PORTFOLIO EVALUATION-AN EMPIRICAL ANALYSIS OF EQUITY GROWTH SCHEMES OF SELECTED MUTUAL FUNDS IN INDIA

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Abstract :

The fundamental objective of Indian Financial System is to provide the efficient services to the capital market for its smooth functioning. Mutual fund sector plays a major role in the growth of capital market of India. In this context, close monitoring and evaluation of mutual funds has become essential. Therefore, the present study examinesthe performance of 30 sample schemes of equity funds from growth option considering 15 from large caps and 15 from small & middle caps selected from 3 private mutual fund houses of India for duration of January 2006- June 2016. The paper further examines whether characterisation of schemes pattern significantly affects performance of selected equity schemes or not. Also examines the investment performance of selected mutual fund schemes.It is concluded that equity large cap average return is higher than equity small & mid cap schemes and total risk is found less than benchmark among the selected schemes. There is no further scope for diversification found except in few schemes.

Keywords: *Return, Risk, Sharpe Measure, Treynor Measure, Jensen's Alpha*

Introduction:

Mutual fund investment popularity has increased drastically over the past two decades and playing a significant role in the Indian financial market. Mutual funds are working as a cheaper, quick and transparent investment tool in today volatile and glooming market environment. Mutual fund attracts small investors and helps them to encourage the growth of the economy. Mutual fund sector of India has developed significant growth in terms of AMCs started from Rs. 246.7 millions in 1965 to Rs. 1006 billion in 2002 to 7599.95 billion end of 2012 to 8252 billion INR in the year 2014. So, it is the dire need of the economy to study the performance of the mutual fund sector time to time. The portfolio performance evaluation primarily refers to the determination of how a particular investment portfolio has performed relative to some comparison benchmarks and it is important for the investors and the fund managers to know the relative performance of the portfolio. The performance review will generate and provide information that will help the investor/fund manager to assess any need for rebalancing of the investments.

Review of Literature:

Numerous studies were conducted in the world covering almost all aspects of mutual funds. These include descriptive and empirical studies

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dealing with mutual funds as a whole or covering some of their specific aspects majority of performance appraisal. The review also helps the researcher in identifying research gaps on which we can focus in future.

Friend et al. (1964) conducted a study from 1953-58 considering 152 mutual funds and they found that mutual funds provided a weighted average return by using their own benchmark. Sharpe (1964)made an essential contribution for evaluating mutual funds performance. With the help of risk and return probabilities, he measured capital asset prices and market conditions. Treynor (1965)favoured the use of beta instead of the standard deviation and advocated that to measure portfolio's return, systematic risk is much better than unsystematic risk.Friend et al. (1965) study concluded that, on an average, the fund had not performed better than markets performance from which they selected their securities. Sharpe (1966)using 34 open ended mutual funds for the period 1954-63 and found that the performance of only 11 funds are superior to that of DJIA (index) and concluded that fund performance is clearly inferior to the DJIA. Treynor and Mazuy (1966) found that no investment managers of any of the 57 selected funds had successfully outguessed market and suggested that an investor is completely dependent on general market fluctuations. Jensen (1968) studied 115 mutual funds for 1954-64 and concluded that these funds are not able to estimate security prices well sufficient to outperform. Friend, Blume and Crockett (1970) studied the performance of 86 mutual funds with portfolios and concluded that mutual funds having high turnover performing better than low turnover whereas fund size does not show any impact on the performance. Carlson (1970) reported that sample selected by him has outperformed while using Sharpe ratio than the Dow Jones benchmark. Arditti (1971)found contrary results than Sharpe's that average fund performance could be superior to the performance of DJIA for a long duration. SEC study (1971)concluded that some of the funds performed better than benchmarks but no consistency was found in performance. McDonald (1974) analyzed performance of 123 mutual funds for the duration of 1960-69 in USA using New York Stock Exchange (NYSE) as market index and found that more than half of the funds are providing better return than the market in terms of Treynor's measure, whereas only one-third of the funds performed better in Sharpe's measure than the market index (NYSE). Gupta (1974) evaluated the performance of mutual fund industry for the duration of 1962-72 using both DJIA and S & P 500 as market indices and concluded that all types of funds outperformed than market irrespective of market index choice. Norman (1977) applied neutral risk adjusted performance measure and concluded that approximate 66 per cent of the funds had larger net returns adjusted for systematic risk. Thompson (1978) found that discounted fund shares, adjustment for risk provided superior performance the market during 1940-1975on close-end investment company shares. Guy (1978) concluded that, no trust had outperformed than the London Stock Exchange Index. Reilly (1982) study concluded that the selected sample funds were successful to perform better than market during study. Ariff and Johnson (1990) found that the performance of Singapore unit trusts spread around the market performance with approximately half of the funds performing below the market and another half performing above the market on a

