Performance of Mutual Funds – An Empirical Study with Reference to Reliance Mutual Funds

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Abstract

Indian Stock market plays an imperative role in mounting the Indian economy. Now-a-days it captures the attention of small investors and rural people to invest their hard earnings in the share market. Among a variety of investment alternatives, MFs, seems to be viable for all types of investors and is considered as the safest mode of investment. The present case study is an attempt to understand about the concept of MFs and their performance. As a part of the study, the sample data has been collected from Reliance MFs. The collected information was processed by using the tools like Sharpe Ratio and Treynor Ratio.

Keywords:
Investors, Mutual Funds, Performance, Stock Market

Introduction

A Mutual Fund is a reliance that pools the savings of a number of small investors who can share a universal financial goal. Based on the objective of the scheme the fund manager will invest the collected funds in various securities. The unit holders will share the earned income generated by the schemes on pro-rata basis. Mutual funds are diversified and professionally managed by the professionals at a low cost and they are satisfying the requirements of the common man for investment. Anyone can invest their surplus of as little as a few thousand rupees can invest in MFs. There will be a specific objective and strategy for each and every mutual fund.

Advantages of Mutual Funds:

- Professional Management
- Diversification
- Convenient Administration
- Low Costs
- Liquidity
- Transparency
- Flexibility etc.

Research Methodology

The data has been collected by using both the methods like primary

data and secondary data. But the study is mostly depended upon secondary data. The present study has been carried in the months of April to June, 2011. The collected data was analyzed by using the techniques like Sharpe ratio and Treynor ratio.

For assessing the performance of mutual funds, techniques like Sharpe ratio and treynor ratio has been used.

Sharpe Ratio

This ratio measures the return earned in excess of the risk free rate on a portfolio to the portfolio's total risk as measured by the standard deviation in its return over the measurement period. Nobel Laureate William Sharpe developed the model and the results of it indicate the amount of return earned per unit of risk. The Sharpe ratio is often used to rank the risk-adjusted performance of various portfolios over the same time.

The higher a Sharpe ratio, the better a portfolio's returns have been relative to the amount of investment risk the investor has taken. The major advantage of using the Sharpe ratio over other models (CAPM) is that the Sharpe ratio used the volatility of the portfolio return instead of measuring the volatility against a benchmark (i.e., index). The primary disadvantage of the Sharpe ratio is that it is jest a number and it is meaningless unless you compare it to several other types of portfolios with similar objectives.

$$S = \frac{\text{Return portfolio} - \text{Return of Risk free investment}}{\text{Standard Deviation of Portfolio}}$$

Treynor Ratio

This ratio is similar to the Sharpe Ratio except is used beta instead of standard deviation. It's also known as the Reward to Volatility Ratio, it is the ratio of a fund's average excess return to the fund's beta. It measures the returns earned in excess of those that could have been earned on a risk less investment per unit of market risk assumed. The formula is typically used in ranking Mutual Funds with similar objectives.

$$T = \frac{\text{Return portfolio} - \text{Return of Risk free investment}}{\text{Beta of Portfolio}}$$

Objectives of the Study

1. To cram with reference to the conception and functioning of mutual funds.

2. To know how investors are benefited by investing in mutual funds.

3. To measure the performance of reliance mutual funds by using Sharpe and Treynor ratio.

Results and Discussion

Reliance Regular Saving Fund The chart below shows NAV Value 12th April 2011 to 04 th June 2011 of the fund and Bench Mark Return from 12th April 2011 to 04 th June 2011.

Date	NAV Value	RETURNS % *	Bench Mark BSE 100	RETURNS % *
12/04/2011	20.63		22.66	
13/04/2011	20.73	0.4847309	22.92	1.1473962
14/04/2011	21.33	2.894356	23.51	2.574171
15/04/2011	21.83	2.3441162	22.54	-4.1259038
16/04/2011	21.76	-0.3206596	22.41	-0.5767524
19/04/2011	22.01	1.148897	22.45	0.1784917
20/04/2011	22.27	1.1812812	22.77	1.14253897
21/04/2011	22.26	0.0449034	22.89	0.5270092
22/04/2011	21.26	-4.4923629	22.07	-3.5823503
23/04/2011	21.85	2.7751646	22.19	0.5437245
26/04/2011	22.33	2.1967963	22.59	1.8026137
27/04/2011	22.26	-0.3134796	22.44	-0.6640106

