PERFORMANCE EVALUATION OF SELECTED INDIAN EQUITY DIVERSIFIED MUTUAL FUND SCHEMES: AN EMPIRICAL STUDY

Mr. Ashok Bantwa, Mr. Krunal Bhuva

ABSTRACT

This study has been carried out to evaluate the performance of selected 20 equity diversified schemes during the study period of June 2007 to May 2012. An attempt has been made to evaluate the fund's performance, level of diversification and manager's ability to pick the undervalued stocks. The study revealed that except one all the sampled schemes have performed better than market. . Risk adjusted performance in terms of Sharpe and Treynor ratio showed that 55% of the fund schemes bear positive values. The findings also revealed that majority of the schemes were adequately diversified. Negative correlation between level of diversification, measured by R2 and unique risk proved that, fund managers remained successful in reducing unique risk through better diversification. The study also revealed that about 60% of the schemes were able to beat the market with help of better stock selection skill of fund managers. Overall, ING Dividend Yield Fund, Tata Dividend Yield Fund, UTI MNC Fund, Quantum Long-Term Equity Fund, Canara Robeco Equity Diversified, HDFC Growth Fund, Franklin India Prima Plus Fund and Tata Pure Equity Fund are among the best performing funds among the sampled schemes, in terms of all the different performance evaluation measures.

Keywords: Mutual Funds, Performance Evaluation, Systematic Risk, Unsystematic Risk, Portfolio Return.

I. INTRODUCTION

Because of increased importance of mutual fund as an investment avenue in recent years, the performance evaluation of mutual funds in India has received greater attention from both practitioners and academicians. The considerations underlying the performance evaluation of mutual funds is a matter of concern to investors, fund managers and researchers alike. Such evaluation plays a vital role of aiding investors as well as portfolio managers in making further investment decisions. It is generally believed that professional fund managers are better equipped in terms of access to information, processing skills and hence are expected to generate better returns on portfolios managed by them. In a country like India with less matured capital market, high volatility in equity market and low level of awareness among investors a question mark is put on the reliability of mutual funds, hence it is an important topic to be researched.

In this backdrop, the present research paper is devoted to measure the risk adjusted performance of selected equity diversified schemes in India. An attempt has also been made to study the level of diversification and return on the fund schemes. Since the fund managers is considered as better informed person and one who possesses professional acumen, his stock selection ability has been tested by applying popular measures. The rest of the paper is organized as follow: A brief introduction is followed by a review of theoretical and empirical literature, and a discussion of methodology, concepts and database used in the study. Subsequently results derived and findings are discussed at length and finally conclusion is offered.

II. LITERATURE REVIEW

This section covers review of literature from some of the important research papers, studies and articles as published by different authors. A large number of studies on the growth and financial performance of mutual funds have been carried out during the past, in the developed and developing countries. Brief reviews of the following research works reveal the wealth of contributions towards the performance evaluation of mutual fund, market timing and stock selection abilities of fund managers.

Friend, et al., (1962) made an extensive and systematic study of 152 mutual funds found that mutual fund schemes earned an average annual return of 12.4 percent, while their composite benchmark earned a return of 12.6 percent. Their alpha was negative with 20 basis points. Overall results did not suggest widespread inefficiency in the industry. Comparison of fund returns with turnover and expense categories did not reveal a strong relationship. Friend et. al, "A Study of Mutual Funds" U.S. Securities and Exchange Commission, USA, (1962).

Irwin, Brown, FE (1965) analyzed issues relating to investment policy, portfolio turnover rate, performance of mutual funds and its impact on the stock markets. The schoolwork identified that mutual funds had a significant impact on the price movement in the stock market. The cram concludes that, on an average, funds did not perform better than the composite markets and there was no persistent relationship between portfolio turnover and fund performance.

Treynor (1965) used 'characteristic line' for relating expected rate of return of a fund to the rate of return of a suitable market average. He coined a fund performance measure taking investment risk into account. Further, to deal with

a portfolio, 'portfolio-possibility line' was used to relate expected return to the portfolio owner's risk preference.

The most prominent study by Sharpe, William F (1966) developed a composite measure of return and risk. He evaluated 34 open-end mutual funds for the period 1944-63. Reward to variability ratio for each scheme was significantly less than DJIA and ranged from 0.43 to 0.78. Expense ratio was inversely related with the fund performance, as correlation coefficient was 0.0505. The results depicted that good performance was associated with low expense ratio and not with the size. Sample schemes showed consistency in risk measure.

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

Jensen (1968) developed a composite portfolio evaluation technique concerning risk-adjusted returns. He evaluated the ability of 115 fund managers in selecting securities during the period 1945-66. Analysis of net returns indicated that, 39 funds had above average returns, while 76 funds yielded abnormally poor returns. Using gross returns, 48 funds showed above average results and 67 funds below average results. Jensen concluded that, there was very little evidence that funds were able to perform significantly better than expected as fund managers were not able to forecast securities price movements.

Fama (1972) developed methods to distinguish observed return due to the ability to pick up the best securities at a given level of risk from that of predictions of price movements in the market. He introduced a multi-period model allowing evaluation on a period-by-period and on a cumulative basis. He branded that, return on a portfolio constitutes of return for security selection and return for bearing risk. His contributions combined the concepts from modern theories of portfolio selection and capital market equilibrium with more traditional concepts of good portfolio management.

Smith and Tito (1969) examined the inter-relationships between the three widely used composite measures of investment performance and suggested a fourth alternative, identifying some aspects of differentiation in the process.

While ranking the funds on the basis of ex-post performance, alternative measures produced little differences. However, conclusions differed widely when performance were compared with the market. In view of this, they suggested modified Jensen's measure based on estimating equation and slope coefficient.

