a study of open-ended equity mutual funds of Thailand (Soongswang & Sanohdontree, 2011). The result showed that the top five funds managed by the Aberdeen, Siam Commercial Bank and Bangkok Bank AMCs outperformed the bottom five selected funds. Wolasmal aimed at finding fully diversified funds. For this eighty funds were selected. Treynor and Sharpe indices showed that out of the eighty selected funds, none of the mutual fund was fully diversified. Thus, none of the funds would land on Markowitiz's efficient portfolio curve. It was also found that the size of the fund did not affect its performance.

Sapar and Madava evaluated the bear market performance of Indian mutual funds using risk-return analysis, relative performance index, Treynor ratio, Sharpe ratio, Fama's measure and Jensen's measure. It was found that majority of the mutual fund schemes gave excess returns over expected returns. An evaluation of performance of

Table 1. Different Sectors and Mutual Funds Chosen for the Study

Pharma and healthcare sector	FMCG sector
SBI Pharma Fund - Direct(G)	SBI FMCG Fund(G)
SBI Pharma Fund - Direct(D)	SBI FMCG Fund- Direct Plan (D)
Reliance Pharma Fund-Direct Plan (G)	ICICI Prudential FMCG Fund (G)
UTI Pharma and Healthcare Fund (G)	ICICI Prudential FMCG Fund (D)
Banking and finance sector	**Technology sector**
Reliance Banking Fund (G)	Technology sector
UTI Banking Sector Fund (G)	Birla Sun Life New Millennium (G)
Religare Invesco Banking Fund - RP (G)	DSP - Black Rock Technology.Com -RP (G)
Birla Sun Life Banking and Financial Services Fund - RP (G)	

Indian mutual funds was done by Prajapati & Patel through risk-return analysis, relative performance index, Treynor ratio, Sharpe ratio, Fama's measure and Jensen's measure. The study showed that HDFC and Reliance mutual funds performed well as compared to the Sensex return. ICICI prudential and UTI Mutual fund had lower level of risk compared to HDFC and Reliance mutual funds. The funds were found to be less volatile than the benchmark Index. Results also revealed that the HDFC and Reliance mutual funds offered better return in comparison to ICICI Prudential, UTI, and Birla Sun Life Mutual funds for the same level of risk exposure.

Research Design

The study is based on secondary data. The scope of the study is kept limited to the time period of 1 year (November 2013 to November 2014). Four sectors of mutual fund industry have been selected namely: pharma and healthcare mutual funds, FMCG mutual funds, banking and finance mutual funds and technology mutual funds. Four mutual funds from each sector have been selected based on their past performances (three in technology sector) as listed in Table 1. The returns of all the funds were collected on 18th of November 2013, February 2014, May2014, August 2014 and November 2014. The date was decided according to the availability of data. The absolute returns thus collected were changed into performance percentages of each quarter. Also the corresponding values of Bombay stock exchange for all the quarters were collected and converted into percentages. Further analysis of data was done on these percentages.

Tools Used for Analysis

(1) Jensen's Alpha (Return) : Alpha measures the performance of a portfolio. It is based on differential returns and is also known as Jensen's Index. It measures the difference between the actual return of a portfolio and required return of a portfolio in view of the risk of the portfolio. It is based on the CAPM model. If the value is positive, the portfolio has outperformed the market, whereas a negative value means that the portfolio has underperformed the market. If the value is zero, it indicates that the portfolio has just performed what it is expected to.

(2) Beta (Systematic Risk) : Beta measures the risk of one security or portfolio in relation to the market risk. The market risk is represented by variation in the benchmark market index e.g. SENSEX. It is denoted by the symbol β. Shares whose beta factor is more than 1 are considered more risky than the market and the shares whose beta is less than 1 are considered less risky than the market.