28/04/2011	21.92	-1.5274034	22.18	-1.1586452
29/04/2011	21.56	-1.6423357	21.78	-1.8034265
30/04/2011	22.04	2.226345	22.03	1.147842
03/05/2011	21.28	-3.4482758	21.21	-3.722197
04/05/2011	20.83	-2.1146616	20.69	2.4516737
05/05/2011	21.25	2.0163226	20.92	1.1116481
06/05/2011	20.93	-1.5058823	20.53	-1.8642447
07/05/2011	21.13	0.9555661	20.67	0.6819288
10/05/2011	21.51	1.7983909	20.86	0.9192065
11/05/2011	21.34	-0.79033	20.69	-0.8149568
12/05/2011	21.81	2.2024367	21.19	2.4166263
13/05/2011	21.87	0.2751031	21.44	1.1798017
14/05/2011	21.37	-2.2862368	21.02	-1.9589552
17/05/2011	21.59	1.0294805	21.37	1.6650808
18/05/2011	21.81	1.0189902	21.48	0.5147402
19/05/2011	22.09	1.2838147	21.74	1.2104283
20/05/2011	21.05	-4.7080126	20.55	-5.473781
21/05/2011	21.29	1.1401425	20.53	-0.0973236
24/05/2011	20.68	-2.8651949	20.03	-2.4354603
25/05/2011	20.74	0.2901353	20.09	0.2995506
26/05/2011	20.29	-2.1697203	19.68	-2.0408163
27/05/2011	19.91	-1.8728437	19.42	-1.3211382
28/05/2011	20.65	3.7167252	20.06	3.2955715
31/05/2011	21.28	3.0508474	20.82	3.788634
01/06/2011	21.28	0	20.74	-0.3842459

02/06/2011	21.83	2.5845864	21.39	3.1340405
03/06/2011	22.37	2.4736601	21.91	2.4310425
04/06/2011	22.21	-0.7152436	21.71	-0.9128251

Risk Measurement Tools:

	NAV Per Unit	Bench Mark Return
Average	0.212060076	-0.087019698
Standard Deviation	2.150526845	2.152293208

Sharpe Ratio: Sharpe Ratio = (Fund return in - risk free return)/ Standard Deviation

return)/ Standard Deviation

	NAV	Bench Mark
Average Rate of Return	0.212060076	-0.087019698
Rate of Risk Free Return	0.00890256	0.00890256
Sharpe Ratio	0.094468719	-0.044567467

Sharpe Ratio = (Fund return in - risk free return)/ Standard Deviation

Beta (β):

Beta (β) = (Co-Var (benchmark, fund)/ variance (bench mark)

Co-Var (benchmark, fund)	3.802530125
Var (Bench mark)	4.632366052

Var (Bench mark)	4.632366052
Beta (β)	0.820861323

Treynor Ratio:

Treynor Ratio = (Average Return − Risk free Rate) / Beta (β)

Average Rate of Return	0.212060076	-0.087019698
Rate of Risk Free Return	0.00890256	0.00890256
Beta (β)	0.820861323	0.820861323
Treynor Ratio	0.247493104	0.116855618

Alpha (α):

Alpha (α) = [(Fund Return − Risk free Return) − Expected Return *]

Expected Return* = [Beta (β) * (Bench mark Return − Risk free Return)]

= [0.820861323*(-0.087019698 - 0.00890256)

=-0.078738871

Alpha (α) = [(0.212060076 - 0.00890256) – (-0.078738871)]

= 0.281896388

Return*= (Previous NAV- Present NAV) / Previous NAV.

The Sharpe Measure is uses the Standard Deviation of Return as the Measures of Risk where as Treynor measure employs Beta (β) (systematic Risk) the Sharpe measure implicitly evaluates portfolio manager on the basis of return performance but also taking to account how well portfolio is diversified during the particular period. Portfolio is perfectly diversified (does not contain the unsystematic Risk), the two measures would give identical rakings. If it is purely diversified it is possible to have high ranking on basis of Treynor Measure and low ranking of Sharpe Measure.