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

Shukla and Singh (1994) attempted to identify whether portfolio manager's professional education brought out superior performance. They found that equity mutual funds managed by professionally qualified managers were riskier but better diversified than the others. Though the performance differences were not statistically significant, the three professionally qualified fund managers reviewed outperformed others.

The study by Shome (1994) based on growth schemes examined the performance of the mutual fund industry between April 1993 to March 1994 with BSE SENSEX as market surrogate. The study revealed that, in the case of 10 schemes, the average rate of return on mutual funds were marginally lower than the market return while the standard deviation was higher than the market. The analysis also provided that, performance of a fund was not closely associated with its size.

Yadav R A and Mishra, Biswadeep (1996) evaluated 14 close end schemes over the period of April 1992 to March 1995 with BSE National Index as benchmark. Their analysis indicated that, 57 percent of sample schemes had a mean return higher than that of the market, higher Sharpe Index and lower Treynor index. Schemes performed well in terms of diversification and total variability of returns but failed to provide adequate risk-premium per unit of systematic risk. 57 percent had positive alpha signifying superior performance in terms of timing ability of fund managers. Fund managers of growth schemes adopted a conservative investment policy and maintained a low portfolio beta to restrict losses in a rapidly falling stock market.

Gupta and Sehgal (1998) evaluated performance of 80 mutual fund schemes over four years (1992-96). The study tested the proposition relating to fund diversification, consistency of performance, parameter of performance and risk-return relationship. The study noticed the existence of inadequate portfolio diversification and consistency in performance among the sample schemes.

Ramesh Chander (2000) examined 34 mutual fund schemes with reference to the three fund characteristics with 91-days treasury bills rated as risk-free investment from January 1994 to December 1997. Returns based on NAV of many sample schemes were superior and highly volatile compared to BSE SENSEX. Open-end schemes outperformed close-end schemes in term of return. Income funds outsmarted growth and balanced funds. Banks and UTI sponsored schemes performed fairly well in relation to sponsorship. Average annual return of sample schemes was 7.34 percent due to diversification and 4.1 percent due to stock selectivity. The study revealed the poor market timing ability of mutual fund investment. The researcher also identified that, 12 factors explained majority of total variance in portfolio management practices.

Shah Ajay and Thomas Susan (1994) studied the performance of 11 mutual fund schemes on the basis of market prices. Weekly returns computed for these schemes since their launch of the scheme to April 1994 were evaluated using Jensen and Sharpe measures. They concluded that, except UTI UGS 2000, none of the sample schemes earned superior returns than the market due to very high risk and inadequate diversification.

Jaydev (1996) studied the performance of UTI Mastergain 1991 and SBI Magnum Express from 1992-94 with 13 percent return offered by Post Office Monthly Income Deposits as risk-free return. Mastergain earned an average return of 2.89 percent as against market earnings of 2.84 percent. Volatility of Magnum Express was high compared to Mastergain. Master gain had a superior performance over its benchmark (Economic Times Ordinary Share Price Index) by taking greater risk than the market. Mastergain indicated lesser degree of diversification of the portfolio with lower R2 value and very high unique risk. Magnum Express portfolio was well diversified with higher R2 value along with lower unique risk and total risk. Both the funds did not earn superior returns because of lack of selectivity on the part of the fund managers indicating that, the funds did not offer the advantages of professionalism to the investors.

Gupta (1974) evaluated the performance of mutual fund industry for the period 1962-71 using Sharpe, Treynor, and Jensen models. All the funds covered under

the study outperformed the market irrespective of the choice of market index. The results indicated that all the three models provided identical results. All the mutual fund subgroups outperformed the market using DJIA while income and balanced groups underperformed S&P 500. Return per unit of risk varied with the level of volatility assumed and he concluded that, funds with higher volatility exhibited superior performance.

Gupta Amitabh (2001) evaluated the performance of 73 selected schemes with different investment objectives, both from the public and private sector using Market Index and Fundex. NAV of both close-end and open-end schemes from April 1994 to March 1999 were tested. The sample schemes were not adequately diversified, risk and return of schemes were not in conformity with their objectives, and there was no evidence of market timing abilities of mutual fund industry in India.

Batra and Bhatia (1992) appreciated the performance of various funds in terms of return and funds mobilized. UTI, LIC and SBI Mutual Fund are in the capital market for many years declaring dividends ranging from 11 percent to 16 percent. The performance of Canbank Mutual Fund, Indian Bank Mutual Fund and PNB Mutual Fund were highly commendable. The performance of many schemes was equally good compared to industrial securities.

Tripathy, Nalini Prava (1996) identified that the Indian capital market expanded tremendously as a result of economic reforms, globalization and privatization. Household sector accounted for about 80 percent of country's savings and only about one-third of such savings were available for the corporate sector. The study suggested that, mutual funds should build investors' confidence through schemes meeting the diversified needs of investors, speedy disposal of information, improved transparency in operation, better customer service and assured benefits of professionalism.

Singh, Jaspal and Subhash Chander (2003) identified that past record and growth prospects influenced the choice of scheme. Investors in mutual funds expected repurchase facility, prompt service and adequate information. Return, portfolio selection and NAV were important criteria's for mutual fund appraisal. In this paper ANOVA has been applied and results were indicated that, occupational status; age had insignificant influence on the choice of scheme. Salaried and retired categories had priority for past record and safety in their mutual fund investment decisions.

Muthappan P K and Damodharan E (2006) evaluated 40 schemes for the period April 1995 to March 2000. The study identified that majority of the schemes earned returns higher than the market but lower than 91 days Treasury bill rate. The average risk of the schemes was higher than the market. 15 schemes had an above average monthly return. Growth schemes earned average monthly return. The risk and return of the schemes were not always in conformity with their stated investment objectives. The sample schemes were not adequately diversified, as the average unique risk was 7.45 percent with an average diversification of 35.01 percent. 23 schemes outperformed both in terms of total risk and systematic risk. 19 schemes with positive alpha values indicated superior performance. The study concludes that, the Indian Mutual Funds were not properly diversified.