risk-adjusted basis. Cole and IP (1993) present evidence that portfolio managers were unable to earn overall positive excess risk-adjusted returns. Gallagher and Martin (2005) found no statistically significant difference in the return of large and small funds in Australia.

Some of the prominent studies pertaining to the performance evaluation of mutual funds in India are: Jaydev (1996), Dave (1998), Thomas (1998), Kulkarni,(1998), Hudson (1998), Chakrabartiand Rungta (2000), Gupta (2001), Narasimhan and Vijaylakshmi (2001), Turan , Bodla and Mehta (2001), Biswadeep (2002), Chander (2002), Sethu and Baid (2002), Sadhak (2003), and Mishra (2002). The majority of research studies conducted in between 1995 and 2002 have shown that the mutual funds in India could not win the confidence of investors due to their low return, lack of transparency and ambiguity in rules and regulations. Tripathy (2004) evaluated the performance of 31 tax planning schemes in India over the period 1994-95 to 2001-2002. The results indicate that the fund managers under study have not been successful in reaping returns in excess of the market or in ensuring an efficient diversification of portfolio. Sondhi and Jain (2006) examined the performance of 36 mutual funds for the period 1993 to 2002 and concluded that performance of the sample funds remained far from satisfactory in terms of rates of return and risk adjusted returns. Anand (2007) reported that the mutual funds are not able to compensate the investors for the additional risk because they have taken by investing in growth schemes. Chakraborty et al (2008) examined the performance of 40 mutual funds with growth option for the period 2005-2007 using BSE 100 as market portfolio and 364-day treasury bills as risk free rate of return. It concluded that majority of the selected funds are outperforming as compared to market and risk free rate of return. Bodla and Garg (2007), Garg and Soni (2008) found that growth mutual funds have succeeded in providing a fair rate of return to the investors. Deb (2008) showed that the funds have not been able to beat their style benchmarks on the average. Lakshmi et al (2009) revealed that the sample growth schemes did not provide adequate return in terms of systematic risk and unsystematic risk. Jaiswal & Nigam (2010) found that mutual fund's provide better return than any return on risk free securities but unable to outperform the benchmark portfolio in terms of average return. Mehta (2012) found that public sector mutual funds of this category performed brilliantly and maintained the monopoly in index market funds. Dhanda et al (2012) concluded that very few schemes have performed better than benchmark. Kaur (2012) found that all the schemes failed to give reward to variability and only 4 schemes are able to give more reward to volatility than benchmark whereas Prajapati& Patel (2012), Lohana (2013), Sharma (2013) and Garg & Gupta (2014) concluded that most of the mutual funds have given positive return during the study period and succeeded to beat the benchmark and good performance is given by risk adjusted measures. Senapathy& Krishna (2015) found high risk, high return for many schemes and majority of the schemes outperformed the benchmark on risk adjusted measures and they concluded that due to economic conditions mutual fund industry is generating more return than ever before. So, due to wide dispersion in the results of previous studies it is dire need of the hour to study the mutual fund industry to judge the above mentioned gaps in the existing studies.