(3) Standard Deviation (Total Risk) : A reliable and convenient way to quantify the total risk is to measure the degree of spread of possible returns around the expected return. This is known as the standard deviation of possible returns. It is denoted by the symbol σ. It combines both the systematic and the unsystematic risk. It essentially denotes a fund's volatility and the tendency of the returns to rise or fall drastically in a short period. A volatile security is considered risky because its performance may change quickly in either direction at any moment of time. This risk is calculated by measuring the degree to which the fund fluctuates in relation to its mean return.

(4) *R* squared (R^2) : It denotes the square of correlation value also called as coefficient of determination. It denotes how close the data is to the benchmark index. Higher the value closer is the data to the benchmark index and less riskier is the respective fund.

Objectives of the Study

The main objectives of this study are:

(1) To evaluate the performance of mutual funds of each sector with special tools of α, β, σ, and R^2.

(2) To compare the performance of mutual funds to the benchmark index (here BSE SENSEX).

(3) To bring out which fund is performing better than others in their respective sectors.

(4) To compare the different sectors and rank them based on their performance.

Rationale and Scope of the Study

There are different mutual funds in different sectors and people are either confused or are reluctant to invest in them. The present study aims to analyze the different mutual funds within different sectors to provide a clear picture of their returns and the risks involved. Different sectors are chosen which are growing rapidly and are indicative of the trend of the mutual fund industry. The study reveals the best funds in different sectors and ranks different sectors based on their performance.

Analysis and Results

The Y-axis in all the graphs represents returns(%) and the X-axis represents the time period in quarters i.e. three months.

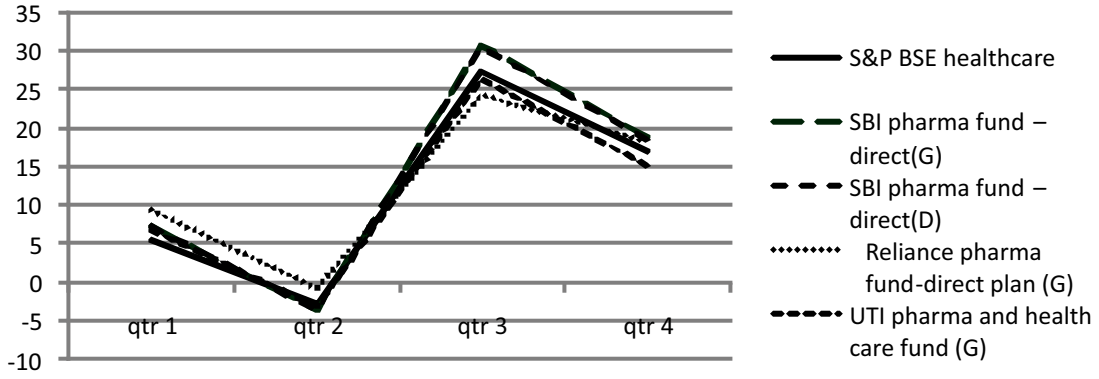
(1) Pharma and Healthcare : We can see clearly from Table 2 that alpha is highest for Reliance Pharma Fund-Direct Plan (G) and lowest for SBI Pharma Fund-Direct (D), therefore the returns for the former are the maximum and lowest for the latter.

Table 2. Comparative Analysis of Various Funds in the Pharma and Healthcare Sector

MutualFund	A	B	σ	R^2
SBI Pharma Fund -Direct(G)	0.164	1.12	12.87	0.9983
SBI Pharma Fund -Direct(D)	0.082	1.11	12.78	0.9981
Reliance Pharma Fund-Direct Plan (G)	3.134	0.82	9.48	0.9766
UTI Pharma and Healthcare Fund (G)	0.326	0.93	10.77	0.9931

Source: secondary data; (moneycontrol.com, 2014)

Figure 1. Graphical Representation of Percentage Returns of Various Mutual Funds in the Pharma and Healthcare Sector