R. Shanmugham and Zabiulla (2009) examined the stock selectivity strategies of selected equity mutual fund managers using conditional and unconditional measures over the period April 2006 to December 2009. The average daily returns were positive for all the schemes under consideration. Using traditional Jensen measure, out of 35 schemes alpha values of 22 schemes were positive, thereby showing superior performance. Only two schemes have positive and statistically significant alphas. It supports that the fund manager of these schemes were able to forecast stock price movements and were successful in identifying undervalued stocks in their portfolio. The stock selectivity abilities of equity fund managers have improved from two schemes to nine schemes after incorporating two market information variables. It can be inferred that these fund managers have been able to forecast the price movements and were successful in identifying individual stocks in their portfolio holdings that seem to promise superior returns.

III. NEED AND IMPORTANCE OF STUDY

Mutual Funds industry has grown up by leaps & bounds, particularly during the last 2 decades of the 20th century. Moreover the entry of private mutual fund (since 1993) has injected a sense of competition and the Industry has been witnessing a structural transformation from a public sector monopoly to monopolistic Industry. A proper evaluation measure will remove confusion and help small investors to decide about the level of investment in various mutual fund schemes, so as to maximize the returns.

Further the growing competition in the market forces the fund managers to work hard to satisfy investors & management. Therefore regular performance evaluation of mutual funds is essential for investors and fund managers also. In

this backdrop, the present research paper is devoted to measure the risk adjusted performance of selected equity diversified schemes in India. An attempt has also been made to study the level of diversification and return on the fund schemes. Since the fund managers is considered as better informed person and one who possesses professional acumen, his stock selection ability has been tested by applying popular measures.

IV. METHODOLOGY

Traditionally, it was a tendency to overlook the risk involved in equity diversified mutual funds that is one of the important elements in the measurement of the performance of mutual fund schemes. In financial terms risk is defined as variability in expected return from investment. Following tools and techniques have been used to measure the performance of various equity diversified mutual funds.

A. Sharpe Ratio

In 1966, *William Forsyth Sharpe* developed what is now known as the Sharpe ratio. Sharpe originally called it the "reward-to-variability" ratio before it began being called the Sharpe ratio by later academics and financial operators. The Sharpe ratio is used to characterize how well the return of an asset compensates the investor for the risk taken. Mathematically, the Sharpe ratio is the returns generated over the risk-free rate, per unit of risk. It is calculated by subtracting the risk-free rate of return from the rate of return for an investment and dividing the result by the investment's standard deviation of its return. The Sharpe ratio is a single number which represents both the risk, and return inherent in a fund. Therefore the ratio looks at both, return and risk and delivers a single measure that is proportional to the risk adjusted return. Higher Sharpe ratio indicates better risk adjusted performance of the fund. If the Sharpe ratio is negative, it indicates that the risk free asset would be a better option than the analyzed fund scheme. Symbolically;

$$S_p = \frac{R_p - R_f}{\sigma_p}$$

Where S_p is the Sharpe ratio for the portfolio; R_p is average return on portfolio; R_f represent the average return on risk free assets; σ_p is the standard deviation of the returns of the portfolio, that measures the total risk of investment. Similarly, such measures can be calculated for the benchmark market returns in the following manner;

$$S_p = \frac{R_m - R_f}{\sigma_m}$$

Where, R_m measures average market return and σ_m is the standard deviation of benchmark market return.

B. Treynor's Measure

Developed by Jack Treynor, this performance measure evaluates funds on the basis of Treynor's Index. This Index is a ratio of return generated by the fund over and above risk free rate of return (generally taken to be the return on securities backed by the government, as there is no credit risk associated), during a given period and systematic risk associated with it (beta). While a high and positive Treynor's Index shows a superior risk-adjusted performance of a fund, a low and negative Treynor's Index is an indication of unfavorable performance. It is similar to Sharpe ratio with the difference being that the Treynor ratio (T_P) uses beta (β) as a measure of volatility. So Treynor's measures takes into consideration the systematic risk of the portfolio. Symbolically;

$$T_p = \frac{R_p - R_f}{\beta_p}$$

C. Jensen's Alpha Measure

This measure was developed by Michael Jensen in 1968 an is referred to as the differential return method. This measure involves evaluation of the returns that the fund has generated vs. the returns actually expected out of the fund given the level of its systematic risk. The surplus between the two returns is called Alpha, which measures the performance of a fund compared with the actual returns over the period. Hence alpha is used to determine whether fund manager through his stock selection ability has been able to beat the market. A positive value of Jensen's Alpha implies a fund manager has the ability to beat the market with his stock picking skills. The higher the value for the fund means better the performance of it. For a retail investor the alpha value is important because it measures the excess returns a fund generates in relation to the returns generated by its benchmark. Symbolically;

$$\alpha_p = R_p - \left[R_f + \beta_p (R_m - R_f)\right]$$

Where α_p is Jensen's Alpha; Rp is average return of the portfolio; R_f is the average return of the risk free proxy; R_m is the average return of the benchmark proxy; and β_p is the beta of the portfolio. Limitation of this model is that it considers only systematic risk associated with the fund.

D. Fama's Selectivity Model

Eugene Fama in 1972 proposed an extension of Jensen model. This model compares the performance, measured in terms of return of a fund with the required return commensurate with the total risk associated with it. The difference between two is taken as a measure of performance of fund and is called selectivity. The net selectivity represents the stock selection skill of the fund manager as it is the excess return over and above the return required to compensate for the total risk taken by the fund manager. Higher value of which indicates that fund manager has earned returns well above the return required to commensurate with the level of risk taken by him. Symbolically;

$$\text{Net Selectivity} = (R_p - R_f) - \frac{\sigma_p}{\sigma_m}(R_m - R_f)$$

A positive high value indicates that the fund has achieved superior return and investors are benefited out of the selectivity exercised by the fund manager.

