

A STUDY ON ANALYSIS OF RETURN AND RISK OF SELECTED EQUITY DIVERSIFIED SCHEMES IN INDIA

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ABSTRACT

With dynamic liberalization of economic policies there has been a quick growth of capital market, currency market and financial administrations industry. Reliable with this development of the financial part, the mutual fund industry in India has additionally come to possess an essential spot. It has risen as an in number financial middle person and is assuming an indispensable part in conveying security to the financial framework and proficiency to asset assignment. In the present paper an endeavour has been made to assess the execution of the chose value differentiated plans in India. The execution of chose fund is assessed utilizing normal rate of return of fund, standard deviation, Beta, broadening, Sharpe proportion, Treynor proportion and Jensen proportion and Fama's decay measure. Benchmark correlation is additionally made as it demonstrates to what degree the fund supervisors had the capacity deliver better execution of oversight portfolio contrasted with the market or record portfolio. The reference period for the study is 5 years from April 2009 to March 2014. Findings of the study revealed that the majority of the schemes outperformed the market benchmark and they appeared to possess superior stock selection skill. The average daily return of all the schemes was found to be greater than the market return. However the difference was not found significant on application of t test. Majority of the fund schemes were reasonably diversified.

Keywords: Growth Schemes, Mutual funds, Risk adjusted Return, Sharpe ratio, Treynor ratio.

INTRODUCTION

Resource mobilization is very significant for the economic growth of a developing country like India. The Indian mutual fund industry is playing a vital role in this process of mobilization of economic resources. Over the years, the Indian

mutual fund industry has evolved from a single player market in 1963, with the formation of Unit Trust of India (UTI), to a highly competitive market comprising domestic and foreign players, supported by favourable regulatory reforms.

Today the Indian mutual fund industry is one of the fastest growing sectors in the Indian capital and financial markets. The mutual fund industry in India has seen dramatic improvements in quantity as well as quality of product and service offerings in recent years. The Indian mutual fund industry has grown several folds in terms of size and operations during the past five decades of its existence. There has been substantial growth in terms of assets under management, variety of investment schemes. From a single player the number of players has increased to 42 and the number of schemes has spiralled to more than 900 with managed assets of about Rs.9Lakh crores. The growth of mutual funds has also posed difficulties to investors in making a selection of suitable schemes. A proper performance evaluation of these schemes will remove confusion and help the small investors in selecting suitable mutual fund scheme for investment. Further with growing competition in the market, the fund managers also need to satisfy themselves that management fees and research expenses are justified keeping in view the returns generated. Moreover, there is need to investigate how efficiently the hard earned money of the investors and scarce resources of the economy are being utilized by mutual funds. In this context an attempt has been made in the present paper to evaluate the performance of selected equity diversified schemes in India.

The paper is divided into six sections including the present one. Section 2 presents the brief review of literature pertaining to evaluation of mutual fund performance. Section 3 discusses the objectives of the study; the data used in the study and their sources and specifies the testable

hypothesis. Section 4 presents the performance measures used and empirical results of the study. Section 5 presents the concluding remarks.

REVIEW OF LITERATURE

Various studies have been carried out in India and abroad to evaluate the performance of mutual fund schemes from time to time. In this study an attempt has been made to briefly review the work already undertaken and methodology employed. Brief review of select studies has been presented in the following pages. Jensen (1967) investigated the predictive ability of 115 mutual fund managers in the period 1945-1964 using risk adjusted performance measure. The study concluded that on an average 115 mutual funds considered in the study were not able to predict security prices well enough to outperform a buy-the-market-and-hold policy and that there was very little evidence that any individual fund was able to do significantly better than that which we expected from mere random chance. Musa Essayyad and H.K.Wu (1988) investigated the performance of international mutual funds incorporated in the U.S from the investor's point of view. The study found that the U.S. International mutual funds as a group outperformed the U.S. market in terms of both returns and risk. M Jayadev (1998) tried to give an empirical evidence in the Indian context on the performance of Mutual fund managers. The study revealed that the returns and risk were not always in conformity with the stated investment objective. Some of the funds were able to earn higher returns due to selectivity, but failed to maintain proper balance between selectivity and diversification. Study indicated that due to lack of diversification the funds performance had declined. Further analysis with the help of Fama's measures indicated that the selectivity ability of fund managers was not satisfactory. H.J.Sondhi, P.K. Jain (2006) evaluated the market risk and investment performance of equity mutual funds in India. Their study showed that relationship between risk and return of the sample equity mutual funds was not necessarily in line with the premise that high risks portfolios generate superior returns. They found that sample equity mutual funds had invested in low risk securities, contrary to the basic objective of equity to generate high returns by assuming high risks. Beehary Nitish,