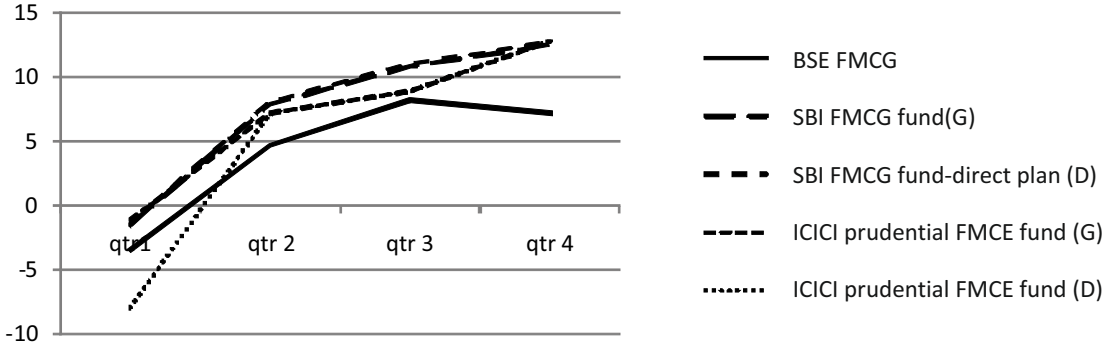
Source: Secondary Data and moneycontrol.com (2014)

Table 3. Comparative Analysis of Various Funds in the FMCG Sector

MutualFund	A	B	σ	R^2
SBI FMCG Fund(G)	2.54	1.17	5.41	0.9644
SBI FMCG Fund-Direct Plan (D)	2.67	1.18	5.45	0.9650
ICICI Prudential FMCG Fund (G)	2.55	1.05	5.07	0.8804
ICICI Prudential FMCG Fund (D)	-1.69	1.66	7.86	0.9308

Source: Secondary Data and moneycontrol.com (2014)

Figure 2. Graphical Representation of Percentage Returns of Various Mutual Funds in the FMCG Sector



Source: Secondary Data and moneycontrol.com (2014)

SBI Pharma Fund-Direct (G) has the highest beta and hence is riskier than the market. The Reliance Pharma Fund-Direct plan (G) has the lowest beta and hence, is the least risky. The standard deviation of SBI Pharma Fund-Direct (G) is the highest and hence, it has the highest volatility of performance. The Reliance Pharma Fund-Direct Plan (G) has the lowest volatility. It is the least risky.

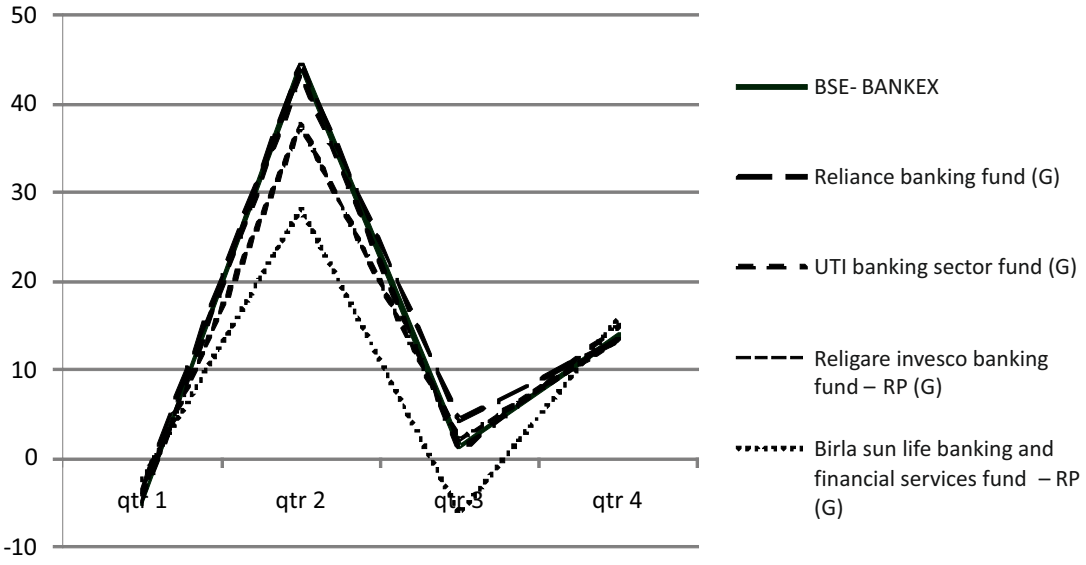
The coefficient of determination of SBI Pharma Fund-Direct (G) is the highest and hence its returns are more or less consistent with the benchmark index. Whereas, UTI Pharma and Healthcare Fund-(G) is the least related. It can be seen from Figure 1 that the pharma & healthcare sector on the whole showed increased returns during May 2014 to August 2014 and later the returns started decreasing. It can also be seen that the fund returns have moved in sync with the benchmark index.