Objectives of the Study

- To study the financial performance of selected equity mutual funds schemes of private sector in terms of rate of return earned vis-a-vis market return and risk free return.
- To study the total risk, systematic risk and volatility of selected equity mutual funds schemes of private sector.
- To study the financial performance of selected equity mutual fund schemes of private sector in terms of risk-adjusted returns with benchmark and stock selectivity.

Hypotheses of the study

H_1: There is no difference in the performance of selected equity mutual funds schemes with the market portfolio and conventional risk free investments.

H_2: There is no variation in the total risk factor of selected mutual fund schemes and market return and volatility of schemes over the market.

H_3: There is no significant difference in the risk adjusted returns and the benchmark.

Sampling and Database

This study takes returns of a total sample of 30 schemes from different 3 mutual fund houses for the duration of January 2006 to June 2016 which are purely related to open ended schemes (growth category) of private sector and never declared dividend in their lifetime. The daily NAV of the funds were obtained from the AMFI and the other variables are mainly collected from annual reports of the fund companies. National Stock Exchange Index known as Nifty is considered as appropriate benchmark. Further, the daily yields on 91-day treasury bills (T-Bills) are used as a surrogate for the risk-free rate of return. Due care has been taken to take identical time periods and equal sample observations for comparison of funds, performance and benchmark performance.For characterisation of the schemes all the selected schemes are divided in to two categories as:

(1) Funds having average financial assets above 500 crores as large cap schemes

(2) Funds having average financial assets between 100 crores to 500 crores as medium cap schemes and less than 100 crores considered as small cap schemes.

So according to size wise classification, there are 15 schemes considered as large cap schemes and 15 are considered as medium and small cap schemes.

Tools used for Data Analysis

(a) Portfolio return

$R_p = (NAV_t - NAV_{t-1})/ NAV_{t-1}$ Where, R_p = Annual return on a scheme, NAV_t = NAV for current day and NAV_{t-1} = NAV for preceding day.

(b) Total risk of the scheme (σ_p)

$$= \frac{\sqrt{(Rp - AvgRp)2}}{N-1}$$

(c) Market Portfolio (Total risk) (σ_m)

$$= \frac{\sqrt{(Rm - AvgRm)2}}{N-1}$$

(d) $$ß_p = \frac{Cov(R_p, R_m)}{\sigma_m^2}$$

(e) Sharpe's Ratio: $(Rp-Rf)/\sigma_p$

(f) Treynor Ratio: $(Rp-Rf)/\beta_p$

(g) Jensen Measure:

$$a_p = R_p - E(R_p),\ E(R_p) = R_f + B_p (R_m - R_f)$$

To test whether the difference between the performance of a fund and the market is significant or not, t-test at 5% level of significance is applied. ANOVA has been used for testing the difference in performance of a fund across fund characteristics like size wise basis.

Data Analysis and Discussion

Portfolio Measurement using Returns Measures

The return of the portfolio is commensurate with the returns of its individual assets. The return of the portfolio is the average of the returns of its component assets. In this study the returns are measured by comparing the returns of the sample schemes with one another, sample schemes returns with benchmark returns and risk free rate of return. To this end by observing Table-1 reveals some inferences; when we compare the scheme returns of the sample schemes Reliance Pharma Fund-G with the return of 10% ranked top and Kotak Emerging Equity Scheme-G ranked the last with 6% in the category of equity large cap. Sundaram SMILE Fund-G generated the return of 13% and Reliance Banking Fund Inst. Plan-G having the return of -6% stood last. Also 22 of sample schemes generated higher return than average of all schemes return (0.06) and market proxy. When average returns of equity large cap and equity small & mid cap are compared, equity large cap average is higher than equity small & mid cap schemes.

When the sample schemes are compared with their benchmark return; except 7 schemes all other schemes earned more return than benchmark returns. One scheme Reliance Banking Fund Inst. Plan-G provided negative returns to the investors. All sample schemes earned the risk premium which is excess of return over risk free rate of return.