Rojid Sawkut (2009) analysed the performance of Mauritian Mutual funds. The results show that the rankings obtained by applying both the Sharpe and Treynor rules are almost the same, implying that the funds appear to be well-diversified. The positive Jensen's alpha indicated that fund managers though their stock picking skills, privileged information or intuition have „beaten the market“. Individual analysis revealed that funds are heavily dependent on the performance of the local stock market, that is they move in line with the market index and those mutual funds investing heavily in the local stock market are reported to „beat the market“. Aman Srivastava and Rakesh Gupta (2010) evaluated the performance of growth oriented equity schemes of Indian mutual funds schemes during bear market. Measures such as relative performance index (RPI), Treynor's ratio, Sharpe ratio, Sharpe's measure, Jensen's measure and Fama's measure were used in evaluation. The findings of the study suggested that majority of the mutual funds outperformed the market benchmarks. However the study also indicated that Indian fund managers were not properly diversifying their portfolios which resulted in huge losses to investors in falling markets. Vangapandu Rama Devi and Nooney Lenin Kumar (2010) in their study found that the returns of mutual fund schemes significantly differ from one another in the respective category for equity diversified, equity index, equity tax savings investment styles. Shrinivas R. Patil and Prof. Prakash Rao K. S.(2011) On the basis of the comparison of mutual fund returns with their benchmark indexes study indicated superior performance of mutual funds. It was also observed in the study that investment in mutual funds is quite sensible than direct capital market investment, not only because of return but also for risk diversification, professional management and other benefits. Rakesh Kumar (2012) analysed the mutual fund performance, level of diversification, manager's capability to pick the undervalued stocks and to time the market. The study revealed that 60% sampled fund schemes performed better than market. Moreover, better performing funds were exposed to higher risk but were less afflicted to market risks. A majority of the funds were reasonably diversified and reduced the unique risk. Consequently, unique risks and the returns were negatively associated. The study also exposes that about 58% of fund schemes were capable of beating the market by

stock selection skills. Deepti Sahoo and Naresh Kumar Sharma in their study evaluated the investment performance of selected mutual funds in terms of risk-return analysis. Their study showed that performance in terms of returns was better in the case of Tax planning funds and diversified equity funds, as compared to balanced and debt funds. However, the former also had much higher risks by any measure compared to the latter. Theodore Prince and Frank Bacon based on the analysis of small cap growth schemes of mutual funds found an evidence in support of market efficiency since for the most part, the actively managed funds examined in their study produced returns that were largely expected.

OBJECTIVES OF THE STUDY

The objective of the study is to evaluate the performance of open ended equity diversified Indian mutual fund schemes in the framework of risk and return during the recent five year period 1st April 2009 to 31st March 2014.

The specific objectives of the study are:

1. To evaluate the performance of selected mutual funds schemes on the basis of risk-return parameters.
2. To examine fund’s sensitivity to the market fluctuations in terms of beta.

3. To study the major factors (diversification, selectivity) influencing the investment performance of the schemes.
4. To analyse the performance based the risk adjusted performance measures.

DATA AND METHODOLOGY OF THE STUDY

The current study focuses on the performance of the fund managers of 24 equity diversified mutual fund schemes of various fund houses (with growth option). The period of the study is for 5 years from 1st April 2009 to 31st March 2014. Daily net asset values (NAVs) obtained from the official website of the association of mutual funds in India (www.amfiindia.com) has been used for the purpose of the study. NSE Nifty is used a benchmark portfolio and the yield on 91 day Treasury bills is considered a proxy for risk free yield. Data on NSE Nifty and 91 day Treasury bills is collected from NSE website and RBI website respectively.

Hypothesis The study tests the following hypothesis with regard to performance evaluation:

H0: There is no difference between the return of the equity diversified growth schemes of mutual funds and market return. The selected 24 equity diversified mutual funds from 12 mutual funds are presented in Table I.