Table 4. Comparative Analysis of Various Funds in the Banking and Finance Sectors

MutualFund	A	B	σ	R^2
Reliance Banking Fund (G)	1.53	0.96	18.21	0.9965
UTI Banking Sector Fund (G)	0.243	0.98	18.7	0.9987
Religare Invesco Banking Fund - RP(G)	1.0005	0.83	15.87	0.9986
Birla Sun Life Banking and Financial Services Fund - RP (G)	-0.568	0.69	13.93	0.8780

Source: Secondary Data and moneycontrol.com (2014)

Figure 3. Graphical Representation of Percentage Returns of Various Mutual Funds in the Banking and Finance Sectors



Source: Secondary Data and moneycontrol.com (2014)

(2) FMCG : It can be seen from Table 3 that alpha values for SBI FMCG Fund(G), SBI FMCG Fund-Direct Plan (D) and ICICI Prudential FMCG Fund (G) are comparable, hence have more or less equal returns with SBI FMCG Fund-Direct Plan (D) as the leading fund. The ICICI prudential FMCG Fund (D) on the other hand has negative alpha and hence it performs lower than the market. Beta is highest for ICICI Prudential FMCG Fund (D) and hence, is the riskiest. The least risk is shown by ICICI Prudential FMCG Fund (G) with the least beta. The standard deviation or market volatility is the highest for ICICI Prudential FMCG Fund (D) with a σ of 7.86 compared to ICICI Prudential FMCG Fund (G) which has the lowest market volatility within the sector. The coefficient of determination is the highest for SBI FMCG Fund-Direct (D) and hence, is more or less consistent with the SENSEX readings and shows close fall and rise with it. The least correlation is shown by ICICI Prudential FMCG Fund (G). The Figure 2 shows a constant increase in returns for all the chosen funds in the FMCG sector. The little downward shift in the benchmark can be attributed to the performance of other funds that have not been included in our study.

(3) Banking and Finance : The Table 4 shows that Reliance Banking Fund (G) has the highest alpha and hence the highest returns. The alpha value of Religare Invesco Banking Fund – RP (G) is 1, indicating that this fund has performed as expected. Birla sun life banking and financial services fund – RP (G) has a negative alpha and hence has underperformed the market.

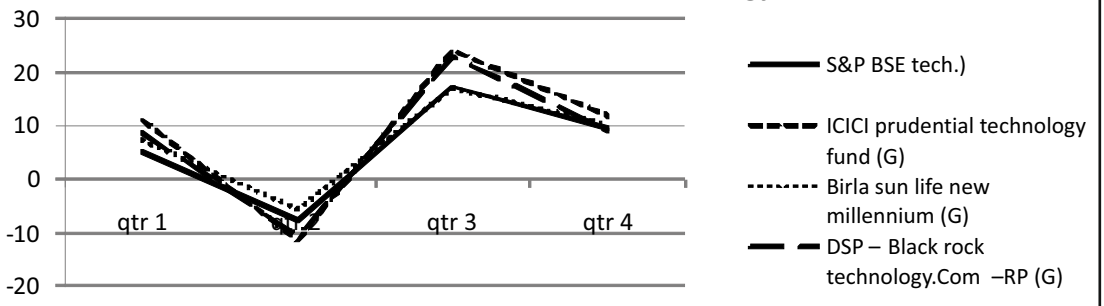
Beta is the least for Birla Sun Life Banking and Financial Services fund-RP(G) and hence, is the least risky