E. Diversification

One of the important advantages of mutual fund is that a small investor can enjoy the benefits of diversification of portfolio. Further, well diversified portfolio reduces the risk of the portfolio. Diversification can be measured with the help of coefficient of determination (R^2). This can be obtained by regressing the portfolio's additional return ($R_p - R_f$) on market's additional return ($R_m - R_f$). A high value indicates greater diversification of funds and vice versa.

F. Systematic Risk (Beta)

Beta, also known as the "beta coefficient," is a measure of the volatility, or systematic risk, of a security or a portfolio in comparison to the market as a whole. A beta of 1.0 indicates that the investment's price will move in lock-step with the market. A beta of less than 1.0 indicates that the investment will be less volatile than the market, and, correspondingly, a beta of more than 1.0 indicates that the investment's price will be more volatile than the market. The CAPM describes the relationship between risk and expected return that is used in pricing of risky securities.

$$R_p = R_f + \beta(R_m - R_f) + E_{pt}$$

Where β is the measure of systematic risk of the portfolio.

The general idea behind CAPM is that investors need to be compensated in two ways: time value of money and risk. Time value of money is represented by risk free rate (R_f) in the formula and compensates the investors for placing money in an investment over a period of time. The other half of the formula represent the risk and calculates the amount of compensation the investors needs for taking on additional risk. This is calculated by taking a risk measure (Beta) that compensate the return of the asset to the market over a period of time and to the market premium($R_m - R_f$).

G. Unique Risk

This risk is the risk of portfolio in particular. It is measured with the help of standard deviation of error term. Such risk can be reduced by better portfolio management. Symbolically;

$$SDEP_t = \left[\sum \frac{(E_{pt} - E_p)}{n-1} \right]^{\frac{1}{2}}$$

Where $SDEP_t$ is the unique risk of the portfolio, E_{pt} are error terms of the portfolio for period t and E_p is the average error term.

H. Definitions of some used concepts

a. Portfolio Return

Fundamentally return on a portfolio is:

$$R_p = \frac{NAV_t - NAV_{t-1}}{NAV_{t-1}} \times 100$$

Where R_p is the return on portfolio, NAV is the net asset value of fund and *t* is the time period.

b. Market Return

Similarly the return on market index is calculated as under;

$$R_m = \frac{Market\ i\ Index_t - Market\ i\ Index_{t-1}}{Market\ i\ Index_{t-1}} \times 100$$

c. Risk

The risk is calculated as standard deviation of monthly returns.

$$\sigma_p = \sqrt{\frac{\sum (R_p - \overline{R_p})^2}{n-1}}$$

d. Risk free return

This is the return which investors expect without any risk.

V. DATABASE

This paper covers performance evaluation of 20 diversified equity schemes of various fund houses. These mutual fund schemes are of the varied size and are based on different benchmarks. This study is based on the data for the period of five years, from June 2007 to May 2012.This period covers both the boom and recession periods. Hence it provides more opportunities to the fund managers to prove their prowess. As this study is based on monthly NAV data, the study period is long enough to draw meaningful inferences on the performance and its determinants. Yearly NAV data has been compiled from the website www.moneycontrol.com and www.mutualfundsindia.com. This study has used the monthly yield rate on three months fixed deposit of state bank of India as a surrogate to the risk-yield rate of return and the data have been downloaded from the website of State Bank of India. (Note :kindly refer table-1)

VI. EMPIRICAL FINDINGS AND DISCUSSION

A. Risk Adjusted Performance of Mutual Funds

Because of high risk involved in direct investment in equity stocks, investing through mutual funds is becoming popular among Indian investors. Investors are always concerned about getting higher return by taking limited risk, which can be made possible by leveraging the expertise and competence of fund managers. Fund managers are expected to generate higher return compared to benchmark return through their deep understanding of markets and better stock picking ability.

Table 2 highlights the average yearly return of 20 sampled schemes, standard deviation of their return, their beta and average yearly return of their benchmarks. During the selected period of June' 2007 to May' 2012 all the 20 sampled equity diversified schemes have recorded positive average return. Out of 20 selected funds 5 funds recorded average yearly return of more than 10%, total 16 schemes recorded average yearly return of more than 5% and remaining 4 schemes recorded average yearly return of less than 5%. The top performers in terms of these variables are ING Dividend Yield Fund, Tata Dividend Yield Fund, UTI MNC Fund, Quantum Long-Term Equity Fund, Canara Robeco Equity Diversified. The least performing schemes are Tata Equity Opportunities

Fund - Plan B, Tata Equity Management Fund, AIG India Equity Fund - Regular Plan and SBI One India Fund with average return of less than 5%. Except SBI One India Fund all other schemes have performed better than their benchmarks.

Now the question arises whether these returns are commensurate with the level of risk involved in each fund. The standard deviation of yearly returns represents the total risk involved in the investment in the fund concerned. The established theory states that higher risk is associated with higher return. Is this applicable for sampled equity diversified schemes? A glance at table 2 shows that higher returns are associated with higher returns and the correlation coefficient between return and total risk is 0.79 for better performing schemes (Return>7%). However the correlation coefficient between return and total risk for less performing schemes (Return>7%) is 0.23. This shows that there may be some other factors contributing to the lower performance of such funds.