From the above analysis we can infer that Port folio is not diversified properly this is because of the deviation in Trenyor and Sharpe Measures rankings. Since Sharpe Measures uses Standard Deviation for the measure must of Risk. While Trenyor measure use Beta (β) i.e., systematic risk for the measurement these deviations are due to uncontrollable Risk Factors in the Market during period.

Sharpe Ratio = **0.094468719**

Treynor Ratio = **0.247493104**

According to above Sharpe Ratio on Return and Treynor Ratio on Return in Reliance Regular Saving Fund Equity and Growth option is poorly generated because of Sharpe Measure and Treynor Measure is not identical and lot of variance during the period.

Reliance Equity Fund - Growth Plan:

The chart below shows NAV Value 12th April 2011 to 04th June 2011 of the fund and Bench

Mark Return from 12th April 2011 to 04th June 2011.

Date	NAV Value	RETURNS % *	Bench Mark BSE 100	RETURNS % *
12/04/2011	12.7639		22.66	
13/04/2011	12.8445	0.631468438	22.92	1.1473962
14/04/2011	13.0391	1.51504535	23.51	2.574171
15/04/2011	13.1686	0.993166706	22.54	-4.1259038
16/04/2011	13.1598	-0.066825631	22.41	-0.5767524
19/04/2011	13.2594	0.756850408	22.45	0.1784917
20/04/2011	13.4546	1.472163145	22.77	1.14253897
21/04/2011	13.4049	-0.369390394	22.89	0.5270092
22/04/2011	12.9819	-3.155562518	22.07	-3.5823503
23/04/2011	13.2857	2.340181329	22.19	0.5437245
26/04/2011	13.5412	1.923120347	22.59	1.8026137
27/04/2011	13.4457	-0.705255073	22.44	-0.6640106
28/04/2011	13.3083	-1.021888039	22.18	-1.1586452
29/04/2011	13.1408	-1.258613046	21.78	-1.8034265
30/04/2011	13.3403	1.51817241	22.03	1.147842
03/05/2011	12.9452	-2.96170251	21.21	-3.722197
04/05/2011	12.6846	-2.013101381	20.69	2.4516737
05/05/2011	12.9169	1.831354556	20.92	1.1116481
06/05/2011	12.7179	-1.540617331	20.53	-1.8642447
07/05/2011	12.7533	0.27834784	20.67	0.6819288
10/05/2011	12.9141	1.260850133	20.86	0.9192065
11/05/2011	12.8492	-0.502551475	20.69	-0.8149568
12/05/2011	13.1657	2.46318837	21.19	2.4166263
13/05/2011	13.2634	0.742079798	21.44	1.1798017

14/05/2011	12.9842	-2.10504094	21.02	-1.9589552
17/05/2011	13.0794	0.733198811	21.37	1.6650808
18/05/2011	13.1788	0.759973699	21.48	0.5147402
19/05/2011	13.3152	1.034995599	21.74	1.2104283
20/05/2011	12.6695	-4.849345109	20.55	-5.473781
21/05/2011	12.6934	0.188642014	20.53	-0.0973236
24/05/2011	12.3407	-2.778609356	20.03	-2.4354603
25/05/2011	12.4161	0.610986411	20.09	0.2995506
26/05/2011	12.1869	-1.845990287	19.68	-2.0408163
27/05/2011	12.082	-0.860760325	19.42	-1.3211382
28/05/2011	12.4186	2.785962589	20.06	3.2955715
31/05/2011	12.7618	2.763596541	20.82	3.788634
01/06/2011	12.8109	0.384741964	20.74	-0.3842459
02/06/2011	13.1564	2.696922152	21.39	3.1340405
03/06/2011	13.4244	2.037031407	21.91	2.4310425
04/06/2011	13.4153	-0.067787015	21.71	-0.9128251

Risk Measurement Tools:

	NAV Per Unit	Bench Mark Return
Average	0.122342708	-0.087019698
Standard Deviation	1.808297354	2.152293208

Sharpe Ratio = (Fund return in - risk free return)/ Standard Deviation

	NAV	Bench Mark
Average Rate of Return	0.122342708	-0.087019698
Rate of Risk Free Return	0.00890256	0.00890256
Sharpe Ratio	0.062733127	-0.044567467