Generally, higher risk investments potentially yield a higher return. If we compare the return and risk of the sample schemes, surprisingly Reliance Pharma Fund- Growth Plan-G having highest return is having low risk and some other funds which are having the low return are having highest risk such as Reliance Diversified Power Sector Fund-G and Sundaram Select Focus Fund-G. Schemes like Kotak Emerging Equity Scheme-G having low return low risk. So, the general statement higher the risk, higher the return doesn't apply on the study.

Table-1
Risk and Return Comparisons of Selected Schemes

SL No	Name of Schemes	Rp	Rank(Category Wise)	Overall Ranking	Rm	Rank(Category Wise)	Overall Ranking	Rf	SDp	Rank(Category Wise)	Overall Ranking	β1	Rank(Category Wise)	Overall Ranking	R_1^2	Rank(Category Wise)	Overall Ranking
	Equity Large Cap Schemes																
1	Kotak 50 Growth	0.07	10	12	0.06	11	15	0.03	1.42	11	23	0.86	4	11	0.97	2	11
2	Reliance Banking Fund-Growth Plan-G	0.09	2	3	0.06	10	14	0.03	1.77	1	5	0.93	1	2	0.82	15	27
3	Reliance Diversified Power Sector Fund G	0.06	13	16	0.06	14	21	0.03	1.53	4	13	0.83	8	15	0.89	12	24
4	Kotak Opportunities - Growth	0.07	8	9	0.06	1	2	0.03	1.52	5	14	0.88	3	9	0.97	6	15
5	Reliance Equity Opportunities Fund Retail Plan G	0.08	4	5	0.06	8	12	0.03	1.41	12	25	0.79	10	18	0.96	7	17
6	Reliance Growth Fund Retail Plan G	0.07	7	8	0.06	4	5	0.03	1.43	9	21	0.79	11	19	0.97	4	13
7	Reliance Pharma Fund-Growth Plan-G	0.10	1	2	0.06	11	15	0.03	1.27	15	30	0.55	15	30	0.88	14	26
8	Reliance Regular Saving Fund- Equity Option- G	0.08	5	6	0.06	11	15	0.03	1.48	7	17	0.83	7	14	0.98	1	10
9	Sundaram SMILE Fund-G	0.08	6	7	0.06	6	9	0.03	1.61	2	8	0.85	5	12	0.89	13	25
10	Sundaram Select Focus Fund-G	0.06	12	15	0.06	2	3	0.03	1.56	3	11	0.90	2	6	0.97	3	12
11	Sundaram Select Midcap-G	0.09	3	4	0.06	3	4	0.03	1.43	10	22	0.73	13	25	0.96	8	18
12	Reliance Tax Saver (ELSS) Fund-G	0.07	9	10	0.06	9	13	0.03	1.40	13	26	0.76	12	23	0.90	11	23
13	Sundaram Tax Saverr Fund-G	0.07	11	13	0.06	7	10	0.03	1.44	8	20	0.82	9	17	0.97	5	14
14	Kotak Tax Saver Fund-G	0.06	14	18	0.06	5	7	0.03	1.49	6	16	0.85	6	13	0.95	9	19
15	Kotak Emerging Equity Scheme – Growth	0.06	15	19	0.06	15	23	0.03	1.37	14	28	0.71	14	27	0.91	10	21