Systematic risk as measured by beta is the market risk and generally calculated with the help of CAPM model. Higher value of beta shows higher responsiveness of the portfolio return to the market risk. Out of total 20 schemes 11 schemes have beta value of more than 1, which show high volatility of these schemes. The average beta value of all the schemes is 1.077. The correlation coefficient between the returns of better performing schemes and beta value is 0.52 whereas correlation coefficient between the returns of less performing schemes and beta value is 0.5. This show that performance of both better performing and less performing schemes are equally associated with market risk as measured by beta. (Note : Kindly refer table -2)

B. Risk and Return in Major Benchmark Markets

So far as the performance of the benchmark markets in terms of returns is concerned, it further support the basic theme of higher risk – return ratio. Markets with higher returns are also carrying higher value of standard deviation of yearly return and markets with lower yearly returns are also having lower level of risk. The Correlation Coefficient between average yearly return and risk as measured by standard deviation is 0.54. (Note :kindly refer table-3)

C. Risk Adjusted Performance Measure of Equity Diversified Fund Schemes

The Sharpe ratio is used to characterize how well the return of an asset compensates the investor for the risk taken. It measures the performance of fund in terms of risk adjusted return. To adjust the risk Sharpe ratio uses total risk. Moreover this ratio does not depend on the benchmark market. Results in Table 4 shows that so far the performance of fund in terms of Sharpe ratio is

concerned, out of 20 equity diversified schemes, 9 have recorded negative excess returns. Except these nine schemes all other funds have performed better than the risk free fixed returns and the top five performers in terms of Sharpe ratio are: UTI MNC Fund, ING Dividend Yield Fund, Tata Dividend Yield Fund, Canara Robeco Equity Diversified and Quantum Long-Term Equity Fund.

On other hand, the Treynor ratio measures the risk adjusted performance of mutual fund by using systematic risk (beta value). The top five performing funds in terms of Treynor measure are: ING Dividend Yield Fund, UTI MNC Fund, Canara Robeco Equity Diversified, Tata Dividend Yield Fund, and Quantum Long-Term Equity Fund. Excluding minor changes in the rank of performance of the funds, the overall situation did not change much so far the risk adjusted measure of fund performance is concerned. It is observed that performance of fund is more or less same so far as the Sharpe ratio and Treynor ratio are concerned. The correlation of coefficient between Sharpe ratio and Treynor ratio is 0.99. So far the performance of funds in terms of benchmark is concerned out of 20 sampled schemes, 19 schemes have higher Sharpe ratio than the Sharpe ration of benchmark markets. (Note :kindly refer table-4)

D. Diversification

The basic idea behind equity diversified mutual funds is to lessen the unique risk specific to the portfolio through diversification. Higher the diversification, lesser the unique risk. Fund manager can enhance the performance of fund by reducing unique risk through efficient diversification. Table 5 shows combination of such risks and diversification. Systematic risk includes all types of factors which influence all the securities available in the market. Unique risk is the risk of portfolio in particular. It is measured with the help of standard deviation of error term. Unique risk can be altered by better diversification. The explanatory power (R2) of the CAPM measures the level of diversification in the fund portfolio. Result in Table 5 shows that for the funds with high R2 the level of unique risk is low and for the funds with low R2 ratio the level unique risk is high. The correlation coefficient between R2 and unique risk is -0.0071. So the overall results substantiate the fact that higher the level of diversification lower the level of unique risk and expectedly higher the return. The fund managers who have diversified their portfolio very successfully are HDFC Growth Fund, Franklin India Prima Plus Fund, Tata Pure Equity Fund, L&T Opportunities Fund, Principal Dividend Yield Fund. The average R2 ratio for all the sampled schemes is 0.73 which shows that schemes adequately diversified. (Note :kindly refer table-5)

E. Stock Selection Skills

The performance of mutual fund depends upon number of factors. One such factor is the stock selection ability of fund manager, i.e. fund manager should be able to pick the undervalued stocks in the portfolio, in addition to correctly timing the market.

The stock selection skill of fund managers can be evaluated with the help of two measures, namely, Jensen's and Fama's measures. So far the performance of managers in terms of Jensen's measure is concerned out of 20 sampled schemes only one scheme (SBI one India) has recorded negative value of alpha. This indicates that fund managers of these schemes were able to beat the market by using their skill in selection of portfolio. Top five performers in terms of Jensen's alpha measure are: Tata Dividend Yield Fund, ING Dividend Yield Fund, Quantum Long-Term Equity Fund, HDFC Growth Fund, Principal Dividend Yield Fund. The funds which have recorded negative Jensen's alpha measure not recommend they are performing below the market return.

To further justify the selectivity through Jensen's alpha, Fama's selectivity measure has been calculated and the results are presented in Table 6. Positive high value of Fama's measure indicates that the fund has achieved superior returns and the investors are benefited from them. Results in Table 6 shows that, 12 out of 20 sampled schemes have reported positive value for Fama's measure and rest of the 8 schemes have reported negative values. All these 12 schemes have also reported positive value of Jensen's measure. Hence overall these 12 funds seem to be more reliable so far the professional stock selection skill of managers is concerned during the study period. The top five performers in terms of Fama's measure are; ING Dividend Yield Fund, Tata Dividend Yield Fund, Quantum Long-Term Equity Fund, Canara Robeco Equity Diversified, UTI MNC Fund, which are more or less same with the top performers in terms of Jensen's measure.