Table 1: NAMES OF THE ASSET MANAGEMENT COMPANIES, ASSETS UNDER MANAGEMENT AS ON 31ST MARCH 2014 AND SAMPLED EQUITY DIVERSIFIED FUND SCHEMES

Mutual Funds	Assets under management (March 2014) (Rs.Cr)	Mutual Fund Schemes
HDFC Mutual Fund	112,963	HDFC Equity Fund - Growth Option HDFC Capital Builder Fund - Growth Option
ICICI Prudential Mutual Fund	106,822	ICICI Prudential Dynamic - Regular Plan - Growth ICICI Prudential Top 200 Fund - Regular Plan - Growth
Reliance Mutual Fund	103,542	Reliance Equity Opportunities Fund-Growth Plan Reliance Growth Fund-Growth Plan-Growth Option
Birla Sun Life Mutual Fund	89,051	Birla Sun Life Equity Fund-Plan B(Growth) Birla Sun Life Pure Value Fund - Growth Option
UTI Mutual Fund	74,233	UTI - Equity Fund-Growth Option UTI Contra Fund-Growth-Growth Option
SBI Mutual Fund	65,499	SBI Magnum Equity Fund- REGULAR PLAN – Growth SBI Magnum Multicap Fund - REGULAR PLAN -Growth Option

Franklin Templeton Mutual Fund	45,404	Franklin India Flexi Cap Fund-Growth Plan Franklin India Opportunities Fund - Growth
IDFC Mutual Fund	41,349	IDFC Equity Fund-Regular Plan-Growth IDFC Premier Equity Fund-Regular Plan-Growth
Kotak Mahindra Mutual Fund	33,079	Kotak Classic Equity Scheme---Growth Kotak Opportunities---Growth
DSP BlackRock Mutual Fund	31,631	DSP BlackRock Equity Fund - Regular Plan – Growth DSP BlackRock Opportunities Fund-Regular Plan - Growth
Tata Mutual Fund	21,954	Tata Equity Opportunities Fund Plan AGrowth Tata Equity P/E Fund Plan A-(Growth Option)
Deutsche Mutual Fund	18,795	Deutsche Alpha Equity Fund – Growth Deutsche Investment Opportunity Fund - Growth Option

Source: Computed from NAVs

EMPIRICAL ANALYSIS RETURN AND RISK OF SELECTED EQUITY SCHEMES

Fund returns are assumed to be continuously compounded and are calculated as follows:

RETURN

The daily log returns are computed on the basis of the different schemes and returns on the market index are calculated on the basis of NSE Nifty on the respective date for the 5 years.

The log returns from a mutual fund scheme (R_{pt}) at time t, is as follows

$$R_{pt} = \ln (NAV_t / NAV_{t-1})$$

Where, NAV_t and NAV_{t-1} are net assets values for time period t and t-1 respectively. The mean return of the mutual fund scheme (R_p) over a period of time is calculated using the following equation.

$$R_p = \sum R_{pt} / n$$

Where R_{pt} is the return from a mutual fund scheme at time t and n is the total number of time period studied.

The log return on the market (represented by a stock index) at time t, is as follows:

$$R_{it} = \ln(I_t / I_{t-1})$$

Where I_t and I_{t-1} are value of a benchmark stock market index at period t and t-1 respectively. In

the present study NSE Nifty has been taken as the benchmark stock index representing the broad market.

The mean return of the market portfolio (R_i) over a period of time is computed using the following equation.

$$R_i = \sum R_{it} / n$$

Where, R_{it} is the return from a stock market index (NSE Nifty) at time t and n is the total number of time periods studied.

The average daily return along with the ranking based on this return is presented in Table II. All the schemes have recorded positive average return during the study period. The ranking pattern based on return statistics shows that Reliance Growth Fund, ICICI Prudential Top 200 Fund and IDFC Premier Equity Fund have got the top 1st, 2nd and 3rd ranks respectively. Conversely UTI Contra Fund, Deutsche Alpha Equity Fund and Deutsche Investment Opportunity Fund obtained the lowest ranks on the basis of return earned. The average daily return of all the schemes (0.075%) is greater than the market return (0.063%). However the difference is not found significant on application of t test at 0.05 level of significance, as the p-value is greater than 0.05 in the case of all the mutual fund schemes analysed in the study. Therefore the null hypothesis that there is no significant difference between the return on the equity diversified growth schemes of mutual funds and market return is accepted. As presented in Table 3, 18 schemes have outperformed the

market, whereas 6 schemes have underperformed the market index.

RISK

Standard Deviation (σ)

Standard deviation is a way to quantify risk. It is a statistic to measure the variation in individual returns from the average expected return over a certain period of time. The higher the standard deviation, the greater the risk.