16	Kotak Contra Scheme-G	0.06	5	20	0.06	2	6	0.03	1.36	15	29	0.77	10	21	0.98	7	7
17	Kotak Mid Cap Fund-G(Known as Kotak)	0.06	3	14	0.06	5	15	0.03	1.41	13	24	0.75	12	24	0.93	11	20
18	Reliance Banking Fund-Inst. Plan-G	-0.06	15	30	0.05	10	25	0.04	3.94	1	1	0.88	6	8	0.03	14	29
19	Reliance Diversified Power Sector Fund Inst. Plan G	0.01	14	29	0.03	15	30	0.02	1.68	6	7	0.76	11	22	0.98	8	8
20	Reliance Equity Opportunities Fund Inst. Plan G	0.03	13	28	0.05	11	26	0.03	2.16	3	3	0.73	13	26	0.01	15	30
21	Reliance Growth Fund Inst. Plan G	0.06	6	21	0.05	14	29	0.03	1.47	12	19	0.77	9	20	0.99	3	3
22	Reliance Media and Entertainment Fund G	0.06	4	17	0.06	5	15	0.03	1.54	9	12	0.69	15	29	0.91	12	22
23	Reliance NRI Equity Fund-Growth Plan-G	0.07	2	11	0.06	5	15	0.03	1.50	10	15	0.88	5	7	0.99	2	2
24	Reliance Vision Fund Inst. Plan Growth Plan-G	0.05	10	25	0.05	12	27	0.03	1.48	11	18	0.82	8	16	0.96	10	16
25	Sundaram Balanced Fund - Appreciation	0.06	7	22	0.07	1	1	0.05	1.38	14	27	0.71	14	28	0.99	4	4
26	Sundaram Growth Fund-G	0.05	8	23	0.06	3	8	0.03	1.58	8	10	0.92	2	3	0.99	6	6
27	Sundaram India Leadership Fund-G	0.05	9	24	0.06	9	24	0.04	1.77	5	6	0.92	3	4	0.99	5	5
28	Sundaram Rural India Fund-G	0.04	12	27	0.06	4	10	0.03	2.01	4	4	0.86	7	10	0.80	13	28
29	Sundaram SMILE Fund-Inst. G	0.13	1	1	0.06	8	22	0.08	3.15	2	2	1.21	1	1	0.98	9	9
30	Sundaram Select Focus Fund- Inst. G	0.05	11	26	0.05	13	28	0.02	1.59	7	9	0.91	4	5	1.00	1	1
	Average	0.05			0.06			0.03	1.87			0.84			0.83		
	Overall Average	0.06			0.06			0.03	1.67			0.82			0.88		

To test the hypothesis1, independent t-test was used and the t- value was found greater than the p-value, hence the null hypothesis is rejected. So, after analyzing it, researcher can conclude that there is significant difference between the scheme returns and benchmark returns. (Refer table-2)

Table-2

Independent T-Test used to test the significance between scheme returns and benchmark returns of sample mutual fund schemes

Annualized Returns	N	Mean	Std. Deviation	Std. Error Mean	t-value	p-value (2-tailed)
Av. Return of Schemes	15	.0740	.01242	.00321	2.453	.021
average return of benchmark	15	.0480	.03913	.01010	2.453	.025

Performance Measurement Using Volatility Measures

The relative rate at which the price of a security moves up or down is called volatility. Volatility is found by calculating the annualized standard deviation of daily change in price. At the time of evaluation of the mutual funds and while comparing the funds with that of the other funds of the similar category, the risks should be taken into account. During the measurement of the risk of each of the schemes, the past volatility will be considered as the measure of the risk and as an indicator or pointer for the future risk. According to capital asset pricing model (CAPM) total risk is having two components; Systematic risk (Market risk) and unsystematic risk(unique risk).Standard deviation is the measure of total risk i.e. market risk plus unique risk and beta is the measure of systematic risk. The following inferences can be drawn on *ó, â* and r^2 of the sample schemes from Table-1.

When the comparison is made using ó, in the category of equity large cap schemes; Reliance Banking Fund-Growth Plan-G (1.77) is having highest and Reliance Pharma Fund- Growth Plan-G (1.27) is having the lowest standard deviation i.e. total risk. In the category of equity small and mid cap; Reliance Banking Fund-Inst. Plan-G (3.94) and Kotak Contra Scheme-G (1.36) are having the highest and lowest value of standard deviation.When all schemes are ranked, Reliance Pharma Fund- Growth Plan-G (1.27) and Kotak Contra Scheme-G (1.36) are having low risk. When the averages of both the categories are compared; the average risk of equity small and mid cap schemes are higher than equity large cap schemes. All sample schemes Standard Deviation is lesser than the benchmark total risk.