The correlation coefficient between Jensen's measure and portfolio return is 0.89 and, the correlation coefficient between Fama's measure and portfolio return is 0.98. High positive correlation coefficient between Jensen's measure and portfolio return and Fama's measure and portfolio return validate the fact that, better stock selection skill of fund managers has resulted in higher portfolio return. (Note :kindly refer table-6)

VII. CONCLUSION

This study has been carried out to evaluate the performance of selected 20 equity diversified schemes during the study period of June 2007 to May 2012. An attempt has been made to evaluate the fund's performance, level of diversification and manager's ability to pick the undervalued stocks. The study revealed that except one all the sampled schemes have performed better than market. Supporting the established relationship of high risk - high return, better performing schemes are exposed to higher risk. Better performing schemes were less afflicted by systematic risk and highly afflicted by total risk in terms of standard deviation of portfolio return. Out of total, 80% of the schemes have reported lower risk than the risk of benchmark markets. The hypothesis of risk return relationship was also justified by the benchmark markets also. Risk adjusted performance in terms of Sharpe and Treynor ratio showed that 55% of the fund schemes bear positive values.

The findings also revealed that majority of the schemes were adequately diversified. Negative correlation between level of diversification, measured by R2 and unique risk proved that, fund managers remained successful in reducing unique risk through better diversification. The study also revealed that about 60% of the schemes were able to beat the market with help of better stock selection skill of fund managers. High positive degree of correlation coefficient between Jensen's measure and portfolio return and Fama's measure and portfolio returns also validated the fact that, fund returns can be enhanced through better stock selection skill of fund managers.

Overall, ING Dividend Yield Fund, Tata Dividend Yield Fund, UTI MNC Fund, Quantum Long-Term Equity Fund, Canara Robeco Equity Diversified, HDFC Growth Fund, Franklin India Prima Plus Fund and Tata Pure Equity Fund are among the best performing funds among the sampled schemes, in terms of all the different performance evaluation measures.

VIII. REFERENCES

1. Friend et. al, "A Study of Mutual Funds" U.S. Securities and Exchange Commission, USA, (1962).
2. Irwin, Brown, FE, et al., "A Study of Mutual Funds: Investment Policy and Investment Company Performance" reprinted in *Hsiu-kwangwer and Alan Jzakon (Ed.) Elements of Investments*, New York: Holt, Renchart and Winston, (1965), pp.371-385.
3. Treynor Jack L, "How to Rate Management of Investment Funds", *Harvard Business Review*, Vol. 43(1), (1965), pp. 63-75.

4. Sharpe, William F "Mutual Fund Performance", *The Journal of Business*, Vol. 39(1), (1966), pp.119-138.
5. Treynor and Mazuy , "Can Mutual Funds Outguess The Markets" *Harvard Business Review*, Vol. 44, (1966), pp.131-136.
6. Jensen Michael C, "The Performance Of Mutual Funds In The Period 1945-1964", *Journal of Finance*, Vol. 23, (1968), pp.389-416.
7. Smith and Tito , "Risk-Return Measures of Post-Portfolio Performance" *Journal of Financial and Quantitative Analysis*, Vol. 4, (1969), pp.449-471.
8. Fama, "Components of Investment Performance", Journal of Finance, Vol. 27, (1972), pp.551-567.
9. Gupta, Ramesh "Mutual Funds", The Management Accountant, Vol. 24(5), (May 1989), pp.320-322.
10. Batra and Bhatia, "Indian Mutual Funds: A study of Public sector" , paper presented, UTI Institute of Capital Market, Mumbai, (1992).
11. Shukla and Singh , "Are CFA Charter Holders Better Equity Fund Managers", *Chartered Financial Analysts*, Vol. 2, (1994), pp.68-74.
12. Shome, "A Study Of Performance Of Indian Mutual Funds", unpublished thesis, Jhansi University, (1994).
13. Yadav R A and Mishra, Biswadeep "Performance Evaluation of Mutual Funds: An empirical analysis", *MDI Management Journal*, Vol. 9(2), (July 1996), pp.117-125.
14. Gupta O P and Sehgal, Sanjay, "Investment Performance of Mutual Funds: The Indian Experience", paper presented in Second UTI-ICM Capital Markets Conference, December 23-24, (1998), Vasi, Bombay.
15. Ramesh Chander "Performance Appraisal of Mutual Funds in India", *Finance India*, Vol. XIV(4) (December 2000), pp.1256-1261.
16. Shah Ajay and Thomas Susan (1994), "Performance Evaluation of Professional Portfolio Management In India", paper presented, CMIE, (10 April 1994).
17. Jayadev M, "Mutual Fund Performance: An Analysis of Monthly Returns", *Finance India*, Vol. X (1) (March 1996), pp. 73-84.
18. Gupta, "The Mutual Fund Industry and Its Comparative Performance", *Journal of Financial and Quantitative Analysis*, Vol. 6, (1974), pp.894.
19. Gupta Amitabh, "Mutual Funds in India: A Study of Investment Management", *Finance India*, Vol. XV (2), (June 2001), pp.631-637.
20. Tripathy, Nalini Prava, "Mutual Fund In India: A Financial Service in Capital Market", *Finance India*, Vol. X (1), (March 1996), pp. 85-91.

21. Muthappan P K & Damodharan E , "Risk-Adjusted Performance Evaluation of Indian Mutual Funds Schemes", Finance India, Vol. XX(3), (September 2006), pp.965-983.
22. R. Shanmugham and Zabiulla (2009), "Stock Selection Strategies of Equity Mutual Fund Managers in India", *Middle Eastern Finance and Economic,* ISSN: 1450-2889 Issue 11 (2011)