Sharpe Ratio = (Fund return in - risk free return)/ Standard Deviation

Beta (β):

Beta (β) = (Co-Var (benchmark, fund)/ variance (bench mark)

Co-Var (benchmark, fund)	3.399853491
Var (Bench mark)	4.632366052
Beta (β)	0.73393455

Treynor Ratio:

Treynor Ratio = (Average Return − Risk free Rate) / Beta (β)

Average Rate of Return	0.122342708	-0.087019698
Rate of Risk Free Return	0.00890256	0.00890256
Beta (β)	0.73393455	0.820861323
Treynor Ratio	0.154564393	0.116855618

Alpha (α) = [(Fund Return – Risk free Return) – Expected Return *]

Expected Return* = [Beta (β) * (Bench mark Return –

= [0.73393455*(-0.087019698 - 0.00890256)

= -0.070400659

Alpha (α) = [(0.122342708 - 0.00890256) – - 0.070400659)]

= 0.183840807

Return*= (Previous NAV- Present NAV) / Previous NAV.

The Sharpe Measure is uses the Standard Deviation of Return as the Measures of Risk where as Treynor measure employs Beta (β) (systematic Risk) the Sharpe measure implicitly evaluates portfolio manager on the basis of return performance but also taking to account how well portfolio is diversified during the particular period. Portfolio is perfectly diversified (does not contain the unsystematic Risk), the two measures would give identical rakings. If it is purely diversified it is possible to have high ranking on basis of Treynor Measure and low ranking of Sharpe Measure.

From the above analysis we can in infer that Port folio is not diversified properly this is because of the deviation in Trenyor and Sharpe Measures rankings. Since Sharpe Measures uses Standard Deviation for the measure must of Risk. While Trenyor measure use Beta (β) i.e., systematic risk for the measurement these deviations are due to uncontrollable Risk Factors in the Market during period.

Sharpe Ratio = 0.062733127

Treynor Ratio = 0.154564393

According to above Sharpe Ratio on Return and Treynor Ratio on Return in Reliance Equity Fund Growth Plan are poorly generated because of Sharpe Measure and Treynor Measure is not identical and lot of variance during the period.

Reliance Equity Opportunities Fund - Growth Plan:

The chart below shows NAV Value 12th April 2011 to 04 th June 2011 of the fund and Bench Mark Return from 12th April 2011 to 04 th June 2011.

Date	NAV Value	RETURNS % *	Bench Mark BSE 100	RETURNS % *
12/04/2011	19.6749		22.66	
13/04/2011	19.7002	0.128590234	22.92	1.1473962
14/04/2011	20.0628	1.840590451	23.51	2.574171
15/04/2011	20.2602	0.983910521	22.54	-4.1259038
16/04/2011	20.4095	0.736912765	22.41	-0.5767524
19/04/2011	20.4677	0.285161322	22.45	0.1784917
20/04/2011	21.0187	2.692046493	22.77	1.14253897
21/04/2011	20.9774	-0.196491695	22.89	0.5270092
22/04/2011	20.3021	-3.219178735	22.07	-3.5823503
23/04/2011	20.8218	2.559833712	22.19	0.5437245
26/04/2011	21.0697	1.190579105	22.59	1.8026137

27/04/2011	21.0026	-0.318466803	22.44	-0.6640106
28/04/2011	20.7508	-1.198899184	22.18	-1.1586452
29/04/2011	20.5044	-1.187424099	21.78	-1.8034265
30/04/2011	20.673	0.822262539	22.03	1.147842
03/05/2011	20.1315	-2.619358584	21.21	-3.722197
04/05/2011	19.7166	-2.060949259	20.69	2.4516737
05/05/2011	19.9408	1.13711289	20.92	1.1116481
06/05/2011	19.7577	-0.918217925	20.53	-1.8642447
07/05/2011	19.7003	-0.290519646	20.67	0.6819288
10/05/2011	19.9606	1.321299676	20.86	0.9192065
11/05/2011	20.0458	0.426840877	20.69	-0.8149568
12/05/2011	20.5268	2.399505133	21.19	2.4166263
13/05/2011	20.567	0.195841534	21.44	1.1798017
14/05/2011	20.1576	-1.990567414	21.02	-1.9589552
17/05/2011	20.3688	1.047743779	21.37	1.6650808
18/05/2011	20.4036	0.170849535	21.48	0.5147402
19/05/2011	20.631	1.114509204	21.74	1.2104283
20/05/2011	19.6751	-4.633318792	20.55	-5.473781
21/05/2011	19.7129	0.192121006	20.53	-0.0973236
24/05/2011	19.2176	-2.512567912	20.03	-2.4354603
25/05/2011	19.2424	0.129048372	20.09	0.2995506
26/05/2011	18.9116	-1.719120276	19.68	-2.0408163
27/05/2011	18.7524	-0.841811375	19.42	-1.3211382
28/05/2011	19.3499	3.186258826	20.06	3.2955715