Beta measures the risk of a fund by measuring the volatility of its past returns in relation to the returns of benchmark. A beta of less than 1 is generally less risky than general market. By

definition the market index beta is considered to be 1. Accord inly A beta of 1.0 indicates that the investment's price will move in lock-step with the market.Also 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 performances of the sample schemes are compared using beta, the $\hat{a}$ of the selected schemes are falling in the range of 1.21 to 0.55 and hence one can infer that all sample schemes are less volatile than the market except one scheme Sundaram SMILE Fund Inst. G having beta 1.21 but these schemes are moving with the market direction. The average beta of equity small & mid cap schemes is higher than equity large cap schemes.

Table-3

One Way ANOVA, Descriptive Statistics

Standard Dev.	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.156	1	1.156	4.208	.050
Within Groups	7.694	28	.275		
Total	8.851	29			
Beta	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.008	1	.008	.657	.425
Within Groups	.355	28	.013		
Total	.364	29			

R-Squared is the value of coefficient of determination (R^2), indicates the degree of diversification. Diversification reduces the unique risk of the portfolio. As discussed above, beta is dependent on correlation of a mutual fund scheme to its benchmark index. So, while considering the beta of any fund, an investor also needs to consider another statistic concept called 'R-squared' that measures the correlation between beta and its benchmark index.

R^2 value ranges from 0-1. According to Morningstar, a mutual fund with R^2 value of 0.85 to 1.00 has a performance record that is closely related to the index and a fund rated 0.70 or less would not perform like the index.

Considering R^2, the value of R Squared of sample schemes is ranging from 1.00 to 0.01 but most of the schemes having R^2 having except only 2 schemes of equity mid & small cap funds are Reliance Banking Fund Inst. Plan-G and Reliance Equity Opportunity Fund Inst. Plan-G. It concludes that there is no further scope of diversification in sample schemes except these schemes. The average value of R squared of equity large cap schemes are little higher than equity small and mid cap schemes.

To test hypothesis 2, one way ANOVA is used, and significant value (P Value) are found above 0.05, hence, Null hypothesis is accepted and concluded that "there is no significant difference between different volatility measures of the sample schemes as across fund characteristics".

Performance Evaluation Using Risk Adjusted Performance Measures:

William F. Sharpe (1966) developed a method of measuring return per unit of risk also called as reward to variability. The Sharpe Ratio uses standard deviation which is 'non directional' meaning it does not differentiate between upside volatility or downside volatility. The Sharpe ratio is a measure of performance of the portfolio compared to the risk taken. Higher the Sharpe ratio better the performance and greater the profits for taking additional risk.

When the Sharpe Ratio is compared, in the equity large cap category; Kotak Tax Saver Fund-G and Reliance Pharma Fund- Growth Plan-G got the lowest and highest ranks respectively. In the equity small and mid cap category; Reliance NRI Equity Fund- Growth Plan-G and Reliance Banking Fund-Inst. Plan-G stood first and last respectively. The average reward to variability of equity large cap is 0.03 and equity small and mid cap is 0.01 which is lower than the previous category. Overall average of the schemes stood at 0.02 which is more than benchmark Sharpe Ratio 0.00. Only Reliance Banking Fund Inst. Plan-G, Reliance Diversified Power Sector Fund Inst. Plan-G and Reliance Equity Opportunities Fund Inst. Plan-G have less value than benchmark ratio. Hence these funds are not performing better and attaining very small amount of reward to variability.

Jack L. Treynor (1965) developed a method which is helpful measure the fund's excess return from each unit of systematic risk. It compares the portfolio risk premium (fund's rate of return minus the risk free rate of return) to the diversifiable risk (Beta).The beta of general market is defined as 1.The higher the Treynor ratio the better is the performance of the scheme. The negative Treynor index ascertains that the scheme did not outshine the market.