The standard deviation is computed from logarithmic daily returns using the following formula

$$\sigma_p = [1/n \sum (R_{pt} - R_p)^2]^{1/2}$$

Where σ_p is the total risk of the scheme portfolio. The total risk of the market line portfolio is:

$$\sigma_m = [1/n \sum (R_{mt} - R_m)^2]^{1/2}$$

Where σ_m is the total risk of the market portfolio.

Systematic risk (β) of the portfolio:

Beta relates the return on a mutual fund to a market index. Beta signifies the sensitivity of the return on the mutual fund scheme in comparison to the movement in the stock market index. Higher value of beta indicates a high sensitivity of fund returns against market returns, the lower value indicates a low sensitivity.

Beta of the Portfolio is calculated as follows:

$$\beta = \text{Cov}(R_p, R_m) / \sigma_m^2$$

$\text{Cov}(R_p, R_m)$ = Covariance of the portfolio and market returns

σ_m^2 = Variance of the market return.

The total risk (σ) and beta values for all the 24 schemes has been calculated and presented in the

Table II. The risk (σ) associated with mutual funds (1.122745) is found to be lower than that of market risk (1.302436). Positive value of beta in the case of all the mutual fund schemes indicates that the fund return closely follows the market return. All the schemes have recorded a beta less than 1 indicating holding of relatively less risky portfolio than the market portfolio. However majority of the schemes are highly volatile as their betas have high value, except for nine fund schemes that have recorded a beta of less than 0.80.

DIVERSIFICATION: CO-EFFICIENT OF DETERMINATION (R^2)

The basic idea behind the equity diversified mutual funds is to lessen the unique risk specific to the portfolio through diversification. Higher diversification lessens the risk. Portfolio diversification is typically measured by correlating the returns on the portfolio with the returns on the market index, this is accomplished as part of the process of fitting a characteristic line whereby the portfolio's returns are regressed against the market's returns. The square of the correlation coefficient produced as a part of the analysis called the coefficient of determination or R^2 is used to denote the degree of diversification. A low R^2 value indicates that the fund has further scope for the diversification.

Table II also shows the values of co-efficient of determination for each of the 24 equity diversified schemes, when measured with the market index (NSE Nifty).

The highest R^2 value was found in IDFC Equity Fund-Regular Plan (0.994) followed by ICICI Prudential Top 200 Fund - Regular Plan (0.950) and Franklin India Opportunities Fund (0.949). 22 schemes out of 24 i.e about 92% of the sampled funds have recorded R^2 value of more than 0.8 which indicates that these schemes have reasonably exploited the diversification strategy in forming their portfolio.

TABLE II: RETURN, RISK AND DIVERSIFICATION IN EQUITY DIVERSIFIED MUTUAL FUND SCHEMES

	Average Daily Return	Rank	t-stat	p-value	Standard Deviation	Beta	Diversification R ²
Birla Sun Life Equity Fund-Plan B(Growth)	0.074877	12	0.332	0.74	1.192233	0.877634	0.919214
Birla Sun Life Pure Value Fund - Growth Option	0.089004	4	0	1	1.035522	0.671209	0.712704
Deutsche Alpha Equity Fund - Growth	0.056880	23	-0.207	0.836	1.141068	0.850603	0.942633
Deutsche Investment Opportunity Fund - Growth Option	0.058189	22	-0.165	0.869	1.148901	0.838519	0.903593
DSP BlackRock Equity Fund - Regular Plan - Growth	0.072161	17	0.276	0.783	1.089943	0.776975	0.862024
DSP BlackRock Opportunities Fund- Regular Plan - Growth	0.073461	14	0.323	0.747	1.071217	0.787133	0.915914
Franklin India Flexi Cap Fund-Growth Plan	0.082522	19	-0.013	0.989	1.190701	0.860687	0.888582
Franklin India Opportunities Fund - Growth	0.063133	7	0.558	0.577	1.231848	0.920476	0.949104
HDFC Capital Builder Fund - Growth Option	0.088327	6	0.862	0.389	1.007015	0.726580	0.883095
HDFC Equity Fund - Growth Option	0.089478	13	0.751	0.453	1.210562	0.873764	0.883744
ICICI Prudential Dynamic - Regular Plan -Growth	0.085046	20	0.832	0.405	0.904606	0.645069	0.862592
ICICI Prudential Top 200 Fund - Regular Plan -Growth	0.073997	2	0.317	0.752	1.153275	0.863179	0.950273
IDFC Equity Fund-Regular Plan-Growth	0.062372	11	-0.033	0.974	1.283693	0.988996	0.994210
IDFC Premier Equity Fund-Regular Plan-Growth	0.103958	3	1.382	0.167	1.025363	0.643812	0.668769
Kotak Classic Equity Scheme---Growth	0.072636	5	0.289	0.773	1.097801	0.802406	0.906262
Kotak Opportunities---Growth	0.072665	16	0.271	0.786	1.172571	0.864582	0.922247
Reliance Equity Opportunities Fund-Growth Plan-Growth Option	0.104936	15	1.303	0.193	1.114142	0.783347	0.838572
Reliance Growth Fund-Growth Plan-Growth Option	0.071601	1	0.244	0.807	1.151411	0.811456	0.842523
SBI Magnum Equity Fund- REGULAR PLAN - Growth	0.078961	18	0.473	0.636	1.133052	0.835202	0.934451
SBI Magnum Multicap Fund - REGULAR PLAN -Growth Option	0.061996	21	-0.049	0.961	1.143053	0.839673	0.928028
Tata Equity Opportunities Fund Plan AGrowth	0.078287	9	0.456	0.648	1.130516	0.812575	0.876368
Tata Equity P/E Fund Plan A-(Growth Option)	0.078126	10	0.462	0.644	1.103823	0.767573	0.820262
UTI - Equity Fund-Growth Option	0.080517	8	0.578	0.563	1.026906	0.764460	0.940070
UTI Contra Fund-Growth-Growth Option	0.048064	24	-0.46	0.646	1.186654	0.859163	0.889234
Average of all schemes	0.075883				1.122745		
Market	0.063601				1.302436		