31/05/2011	19.8748	2.712675518	20.82	3.788634
01/06/2011	19.7984	-0.384406384	20.74	-0.3842459
02/06/2011	20.2983	2.524951511	21.39	3.1340405
03/06/2011	21.0431	3.669272796	21.91	2.4310425
04/06/2011	20.8811	-0.769848549	21.71	-0.9128251

Risk Measurement Tools:

	NAV Per Unit	Bench Mark Return
Average	0.135273823	-0.087019698
Standard Deviation	1.839117068	2.152293208

Sharpe Ratio = (Fund return in - risk free return)/ Standard Deviation

	NAV	Bench Mark
Average Rate of Return	0.135273823	-0.087019698
Rate of Risk Free Return	0.00890256	0.00890256
Sharpe Ratio	0.068713007	-0.044567467

Sharpe Ratio = (Fund return in - risk free return)/ Standard Deviation

Beta (β):

Beta (β) = (Co-Var (benchmark, fund)/ variance (bench mark)

Co-Var (benchmark, fund)	3.350194436
Var (Bench mark)	4.632366052
Beta (β)	0.72321453

Treynor Ratio:

Treynor Ratio = (Average Return − Risk free Rate) / Beta (β)

Average Rate of Return	0.135273823	-0.087019698
Rate of Risk Free Return	0.00890256	0.00890256
Beta (β)	0.72321453	0.820861323
Treynor Ratio	0.174735515	0.116855618

Alpha (α) = [(Fund Return − Risk free Return) − Expected Return *]

Expected Return* = [Beta (β) * (Bench mark Return − Risk free Return)]

= [0.72321453*(-0.087019698 - 0.00890256)

= -0.06937237

Alpha (α) = [(0.135273823- 0.00890256) – (-0.06937237)]

= 0.195743634

Return*= (Previous NAV- Present NAV) / Previous NAV.

The Sharpe Measure is uses the Standard Deviation of Return as the Measures of Risk where as Treynor measure employs Beta (β) (systematic Risk) the Sharpe measure implicitly evaluates portfolio manager on the basis of return performance but also taking to account how well portfolio is diversified during the particular period. Portfolio is perfectly diversified (does not contain the unsystematic Risk), the two measures would give identical rakings. If it is purely diversified it is possible to have high ranking on basis of Treynor Measure and low ranking of Sharpe Measure.

From the above analysis we can in infer that Port polio is not diversified properly this is because of the deviation in Trenyor and Sharpe Measures rankings. Since Sharpe Measures uses Standard Deviation for the measure must of Risk. While Trenyor measure use Beta (β) i.e., systematic risk for the measurement these deviations are due to uncontrollable Risk Factors in the Market during period.

Sharpe Ratio = 0.068713007

Treynor Ratio = 0.174735515

According to above Sharpe Ratio on Return and Treynor Ratio on Return in Reliance Equity Opportunities Fund Growth Plan are poorly generated because of Sharpe Measure and Treynor Measure is not identical and there is a lot of variance during the period.

Reliance Income Fund- Growth Plan

The chart below shows NAV Value 12th April 2011 to 04 th June 2011 of the fund and Bench Mark Return from 12th April 2011 to 04 th June 2011.