Table 5. Comparative Analysis of Various Funds in the Technology Sector

MutualFund	A	B	σ	R^2
ICICI Prudential Technology Fund (G)	0.465	1.4	12.86	0.9751
Birla Sun Life New Millennium (G)	1.767	0.91	8.21	0.9964
DSP-Black Rock Technology.Com-RP(G)	-0.283	1.3	11.93	0.9769

Source: Secondary Data and moneycontrol.com (2014)

Figure 4. Graphical Representation of Percentage Returns of Various Mutual Funds in the Technology Sector



Source: Secondary Data and moneycontrol.com (2014)

while UTI Banking Sector Fund (G) has the highest beta and hence, the highest risk. The total risk or the standard deviation is the highest for Reliance Banking Fund (G) and so, it is most volatile while Birla Sun Life Banking and Financial Services Fund-RP(G) has the least volatility. *R* squared value of UTI Banking Sector Fund (G) is the highest and hence, it shows the highest correlation with the SENSEX. Its rise and fall goes with the market. While the case of Birla Sun Life Banking and Financial Services Fund-RP(G) is the opposite.

The Figure 3 shows that all the fund returns increased during the second quarter only to decline towards the third quarter and then rise up again in the fourth quarter. It can be seen that the funds have moved in sync with the benchmark index.

(4) Technology : The Table 5 shows that Alpha of Birla Sun Life New Millennium (G) is the highest indicating that it is the leader in returns in the group. DSP – Black Rock Technology.Com–RP (G) has negative alpha value indicating that it has underperformed the market.

The beta of Birla Sunlife New Millennium (G) is the least showing the least risk and ICICI Prudential Technology Fund (G) has the highest risk. The standard deviation of ICICI Prudential Technology Fund (G) is the highest and hence is the most volatile compared to Birla Sun Life New Millennium (G) which is the least volatile. The coefficient of determination of Birla Sun Life New Millennium (G) is the highest showing closeness to the market returns. The correlation is the least for ICICI Prudential Technology Fund (G). The Figure 4 shows that the second quarter saw a decrease of returns and returns increased during the third quarter i.e. during May 2014 to August 2014. Towards the end of quarter 4, the returns had declined a little. It can be seen that the fund returns have moved in sync with the benchmark index.

(5) Inter Sector Analysis : From Table 6 it can be seen that pharma and healthcare sector has the best returns for the lowest level of risk and highest correlation factor, followed by FMCG, technology and banking & finance sectors.

Table 6. Comparison of Performance of Various Sectors

MutualFund	A	B	σ	R^2
Pharma and healthcare	0.9265	0.995	11.475	0.991525
FMCG	1.5175	1.265	5.95	0.93515
Banking and finance	0.5514	0.865	16.678	0.96795
Technology	0.65	1.2	11	0.9828

Conclusion and Implications

It can be concluded that for pharma and health sector (Table 2), a risk averse investor may invest in Reliance Pharma Fund-Direct Plan (G) because it has less risk, highest returns and comparatively decent correlation. A risk taker may go for SBI Pharma Fund-Direct (D) as it gives the lowest returns.

For the FMCG sector (Table 3), it can be concluded that a risk averse investor may go for ICICI Prudential FMCG Fund (G) which has comparatively low risk and volatility and highest returns following the market trend. A risk taker may go for ICICI Prudential FMCG Fund (D) as it has the highest risk and lowest returns which are even less than the market returns.

For the banking and finance sector (Table 4), it can be concluded that a risk averse investor may invest in Religare Invesco Banking Fund-RP (G) as it is highly correlated to the benchmark index and has less risk. It has returns comparable to the market. A risk taker may go for Birla Sun Life Banking and Financial Services Funds-RP (G) as its correlation is less and returns are negative as compared to the market.