TABLES

Table 1: Equity Diversified Schemes, Their Benchmarks and Asset Under Management

Name of Fund Scheme	Benchmark	AUM on 31 march 2012 (Rs. Cr.)	Date of Inception
UTI MNC Fund (Growth)	CNX MNC	208.63	May 29, 1998
HDFC Growth Fund (G)	BSE SENSEX	1,261.95	Sep 11, 2000
Birla Sun Life India GenNext Fund (Growth)	S&P CNX NIFTY	93.29	Jul 12, 2005
Franklin India Prima Plus Fund (G)	S&P CNX 500	1,828.81	Sep 28, 1994
Kotak Contra (Growth)	S&P CNX 500	59.71	Jul 01, 2005
Canara Robeco Equity Diversified (Growth)	BSE-200	542.79	Sep 12, 2003
Fidelity India Special Situations Fund (Growth)	BSE-200	690.50	Apr 26, 2006
L&T Opportunities Fund (G)	S&P CNX NIFTY	104.32	Dec 11, 2003
Tata Dividend Yield Fund (Growth)	BSE SENSEX	273.03	Oct 27, 2004
UTI Equity Fund (Growth)	BSE-100	1,942.34	May 18, 1992
BNP Paribas Dividend Yield Fund (Growth)	BSE SENSEX	12.65	Aug 30, 2005
Tata Pure Equity Fund (Growth)	BSE SENSEX	575.66	May 07, 1998
Quantum Long-Term Equity Fund (Growth)	BSE SENSEX	105.66	Feb 25, 2006
Tata Equity Opportunities Fund - Plan B (Growth)	BSE-200	289.63	Mar 30, 1993

Name of Fund Scheme	Benchmark	AUM on 31 march 2012 (Rs. Cr.)	Date of Inception
Tata Equity Management Fund (Growth)	S&P CNX NIFTY	131.05	Jun 13, 2006
ICICI Prudential Dynamic Plan (Growth)	S&P CNX NIFTY	4,092.27	Oct 18, 2002
AIG India Equity Fund - Regular Plan (Growth)	BSE-100	140.35	May 03, 2007
ING Dividend Yield Fund (Growth)	BSE-200	97.18	Oct 06, 2005
Principal Dividend Yield Fund (Growth)	S&P CNX 500	105.02	Sep 27, 2004
SBI One India Fund (Growth)	BSE-200	483.01	Nov 24, 2006

Table 2: Return and Risk in Sampled Equity Diversified Mutual Funds

Name of Fund Scheme	Average Yearly Return	Standard Deviation of Yearly Return	Beta	Average Yearly Return of Market
UTI MNC Fund (Growth)	13%	18.76%	1.21	7.73%
HDFC Growth Fund (G)	9.64%	18.26%	1.3	2.43%
Birla Sun Life India GenNext Fund (Growth)	8.02%	15.79%	0.96	3.38%
Franklin India Prima Plus Fund (G)	7.2%	11.67%	0.87	1.9%
Kotak Contra (Growth)	5.42%	13.06%	0.87	1.9%
Canara Robeco Equity Diversified (Growth)	10.7%	14.05%	0.73	3.7%
Fidelity India Special Situations Fund (Growth)	5.82%	13.89%	0.73	3.7%
L&T Opportunities Fund (G)	5.68%	19.41%	1.46	3.38%
Tata Dividend Yield Fund (Growth)	13.12%	23.20%	1.56	2.43%
UTI Equity Fund (Growth)	9.44%	16.6%	1.03	2.99%
BNP Paribas Dividend Yield Fund (Growth)	9.76%	18.47%	0.9	2.43%
Tata Pure Equity Fund (Growth)	7.38%	14.26%	1	2.43%
Quantum Long-Term Equity Fund (Growth)	11.06%	19.34%	1.16	2.43%

Name of Fund Scheme	Average Yearly Return	Standard Deviation of Yearly Return	Beta	Average Yearly Return of Market
Tata Equity Opportunities Fund - Plan B (Growth)	4.96%	20.72%	1.19	3.7%
Tata Equity Management Fund (Growth)	4.9%	13.74%	0.91	3.38%
ICICI Prudential Dynamic Plan (Growth)	9.28%	19.54%	1.3	3.38%
AIG India Equity Fund - Regular Plan (Growth)	4.02%	17.79%	0.94	2.99%
ING Dividend Yield Fund (Growth)	13.48%	22.44%	1.17	3.7%
Principal Dividend Yield Fund (Growth)	6.7%	20.12%	1.47	1.9%
SBI One India Fund (Growth)	0.12%	15.29%	0.78	3.7%
Correlation Coefficient between Return (≥7%) and Total Risk				0.79
Correlation Coefficient between Return (≤7%) and Total Risk				0.23
Correlation Coefficient between Return (≥7%) and Systematic Risk				0.52
Correlation Coefficient between Return (≤7%) and Systematic Risk				0.50

Table 3: Risk and Return in Major Benchmark Markets

Benchmark Market	Average Yearly Returns	Standard Deviation of Yearly Return
CNX MNC	7.73%	15.27%
BSE SENSEX	2.43%	13.47%
S&P CNX NIFTY	3.38%	12.43%
S&P CNX 500	1.9%	12.78%
BSE-200	3.7%	15.92%
BSE-100	2.99%	14.78%
Correlation Coefficient Between Return and Total Risk		0.54

Table 4: Risk Adjusted Performance Measure of Equity Diversified Fund Schemes			
Name of Fund Scheme	**Sharpe Ratio of Fund**	**Sharpe Ratio of Benchmark**	**Treynor Ratio of Fund**
UTI MNC Fund (Growth)	0.307	0.031	4.752
HDFC Growth Fund (G)	0.121	-0.358	1.700
Birla Sun Life India GenNext Fund (Growth)	0.049	-0.311	0.802
Franklin India Prima Plus Fund (G)	-0.004	-0.419	-0.057
Kotak Contra (Growth)	-0.140	-0.419	-2.103
Canara Robeco Equity Diversified (Growth)	0.246	-0.223	4.726
Fidelity India Special Situations Fund (Growth)	-0.103	-0.223	-1.959
L&T Opportunities Fund (G)	-0.081	-0.311	-1.075
Tata Dividend Yield Fund (Growth)	0.253	-0.358	3.763
UTI Equity Fund (Growth)	0.132	-0.288	2.126
BNP Paribas Dividend Yield Fund (Growth)	0.136	-0.358	2.789
Tata Pure Equity Fund (Growth)	0.009	-0.358	0.130
Quantum Long-Term Equity Fund (Growth)	0.197	-0.358	3.284
Tata Equity Opportunities Fund - Plan B (Growth)	-0.111	-0.223	-1.924
Tata Equity Management Fund (Growth)	-0.171	-0.311	-2.582
ICICI Prudential Dynamic Plan (Growth)	0.104	-0.311	1.562
AIG India Equity Fund - Regular Plan (Growth)	-0.182	-0.288	-3.436
ING Dividend Yield Fund (Growth)	0.278	-0.223	5.325
Principal Dividend Yield Fund (Growth)	-0.027	-0.419	-0.374
SBI One India Fund (Growth)	-0.466	-0.223	-9.141
Correlation of coefficient between Sharpe and Treynor			0.99