Date	NAV Value	RETURNS % *	Bench Mark BSE 100	RETURNS % *
12/04/2011	21.63		22.66	
13/04/2011	22.01	1.148897	22.92	1.1473962
14/04/2011	22.27	1.1812812	23.51	2.574171
15/04/2011	22.26	0.0449034	22.54	-4.1259038
16/04/2011	21.26	-4.4923629	22.41	-0.5767524
19/04/2011	21.85	2.7751646	22.45	0.1784917
20/04/2011	20.73	0.4847309	22.77	1.14253897
21/04/2011	21.33	2.894356	22.89	0.5270092
22/04/2011	21.83	2.3441162	22.07	-3.5823503
23/04/2011	21.76	-0.3206596	22.19	0.5437245
26/04/2011	22.27	1.1812812	22.59	1.8026137
27/04/2011	22.26	0.0449034	22.44	-0.6640106
28/04/2011	21.26	-4.4923629	22.18	-1.1586452
29/04/2011	21.85	2.7751646	21.78	-1.8034265
30/04/2011	22.33	2.1967963	22.03	1.147842
03/05/2011	22.26	-0.3134796	21.21	-3.722197
04/05/2011	21.92	-1.5274034	20.69	2.4516737
05/05/2011	21.56	-1.6423357	20.92	1.1116481
06/05/2011	22.04	2.226345	20.53	-1.8642447
07/05/2011	21.28	-3.4482758	20.67	0.6819288

10/05/2011	20.83	-2.1146616	20.86	0.9192065
11/05/2011	21.25	2.0163226	20.69	-0.8149568
12/05/2011	20.93	-1.5058823	21.19	2.4166263
13/05/2011	21.13	0.9555661	21.44	1.1798017
14/05/2011	21.51	1.7983909	21.02	-1.9589552
17/05/2011	21.34	-0.79033	21.37	1.6650808
18/05/2011	21.81	2.2024367	21.48	0.5147402
19/05/2011	21.87	0.2751031	21.74	1.2104283
20/05/2011	21.37	-2.2862368	20.55	-5.473781
21/05/2011	21.59	1.0294805	20.53	-0.0973236
24/05/2011	21.81	1.0189902	20.03	-2.4354603
25/05/2011	22.09	1.2838147	20.09	0.2995506
26/05/2011	21.05	-4.7080126	19.68	-2.0408163
27/05/2011	21.29	1.1401425	19.42	-1.3211382
28/05/2011	20.65	3.7167252	20.06	3.2955715
31/05/2011	21.28	3.0508474	20.82	3.788634
01/06/2011	21.28	0	20.74	-0.3842459
02/06/2011	21.83	2.5845864	21.39	3.1340405
03/06/2011	22.37	2.4736601	21.91	2.4310425
04/06/2011	22.21	-0.7152436	21.71	-0.9128251

Risk Measurement Tools:

	NAV Per Unit	Bench Mark Return
Average	0.197653265	-0.076817689
Standard Deviation	2.063216490	2.097854621

Sharpe Ratio:

Sharpe Ratio = (Fund return in - risk free return)/ Standard Deviation

	NAV	Bench Mark
Average Rate of Return	0.197653265	-0.076817689
Rate of Risk Free Return	0.006810247	0.006810247
Sharpe Ratio	0.074359862	-0.031457857

Sharpe Ratio = (Fund return in - risk free return)/ Standard Deviation

Beta (β):

Beta (β) = (Co-Var (benchmark, fund)/ variance (bench mark)

Co-Var (benchmark, fund)	3.802530125
Var (Bench mark)	4.632366052
Beta (β)	0.820861323

Treynor Ratio:

Treynor Ratio = (Average Return − Risk free Rate) / Beta (β)

Average Rate of Return	0.197653265	-0.076817689
Rate of Risk Free Return	0.006810247	0.006810247
Beta (β)	0.074359862	0.031457857
Treynor Ratio	0.278823374	0.038268104

Alpha (α):

Alpha (α) = [(Fund Return − Risk free Return) − Expected Return *]

Expected Return* = [Beta (β) * (Bench mark Return − Risk free Return)]

= [**0.074359862*(-0.076817689- 0.006810247) = -0.083627936**

Alpha (α) = [**(0.197653265- 0.006810247) – (-0.083627936)]**

=0.274470954

Return*= (Previous NAV- Present NAV) / Previous NAV.