Source: Computed from NAVs

- Treynor Ratio
- Jensen Differential return measure
- Fama's components of investment performance

RISK ADJUSTED PERFORMANCE OF SELECTED MUTUAL FUND SCHEMES

Following four measures have been used in the present study

- Sharpe ratio

Application of sharpe and treynor ratio to evaluate the performance of selected schemes:

SHARPE’S REWARD TO VARIABILITY RATIO

It was developed by Sharpe (1966). Here, additional portfolio return over risk free return is related with the total risk of the portfolio measured in terms of standard deviation. It can be expressed as

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

Where RVAR_p is reward to variability ratio or Sharpe’s ratio, R_p is the average return on the portfolio (managed fund), R_f is the average risk free return; and σ_p is the standard deviation of the fund returns.

By dividing the average return of the portfolio in excess of the risk-free return by the standard deviation of the portfolio, the Sharpe ratio measures the risk premium earned per unit of risk exposure. In other words, this ratio measures the change in the portfolio’s return with respect to a one unit change in the portfolio’s risk. The higher this “reward –to-variability-ratio” the more attractive is the evaluated portfolio because the investor receives more compensation for the same increase in risk.

The benchmark comparison is additional return of market over risk free return related with market portfolio’s total risk.

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

If RVAR_p is greater than the benchmark comparison, the portfolio lies above the ex-post CML, indicating the fund’s superior performance over the market. Alternatively if RVAR_p is less than RVAR_m, the fund’s performance is not good as the market.

TREYNOR’S REWARD TO VOLATILITY RATIO

This is introduced by Treynor (1965). Here, additional returns of the portfolio over the risk

free return are expressed in relation to portfolio’s systematic risk. Treynor’s ratio is calculated as follows:

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

Where RVOL_p is reward to volatility of the portfolio, R_p is the average return on the portfolio, R_f is the average risk free return and β_p is the beta of the portfolio (fund) i.e. sensitivity of fund return to market return. The benchmark for comparison with this measure of performance is additional returns of market over risk free return (R_m-R_f). Where, R_m is average return on market portfolio (benchmark). As the beta of the market portfolio shall always be one. Hence, denominator is always one. If the RVOL_p is greater than the benchmark (R_m-R_f) comparison, the portfolio (fund) has outperformed the market; otherwise it has not.

The sharpe ratio and treynor ratio both for the mutual fund schemes and for the benchmark portfolio (i.e NSE Nifty) are computed and presented in Table III. According to Sharpe index the highest rank goes to the ICICI Prudential Dynamic - Regular Plan –Growth, Franklin India Flexi Cap Fund-Growth Plan, Birla Sun Life Equity Fund-Plan B(Growth). On the other hand the lowest rank is obtained by ICICI Prudential Top 200 Fund - Regular Plan –Growth, followed by the HDFC Capital Builder Fund - Growth Option and Birla Sun Life Pure Value Fund - Growth Option. Interestingly all the schemes have outperformed the market index and have succeeded to earn a return higher than risk free rate of return as indicated by the positive values of Sharpe’s index.