Treynor index value is high for Reliance Pharma Fund-Growth Plan-G and low for Kotak Tax Saver Fund-G in equity large cap category. Reliance NRI Equity Fund-Growth Plan-G ranked first and Reliance Banking Fund- Inst. Plan-G ranked last in equity small and midcap category. The average of all schemes is 0.04.When we observe the ranks of reward to variability and reward to volatility the ranks are almost identical in all the sampled schemes which means the total risk and systematic risk is same. Hence, it is concluded that the unique risk of the sample schemes are very negligible.

Table-4

Analysis of Performance Appraisal of Selected Schemes

SL. No	Name of Schemes	SI	Rank(Category Wise)	Overall Ranking	Tm	Rank(Category Wise)	Overall Ranking	Alpha	Rank(Category Wise)	Overall Ranking
	Equity Large Cap Schemes									
1	Kotak 50 Growth	0.03	11	12	0.04	12	16	0.03	11	12
2	Reliance Banking Fund- Growth Plan-G	0.03	5	5	0.07	4	4	0.03	5	5
3	Reliance Diversified Power Sector Fund G	0.02	13	15	0.04	13	17	0.02	13	15
4	Kotak Opportunities - Growth	0.03	10	11	0.05	10	10	0.03	10	11
5	Reliance Equity Opportunities Fund Retail Plan G	0.04	3	3	0.07	3	3	0.04	3	3
6	Reliance Growth Fund Retail Plan G	0.03	8	8	0.06	8	8	0.03	8	8
7	Reliance Pharma Fund-Growth Plan-G	0.05	1	1	0.12	1	1	0.05	1	1
8	Reliance Regular Saving Fund- Equity Option- G	0.04	4	4	0.06	5	5	0.04	4	4
9	Sundaram SMILE Fund-G	0.03	6	6	0.06	6	6	0.03	6	6
10	Sundaram Select Focus Fund-G	0.02	14	18	0.04	14	19	0.02	14	18
11	Sundaram Select Midcap-G	0.04	2	2	0.08	2	2	0.04	2	2
12	Reliance Tax Saver (ELSS) Fund-G	0.03	7	7	0.06	7	7	0.03	7	7
13	Sundaram Tax Saverr Fund-G	0.02	12	13	0.04	11	14	0.02	12	13
14	Kotak Tax Saver Fund-G	0.02	15	19	0.03	15	20	0.02	15	19
15	Kotak Emerging Equity Scheme - Growth	0.03	9	9	0.06	9	9	0.03	9	9
	Average	0.03			0.06			0.03		
	Equity Small & Medium Cap Schemes									
16	Kotak Contra Scheme-G	0.02	3	16	0.04	5	18	0.02	3	16
17	Kotak Mid Cap Fund-G(Known as Kotak)	0.02	2	14	0.04	3	13	0.02	2	14
18	Reliance Banking Fund- Inst. Plan-G	-0.02	15	30	-0.11	15	30	-0.02	15	30
19	Reliance Diversified Power Sector Fund Inst. Plan G	0.00	14	29	-0.01	14	29	0.00	14	29
20	Reliance Equity Opportunities Fund Inst. Plan G	0.00	13	28	-0.01	13	28	0.00	13	28
21	Reliance Growth Fund Inst. Plan G	0.02	6	21	0.03	6	21	0.02	6	21
22	Reliance Media and Entertainment Fund G	0.02	4	17	0.05	2	12	0.02	4	17
23	Reliance NRI Equity Fund-Growth Plan-G	0.03	1	10	0.05	1	11	0.03	1	10
24	Reliance Vision Fund Inst. Plan Growth Plan-G	0.01	9	24	0.02	9	24	0.01	9	24
25	Sundaram Balanced Fund - Appreciation	0.01	11	26	0.01	11	26	0.01	11	26
26	Sundaram Growth Fund-G	0.02	8	23	0.03	8	23	0.02	8	23
27	Sundaram India Leadership Fund-G	0.01	10	25	0.01	10	25	0.01	10	25
28	Sundaram Rural India Fund-G	0.00	12	27	0.01	12	27	0.00	12	27
29	Sundaram SMILE Fund-Inst. G	0.02	5	20	0.04	4	15	0.02	5	20
30	Sundaram Select Focus Fund- Inst. G	0.02	7	22	0.03	7	22	0.02	7	22
	Average	0.01			0.01			0.01		
	Overall Average	0.02			0.04			0.02		
	Benchmark Average	0.00			0.02					