The Sharpe Measure is uses the Standard Deviation of Return as the Measures of Risk where as Treynor measure employs Beta (β) (systematic Risk) the Sharpe measure implicitly evaluates portfolio manager on the basis of return performance but also taking to account how well portfolio is diversified during the particular period. Portfolio is perfectly diversified (does not contain the unsystematic Risk), the two measures would give identical rakings. If it is purely diversified it is possible to have high ranking on basis of Treynor Measure and low ranking of Sharpe Measure.

From the above analysis we can infer that Portfolio is not diversified properly this is because of the deviation in Trenyor and Sharpe Measures rankings. Since Sharpe Measures uses Standard Deviation for the measure must of Risk. While Trenyor measure use Beta (β) i.e., systematic risk for the measurement these deviations are due to uncontrollable Risk Factors in the Market during period.

Sharpe Ratio = **0.074359862**

Treynor Ratio = **0.278823374**

According to above Sharpe Ratio on Return and Treynor Ratio on Return in Reliance Regular Saving Fund Equity and Growth option is poorly generated because of Sharpe Measure and Treynor Measure is not identical and lot of variance during the period.

Reliance Liquidity Fund- Growth Plan:

The chart below shows NAV Value 12th April 2011 to 04 th June 2011 of the fund and Bench

Mark Return from 12th April 2011 to 04 th June 2011.

Date	NAV Value	RETURNS % *	Bench Mark BSE 100	RETURNS % *
12/04/2011	12.7639		22.66	
13/04/2011	12.1869	-1.845990287	22.92	1.1473962
14/04/2011	12.082	-0.860760325	23.51	2.574171
15/04/2011	12.4186	2.785962589	22.54	-4.1259038
16/04/2011	12.7618	2.763596541	22.41	-0.5767524
19/04/2011	12.8109	0.384741964	22.45	0.1784917
20/04/2011	12.9842	-2.10504094	22.77	1.14253897
21/04/2011	13.0794	0.733198811	22.89	0.5270092
22/04/2011	13.1788	0.759973699	22.07	-3.5823503
23/04/2011	13.3152	1.034995599	22.19	0.5437245
26/04/2011	12.6695	-4.849345109	22.59	1.8026137
27/04/2011	12.6934	0.188642014	22.44	-0.6640106
28/04/2011	12.3407	-2.778609356	22.18	-1.1586452
29/04/2011	13.1408	-1.258613046	21.78	-1.8034265
30/04/2011	13.3403	1.51817241	22.03	1.147842
03/05/2011	12.9452	-2.96170251	21.21	-3.722197
04/05/2011	12.6846	-2.013101381	20.69	2.4516737
05/05/2011	12.9169	1.831354556	20.92	1.1116481

05/05/2011	12.9169	1.831354556	20.92	1.1116481
06/05/2011	12.7179	-1.540617331	20.53	-1.8642447
07/05/2011	12.7533	0.27834784	20.67	0.6819288
10/05/2011	12.9141	1.260850133	20.86	0.9192065
11/05/2011	12.8492	-0.502551475	20.69	-0.8149568
12/05/2011	13.1657	2.46318837	21.19	2.4166263
13/05/2011	13.2634	0.742079798	21.44	1.1798017
14/05/2011	12.9842	-2.10504094	21.02	-1.9589552
17/05/2011	13.4049	-0.369390394	21.37	1.6650808
18/05/2011	12.9819	-3.155562518	21.48	0.5147402
19/05/2011	13.2857	2.340181329	21.74	1.2104283
20/05/2011	13.5412	1.923120347	20.55	-5.473781
21/05/2011	13.4457	-0.705255073	20.53	-0.0973236
24/05/2011	13.3083	-1.021888039	20.03	-2.4354603
25/05/2011	12.4161	0.610986411	20.09	0.2995506
26/05/2011	12.1869	-1.845990287	19.68	-2.0408163
27/05/2011	12.082	-0.860760325	19.42	-1.3211382
28/05/2011	12.8445	0.631468438	20.06	3.2955715
31/05/2011	13.0391	1.51504535	20.82	3.788634
01/06/2011	13.1686	0.993166706	20.74	-0.3842459
02/06/2011	13.1598	-0.066825631	21.39	3.1340405
03/06/2011	13.2594	0.756850408	21.91	2.4310425
04/06/2011	13.4546	1.472163145	21.71	-0.9128251

Risk Measurement Tools:

	NAV Per Unit	Bench Mark Return
Average	0.116586524	-0.096389652
Standard Deviation	1.706594765	2.1079370986

Sharpe Ratio:

Sharpe Ratio = (Fund return in - risk free return)/ Standard Deviation

	NAV	Bench Mark
Average Rate of Return	0.116586524	-0.096389652
Rate of Risk Free Return	0.009675324	0.009675324
Sharpe Ratio	0.073622238	-0.035768597

Sharpe Ratio = (Fund return in - risk free return)/ Standard Deviation

Beta (β):

Beta (β) = (Co-Var (benchmark, fund)/ variance (bench mark)

Co-Var (benchmark, fund)	3.417986552
Var (Bench mark)	4.533897437
Beta (β)	0.743870527

Treynor Ratio:

Average Rate of Return	0.116586524	-0.096389652
Rate of Risk Free Return	0.009675324	0.009675324
Beta (β)	0.743870527	0.820861323

Alpha (α) = [(Fund Return − Risk free Return) − Expected Return *]

Expected Return* = [Beta (β) * (Bench mark Return - Risk free Return)]

= [**0.74387052*(-0.096389652- 0.009675324)]**

= -0.078898608

Alpha (α) = [**(0.116586524- 0.009675324) – (-0.078898608)]**

= 0.185809808

Return*= (Previous NAV- Present NAV) / Previous NAV.

The Sharpe Measure uses the Standard Deviation of Return as the Measures of Risk where as Treynor measure employs Beta (β) (systematic Risk) the Sharpe measure implicitly evaluates portfolio manager on the basis of return performance but also taking to account how well portfolio is diversified during the particular period. Portfolio is perfectly diversified (does not contain the unsystematic Risk), the two measures would give identical rakings. If it is purely diversified it is possible to have high ranking on basis of Treynor Measure and low ranking of Sharpe Measure.

From the above analysis we can infer that portfolio is not diversified properly this is because of the deviation in Trenyor and Sharpe Measures rankings. Since Sharpe Measures uses Standard Deviation for the measure must of Risk. While Trenyor measure use Beta (β) i.e., systematic risk for the measurement these deviations are due to uncontrollable Risk Factors in the Market during period.

Sharpe Ratio = **0.073622238**

Treynor Ratio = **0.176894389**

According to above Sharpe Ratio on Return and Treynor Ratio on Return in Reliance Equity Fund Growth Plan are poorly generated because of Sharpe Measure and Treynor Measure is not identical and there is lot of variance during the period.

Findings

- Reliance Regular Saving Fund is an open-ended scheme with the objective of capital appreciation and generating consistent returns.
- The NAV Value of Reliance Equity Opportunities Fund Growth Plan is highly fluctuated during the period.
- Unsystematic risk during the period is high due to which the return of Reliance Equity Fund Growth Option is fluctuated.
- Reliance Equity fund the Risk is very high and return from the fund is very low during the period.
- Company focused mainly on Reliance Regular Saving Fund Equity Growth plan.
- Reliance has launched a new fund by name Reliance Infrastructure Fund.
- Majority of investors in other funds are transferred to Reliance Regular Saving Fund Equity Growth option during that period.

Suggestions

- The company has to concentrate on promotion of all Schemes.
- The company has to adopt more flexible methods to improve overall performance of the scheme.
- Reliance Equity Opportunities Fund Growth Plan can be productive if they revise the sector allocation.
- The company must concentrate on Auto Sector and Commodities Sector on its sector allocation.
- They should concentrate on Reliance Regular Saving Fund increase the funds of sector allocation in infrastructure fund.

References

M.Ranganadham: Investment Analysis And Portfolio Management, Pearson Education, New Delhi, 2009

Preeti Singh: Investment Management, Himalaya Publishing House, New Delhi,2009

Prasanna Chandra, Projects: Planning, Analysis, Financing Implementations And Review, 5/e TMH, New Delhi, 2003

Richard Pike & Bill Neale: Corporate Finance And Investment- Decisions And Strategies, 2/e, PHI, New Delhi, 2002

Zvi Bodie & Mohanthy: Investments, TMH, New Delhi, 2010

Websites

www.Reliancemf.Com

www.Amfiindia.Com

www.Bseindia.Com

www.Mutualfundsindia.Com