Treynor measure also indicates an almost similar type of situation as indicated by Sharpe’s index since all the funds have obtained positive values of this measure. However the benchmark comparison reveals that 18 schemes have outperformed the market index whereas the rest 6 schemes have underperformed. The top performing funds in order are: ICICI Prudential Top 200 Fund - Regular Plan –Growth, Reliance Growth Fund-Growth Plan-Growth Option and

HDFC Capital Builder Fund - Growth Option. Thus 18 schemes had outperformed both in terms

of total risk and systematic risk.

Table III: RISK-ADJUSTED PERFORMANCE MEASURES OF EQUITY DIVERSIFIED FUND SCHEMES

	Sharpe Ratio	Rank	Treynor ratio	Rank
Birla Sun Life Equity Fund-Plan B(Growth)	0.046639	3	0.055604	16
Birla Sun Life Pure Value Fund - Growth Option	0.067339	22	0.103888	5
Deutsche Alpha Equity Fund - Growth	0.032958	9	0.044212	23
Deutsche Investment Opportunity Fund - Growth Option	0.033872	11	0.04641	21
DSP BlackRock Equity Fund - Regular Plan - Growth	0.048523	18	0.068069	14
DSP BlackRock Opportunities Fund-Regular Plan - Growth	0.050586	16	0.050586	12
Franklin India Flexi Cap Fund-Growth Plan	0.053119	2	0.073486	20
Franklin India Opportunities Fund - Growth	0.035605	7	0.047649	9
HDFC Capital Builder Fund - Growth Option	0.068573	23	0.09504	3
HDFC Equity Fund - Growth Option	0.057994	6	0.080348	15
ICICI Prudential Dynamic - Regular Plan -Growth	0.072708	1	0.101962	22
ICICI Prudential Top 200 Fund - Regular Plan -Growth	0.047451	24	0.063398	1
IDFC Equity Fund-Regular Plan-Growth	0.033574	19	0.043578	8
IDFC Premier Equity Fund-Regular Plan-Growth	0.082590	4	0.131537	7
Kotak Classic Equity Scheme---Growth	0.048609	21	0.066504	4
Kotak Opportunities---Growth	0.045534	15	0.061754	13
Reliance Equity Opportunities Fund-Growth Plan-Growth Option	0.076887	5	0.109355	17
Reliance Growth Fund-Growth Plan-Growth Option	0.045447	17	0.064486	2
SBI Magnum Equity Fund- REGULAR PLAN - Growth	0.052679	14	0.071465	18
SBI Magnum Multicap Fund - REGULAR PLAN -Growth Option	0.037376	10	0.050880	19
Tata Equity Opportunities Fund Plan AGrowth	0.052201	12	0.072625	10
Tata Equity P/E Fund Plan A-(Growth Option)	0.053317	13	0.076674	11
UTI - Equity Fund-Growth Option	0.059639	20	0.0801137	6
UTI Contra Fund-Growth-Growth Option	0.024262	8	0.033510	24
Average of all schemes	0.051145		0.070547	
Market	0.034035		0.044328	

Source: Computed from NAV

Table IV: PERFORMANCE OF EQUITY DIVERSIFIED MUTUAL FUND SCHEMES

	Average Daily return	Sharpe ratio	Treynor ratio
Over-Performed	18	24	18
Under-Performed	6	-	6

The above analysis leaves a question as to why some of the funds had outperformed or why some of the funds had not performed as well. It is a question on ability of the fund manager. The abilities that the funds managers are expected to have are security selection, diversification and market timing. In the present paper only the first two aspects i.e. security selection and diversification are analysed. Jensen Differential return measure and Fama’s components of

investment performance are used in the analysis of security selection ability of the fund manager.

APPLICATION OF JENSEN MEASURE TO EVALUATE THE PERFORMANCE OF SELECTED SCHEMES

Jensen has given a different dimension to the portfolio performance. He confined his attention to the problem of evaluating a portfolio manager’s predictive ability of successfully predicting security prices which yield higher returns. The Jensen’s alpha measure is the intercept from the Sharpe-Litner CAPM regression of portfolio excess returns on the market portfolio excess returns over the sample

- b) Compensation for systematic risk $\beta (R_m - R_f)$
- c) Compensation for inadequate diversification $(R_m - R_f) (\sigma_p / \sigma_m - \text{Beta})$
- d) Net superior returns due to selectivity $(R_p - R_f) - (\sigma_p / \sigma_m) (R_m - R_f)$