Table 5 : Risk and Diversification in Equity Diversified Mutual Fund Schemes				
Name of Fund Scheme	**Total Risk (σ_p)**	**Systematic Risk (β)**	**Unsystematic Risk (σ_{et})**	**Diversification (R^2)**
UTI MNC Fund (Growth)	18.76%	1.21	3.516	0.79
HDFC Growth Fund (G)	18.26%	1.3	2.942	0.92
Birla Sun Life India GenNext Fund	15.79%	0.96	2.355	0.57
Franklin India Prima Plus Fund (G)	11.67%	0.87	1.145	0.91
Kotak Contra (Growth)	13.06%	0.87	1.489	0.73
Canara Robeco Equity Diversified (Growth)	14.05%	0.73	1.907	0.69
Fidelity India Special Situations Fund Growth)	13.89%	0.73	1.862	0.69
L&T Opportunities Fund (G)	19.41%	1.46	3.448	0.87
Tata Dividend Yield Fund (Growth)	23.2%	1.56	4.817	0.82
UTI Equity Fund (Growth)	16.6%	1.03	2.563	0.84
BNP Paribas Dividend Yield Fund (Growth)	18.47%	0.9	3.223	0.43
Tata Pure Equity Fund (Growth)	14.26%	1	1.801	0.9
Quantum Long-Term Equity Fund (Growth)	19.34%	1.16	3.428	0.65
Tata Equity Opportunities Fund - Plan B (Growth)	20.72%	1.19	4.115	0.84
Tata Equity Management Fund (Growth)	13.74%	0.91	1.764	0.68
ICICI Prudential Dynamic Plan (Growth)	19.54%	1.3	3.565	0.69
AIG India Equity Fund - Regular Plan (Growth)	17.79%	0.94	3.004	0.61
ING Dividend Yield Fund (Growth)	22.44%	1.17	4.863	0.69
Principal Dividend Yield Fund (Growth)	20.12%	1.47	3.430	0.87
SBI One India Fund (Growth)	15.29%	0.78	2.261	0.66
Correlation Coefficient Between R^2 and Unsystematic Risk				-0.0071

Table 6 : Stock Selection Skill of Fund Manager			
Name of Fund Scheme	**Average Yearly Return**	**Jensen's Measure**	**Fama's Measure**
UTI MNC Fund (Growth)	13%	5.1692	3.19052
HDFC Growth Fund (G)	9.64%	8.476	2.49125
Birla Sun Life India GenNext Fund (Growth)	8.02%	4.4852	1.09825
Franklin India Prima Plus Fund (G)	7.2%	4.6045	0.12068
Kotak Contra (Growth)	5.42%	2.8245	-1.63899
Canara Robeco Equity Diversified (Growth)	10.7%	6.0415	3.6986
Fidelity India Special Situations Fund (Growth)	5.82%	1.1615	-1.18423
L&T Opportunities Fund (G)	5.68%	4.0802	-1.1665
Tata Dividend Yield Fund (Growth)	13.12%	13.3892	6.22733
UTI Equity Fund (Growth)	9.44%	6.5778	2.45365
BNP Paribas Dividend Yield Fund (Growth)	9.76%	6.848	2.794
Tata Pure Equity Fund (Growth)	7.38%	4.95	0.350
Quantum Long-Term Equity Fund (Growth)	11.06%	9.4012	4.108
Tata Equity Opportunities Fund - Plan B (Growth)	4.96%	1.9345	-1.923
Tata Equity Management Fund (Growth)	4.9%	1.1717	-2.064
ICICI Prudential Dynamic Plan (Growth)	9.28%	7.061	2.436
AIG India Equity Fund - Regular Plan (Growth)	4.02%	0.7744	-2.947
ING Dividend Yield Fund (Growth)	13.48%	10.3835	6.627
Principal Dividend Yield Fund (Growth)	6.7%	7.3145	-0.256
SBI One India Fund (Growth)	0.12%	-4.361	-6.859
Correlation Coefficients Between Return and Jensen's Measure			0.89
Correlation Coefficients Between Return and Fama's Measure			0.98

Mr. Ashok Bantwa holds MBA degree and is presently working as an assistant professor in MBA programme of Gujarat Technological University. He is a research scholar pursuing PhD and is actively involved in teaching profession for over past three years. His research interests are focused on Strategic Financial Management, Financial services, Capital Markets and Economics. He is the author/co-author of two books, seven research papers and articles published by reputed national and international journals.

Mr. Krunal K Bhuva is currently serving as an Assistant professor at Jayshukhlal Vadhar Institute of Management Studies (JVIMS) Jamnagar. Mr. Krunal K Bhuva has done P.G.D.B.M. from Tolani Institute of Management Studies with specialization in Finance and Marketing. He is dealing with the subject like Economics, Financial Management, Risk Management, Investment and Portfolio Management, International Finance, Management of Financial Services & International Finance.