For the technology sector (Table 5), it can be concluded that a risk averse investor may invest in Birla Sun Life New Millennium (G) as it has the highest returns, lowest risk and an excellent correlation to the market. A risk taker on the other hand may invest in DSP – Black Rock Technology.Com–RP (G) as it shows returns lower than expected, has highest risk and less correlation to the market. From the Table 5 of inter-sector analysis, it can be seen that Pharma and healthcare sector has the best returns for the lowest level of risk and highest correlation factor, followed by FMCG, technology and banking and finance.

The mathematical results above show what people think of a particular security, how they calculate and select investment areas and how they rate the respective portfolios. Every person has certain criteria and motive for investing which governs their decisions. Different people show different confidence in different schemes based on the very characteristics of the said scheme like the lock in period, the constituent securities etc. Our results highlight the superior performance of pharma and healthcare sector , the probable cause of which is that people think this sector has great potential as the world is increasingly facing deadlier forms of diseases and the research in this sector for better medicines and equipments needs to be expanded. If a disease like Dengue or Thalassemia can get worse and deadly day by day, it is necessary that research is funded for a better cause. A more rational reason is that people know that this sector will never fail as diseases will never get eliminated from this world. There will always be improvement in medical science and medicines will keep on selling, irrespective of the cost of the medicines and medical instruments. There will always be constant competition in this sector for development of better cure. Thus, it is presumed to be an ever flourishing sector.

The possible reasons for the good performance of one sector or funds over the other can be understood by knowing the reasons for stock price fluctuations. The change in Stock prices is a result of market forces i.e. supply and demand. Prices shoot up if more people want to buy a stock (demand) than sell it (supply). Conversely, if more people want to sell, there would be greater supply than demand, and the prices would fall. The preference of an investor for a particular stock depends on positive and negative news about the company. Also investors have their own ideas and strategies. The principal theory is that the price movement of a stock governs the investors' judgement of a company's worth. Theoretically, earnings affect investors' valuation of a

company, and earnings are affected by political developments, economic policies, policy of nationalization, monopoly, stock exchange, bank rate, inflation, deflation etc. It is the sentiments, attitudes and expectations of investors that ultimately affect stock prices.

The findings above are comparable with the findings of Bansal and Kumar (2012), and can be used for studying the trend of the respective sectors, which can be used to infer the possible future of one's investment in them. It is true that no one can predict the market, but some inference about the ongoing trend and possibilities of trend reversal can be drawn from such studies. It can thus help investors in their decision making process. Also, the results can be used by different mutual fund companies to reconstruct their portfolios to meet the changing demands of investors and to improve the market performance of funds.

From the above analysis and conclusion, we confirm that all our objectives have been verified. The intra sector performance has been checked with respect to each other and with respect to the benchmark market index i.e. BSE SENSEX and the best performers have been recognized by using various financial tools.

Limitations of the Study and Scope for Future Research

The present study has been conducted with only four sectors and few mutual funds in each sector. The selection of sectors was based on convenient sampling and the top ranking mutual funds were taken in each sector based on ratings. Though the sample was small, yet it is indicative of the current trend of the mutual fund industry. The readings have been taken quarterly. The tools used for analysis have been selective and excluded some other tools like Sharpe ratio, Treynor ratio and Fama's ratio which could be used in future researches. Nevertheless, the research is important because it has set the grounds and standards for future researchers. Studies on sector wise comparison of mutual funds have been few and therefore, hold a vast scope for exploration.

Future studies can be conducted for a longer duration on a larger sample comprising other sectors and larger number of mutual funds from all the chosen sectors. The time interval taken between any two consecutive readings can also be decreased to get more accurate results. Some other tools of analysis can also be used for finer results. The above results can be used for helping investors in their decision-making process. Also the results can be used by different mutual fund companies to reconstruct their portfolios to meet the changing demands of the investors and market performance.

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