In the above, second and third measures indicate the impact of market risk (systematic risk) and diversification. By altering systematic and unique risk a portfolio can be reshuffled to get desired level of return. A portfolio manager can earn superior returns by identifying the undervalued securities through constant research and professional acumen. This ability of selectivity can be known with the help of the fourth component. Value for each component of investment performance is computed and presented in

Table : V JENSEN AND FAMA MEASURE

Source: Computed from NAVs

Performance on risk: performance on risk assesses return being generated by fund managers

due to their decision to take risk. They assume risk in the hope of generating extra returns on their portfolios. The Fama model results show that β impact compensation is positive for all the schemes. Thus risk bearing activity of fund managers has resulted in positive return for all the sampled mutual fund schemes.

Performance on Diversification: Performance of fund managers based on compensation for inadequate diversification too was found to be satisfactory. Except for one scheme - IDFC Equity Fund-Regular Plan-Growth that earned a negative return in this respect, the fund managers of the remaining 23 schemes have earned a positive compensation for inadequate diversification.

Performance on Net Selectivity: After accounting for diversification, the residual performance on selectivity is attributed to net selectivity and it will be equal to (or less than) that on selectivity. A positive net selectivity will indicate superior performance. However, in case net selectivity is negative it would mean that the portfolio manager has not justified the loss of diversification. Table 4 shows that fund managers of 22 schemes (92%) appeared to possess

	Jensen Alpha	Rank	Fama's Measure		
			Compensation for systematic risk	Compensation for inadequate diversification	Net superior returns
Birla Sun Life Equity Fund-Plan B(Growth)	0.016700	15	0.038903	0.001674	0.015027
Birla Sun Life Pure Value Fund - Growth Option	0.039977	3	0.029753	0.005490	0.034487
Deutsche Alpha Equity Fund - Growth	-0.000099	23	0.037705	0.001130	-0.001229
Deutsche Investment Opportunity Fund - Growth Option	0.001746	21	0.037170	0.001933	-0.000187
DSP BlackRock Equity Fund - Regular Plan - Growth	0.018446	13	0.034442	0.002654	0.015792
DSP BlackRock Opportunities Fund-Regular Plan - Growth	0.019296	12	0.034892	0.001566	0.017729
Franklin India Flexi Cap Fund-Growth Plan	0.025052	8	0.038152	0.002373	0.022724
Franklin India Opportunities Fund - Growth	0.003009	20	0.040803	0.001123	0.001934
HDFC Capital Builder Fund - Growth Option	0.036846	5	0.032208	0.002066	0.034780
HDFC Equity Fund - Growth Option	0.031473	6	0.038732	0.002469	0.029004
ICICI Prudential Dynamic - Regular Plan -Growth	0.037178	4	0.028594	0.002193	0.034985
ICICI Prudential Top 200 Fund - Regular Plan -Growth	0.016461	16	0.038263	0.000988	0.015473
IDFC Equity Fund-Regular Plan-Growth	0.001541	22	0.043840	-0.000150	-0.000591
IDFC Premier Equity Fund-Regular Plan-Growth	0.056146	1	0.028539	0.006359	0.049787
Kotak Classic Equity Scheme---Growth	0.017794	14	0.035569	0.001794	0.016000
Kotak Opportunities---Growth	0.015066	18	0.038325	0.001583	0.013484
Reliance Equity Opportunities Fund-Growth Plan-Growth Option	0.050939	2	0.034724	0.003195	0.047743
Reliance Growth Fund-Growth Plan-Growth Option	0.016357	17	0.035970	0.003218	0.013140
SBI Magnum Equity Fund- REGULAR PLAN - Growth	0.021966	11	0.037023	0.001540	0.021125
SBI Magnum Multicap Fund - REGULAR PLAN -Growth Option	0.004799	19	0.037221	0.001682	0.003820
Tata Equity Opportunities Fund Plan AGrowth	0.022994	10	0.036020	0.002457	0.020537
Tata Equity P/E Fund Plan A-(Growth Option)	0.024828	9	0.034025	0.003543	0.021285
UTI - Equity Fund-Growth Option	0.0273567	7	0.033887	0.001063	0.026294
UTI Contra Fund-Growth-Growth Option	-0.009295	24	0.038085	0.002302	-0.011596
Average of all schemes	0.020691				

superior stock selection ability as the selectivity (Jensen ratio) was found to be positive. However in terms of net selectivity there were only 20 schemes that showed positive values. Negative values were reported in the case of 4 equity schemes which suggests that these schemes could not justify the loss of diversification. It also indicates that the research ability of these 4 schemes is not satisfactory. Thus 20 schemes which had reported positive net selectivity seem to be more reliable as far as the professional skill of the managers is concerned during the study period. The two top performers with regard to selectivity were IDFC Premier Equity Fund-Regular Plan-Growth and Reliance Equity Opportunities Fund-Growth Plan-Growth Option.