Michael C. Jensen (1968) developed a measure to evaluate portfolio known as Jensen's Alpha. Alpha is a coefficient that is proportional to the excess return of a portfolio over its required return, or its expected return, for its expected risk as measured by its beta. Hence, Alpha is determined by the fundamental values of the company in contrast to beta, which measures the return due to volatility. Jensen's Alpha can be positive, negative or 0. If the Alpha is positive, indicates outperformance of portfolio compared to market and vice versa.

By observing Jensen's Alpha values, under equity large cap category, Reliance Pharma Fund-Growth Plan-G outperformed and Kotak Tax Saver Fund-G underperformed. In equity small and mid cap, reliance NRI Equity Fund-Growth Plan-G outperformed and Reliance Banking Fund- Inst. Plan-G underperformed.

Table-5

One way AnovaDescriptive Statistics of Performance Measure

		Sum of Squares	df	Mean Square	F	Sig.
Sharpe Measure	Between Groups	.014	1	.014	13.718	.001
	Within Groups	.029	28	.001		
	Total	.043	29			
Treynor Measure	Between Groups	.003	1	.003	21.952	.000
	Within Groups	.003	28	.000		
	Total	.006	29			
Jenson Measure	Between Groups	.003	1	.003	21.952	.000
	Within Groups	.003	28	.000		
	Total	.006	29			

To test hypothesis 3, one way ANOVA is used and found significant value is less than 0.05. Hence, Null hypothesis was rejected and concluded that "there is significant difference between different risk adjusted performance measures of the sample schemes as across fund characteristics".

Findings

The sample scheme returns are higher than the benchmarks except 7 schemes. All the schemes earned risk premiumranging from -0.06 to 0.13.Phaniswara Raju B. (2008) evaluated performance of 60 mutual fund schemes of 29 mutual fund companies operating duringthat time and analyzed using risk adjusted performance measures and find out that many selected schemes failed to outperform the market. It is also supporting to the current research finding that there is mismatch of risk return relationshipof some of the sample schemes Reliance NRI Equity Fund-Growth Plan-G of equity small and midcap and Reliance Pharma Fund-Growth Plan-G of equitylarge cap outshined the benchmark from all angles of performance evaluation. Reliance Banking

Fund-Inst. Plan-G, Reliance Diversified Power Sector Fund Inst. Plan-G, Reliance Equity Opportunities Fund Inst. Plan-G and Sundaram Rural India Fund-G are the underperformers among the sample schemes from many views of evaluation, except these schemes all other schemes performed better than the benchmark. It was also found that these schemes belong to equity small and mid cap schemes. The ranks of Sharpe and Treynor are identical to all the sample schemes, it indicates low unique risk. The overallperformance of equity small and mid cap schemes are not satisfactory than equity large cap schemes.

Conclusion

This study analyzed the performance of the selected mutual fund schemes by using the volatility measures, leading performance measures and identified thatexcept one sample scheme, some are performing moderately and some stood as low performers. Hence the portfolio managers who are managing theunderperformed funds should depend on extensive research than their intuition to improve their predictive abilities. They have to use active portfolio strategiesthan passive strategies. Although the mutual fund return is dependent on many factors, being professionally managed funds, fund managers should safeguardthe investor's funds by proper diversification.

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