CONCLUSION

The present paper is an attempt to measure the performance of equity diversified mutual fund schemes floated by 12 different mutual funds in India. With an analysis of return and risk of different schemes, the performance has also been analysed based on 4 different risk adjusted performance measures. The study is based on the daily NAV data for 24 mutual fund schemes of 12 different mutual funds in India for the recent five year period i.e. from April 2009 to March 2014. The findings of the empirical investigation carried out in this study are quite encouraging.

In terms of average daily return 18 schemes have outperformed the market. The average daily return of all the schemes (0.075%) was greater than the market return (0.063%). However the difference is not found significant on application of t test at 0.05 level of significance. The findings of the study also revealed that majority of the fund schemes were reasonably diversified. It can be stated that all the 24 schemes had superior performance compared to the benchmark portfolio, 18 schemes had superior performance in terms of treynor ratio. Fund managers of 22 schemes (92%) appeared to possess superior stock selection ability as the selectivity (Jensen ratio) was found to be positive. However in terms of net selectivity (Fama's measure) there were only 20 schemes that showed positive values.

REFERENCES

1. Aman Srivastava and Rakesh Gupta (2010),

“Performance appraisal of equity schemes of Indian Mutual funds”, JIMS –September 2010, pp.4-13.

2. Beehary Nitish, Rojid Sawkut, “Analysing mutual funds performance: The case of Emerging Mauritian Economy”, The Icfai University Journal of Financial Economics, Vol.VII, No.2, 2009, pp.47-57.
3. Deepti Sahoo and Naresh Kumar Sharma, “Performance evaluation of Indian Mutual Fund Industry: A Case Study”.
4. Himanshu Puri and Sakshi saxena(2012), “Construction and evaluation of optimal portfolio using Sharpe's single index model”, Journal of Accounting and Finance, Vol.26, No.1, October 2011- March 2012, pp.109-121.
5. Himanshu Puri(2010), “Performance evaluation of Balanced Mutual Fund Schemes in Indian Scenario”, Paradigm, Vol.XIV, No.2, July-December, 2010, pp. 20-28.
6. Jayadev M (1998), “Performance evaluation of portfolio managers: An empirical evidence on Indian mutual funds”, The IUP Journal of Applied Finance 5, No.2, pp.41-67.
7. Jensen (1967), “The Performance of Mutual Funds in the period 1945-1964”, Journal of Finance, Vol.23, No.2, pp.389-416, 1967.
8. Malik N.S (2008), “Portfolio Management: Country Funds” SCMS Journal of Indian management, January-March, pp.19-35.
9. Musa Essayyad and H.K.Wu (1988) “The performance of U.S. International Mutual Funds”, Quarterly Journal of Business and Economics, Vol.27, No.4, pp.32-46.
10. Rakesh Kumar (2012), “Market timing, selectivity and mutual fund performance: An empirical investigation of selective equity diversified schemes in India” The IUP Journal of Financial Economics, Vol.X, No.1, pp.62-84.
11. Shrinivas R Patil, Prof Prakash Rao K.S

(2011) “An Empirical Study on performance of mutual fund in India” ,Journal of contemporary research in management, April-June 2011, pp.91-103.

12. Sondhi H.J and Jain P.K (2006), “Market Risk and investment performance of equity mutual funds in India: Some Empirical Evidences”, Finance India, Vol.XXIV, No.2, June 2010, pp.43-462.
13. Soumya Guha Deb (2008),,,Performance of Indian Equity Mutual Funds vis-à-vis their Style Benchmarks”, The Icfai Journal of Applied Finance, Vol.14, No.1,pp 49-81.
14. Sushil Kumar Mehta (2010), “State Bank of India Vs. Unit Trust O India: A comparison of Performance of Mutual fund schemes.”, Indian Journal of Finance, February 2010, pp.24-31.
15. Vangapandu Rama Devi and Nooney Lenin Kumar (2010), “Performance evaluation of Equity mutual funds”, JIMS, April-June, pp.22-35.

WEBSITES

www.amfiindia.com
www.moneycontrol.com
www.mutualfundsindia.com
www.rbi.org.in