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Performance Analysis of Infrastructure Sector Mutual Fund Schemes in India - A Study

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ABSTRACT

The Indian financial system is based on four basic components viz., Financial Market, Financial Institutions, Financial Service, and Financial Instruments. All play important role for the smooth activities of transfer and allocation of funds. All the four components are inter connected. The overall development of an economy is mainly depends upon the development of financial and economic situation prevailing in that country. After the liberalization of economic policies, there has been a rapid growth of capital market, money market and financial services including merchant banking, leasing and venture capital. Consistent with this evolution of the financial sector, the mutual fund industry has also come to occupy an important place. Mutual fund is a mechanism by which, the savings of large numbers of small investors are pooled together and collective investment is made with the objective of attractive yield and capital appreciation, holding the safety and liquidity as prime parameters. The present study is analyzing the performance of some select infrastructure sector fund schemes in terms of risk and return.

KEYWORDS: Mutual Fund, Sector Funds, Risk Return Relationship and Sharpe ratio.

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INTRODUCTION

A mutual fund is just the connecting bridge or a financial intermediary that allows a group of investors to pool their money together with a predetermined investment objective. The mutual fund will have a fund manager who is responsible for investing the gathered money into specific securities (stocks or bonds). An investor while investing in mutual funds buys units or portions of the mutual fund and becomes a shareholder or unit holder of the fund. Mutual funds are considered as one of the best available investments compared to others as they are very cost efficient and also easy to invest in, thus by pooling money together in a mutual fund, investors can purchase stocks or bonds with much lower trading costs than if they tried to do it on their own. But the biggest advantage to mutual funds is diversification, by minimizing risk and maximizing returns.

REVIEW OF LITERATURE

Tiwari and Vijh[1] 2004 analyzed sector fund cash flow and find that volatility does not significantly impact sector fund performance in spite of the fact that these fund have higher cash flow volatility. The study revealed that future sector index returns are not related to past values of aggregate cash flow to the corresponding sector funds, which suggests that sector fund investors cannot pick the winning sectors of the stock market.

Abhay Kaushik, Anita Pennathur and Scott Barnhart[2] 2010 in his research found that sector funds reveal positive timing ability during recessions and negative timing ability during expansions when using the S&P 500 as the benchmark, but this timing ability disappears when sector specific benchmarks are used. As a whole, sector funds exhibit significant negative timing ability across all stages of the business cycle. When using the more appropriate industry specific benchmarks, only the utility sector demonstrates significant timing ability over both stages of the business cycle.

Hada[3] 2013 has focused to evaluate the performance of mutual fund schemes with their benchmark in respect of their risk and return. The study concluded that the major share of mutual fund has been captured by income schemes, growth schemes and liquid schemes. HDFC, UTI, Franklin Templeton, SBI and Reliance have outperformed in case of growth schemes. In the balanced schemes, HDFC, Franklin Templeton, ICICI Prudential, UTI and SBI have performed well.

Shivangi Agarwal and Nawazish Mirza[4] 2017 assess the performance of Indian mutual fund schemes for the period from 2013 to 2016, comprises 18 diversified equity shares, 9 tax savings schemes, 17 large capital funds, 16 long term gilt, 8 long term income, 8 short term income, 11 small-mid capital funds and 12 ultra-short term funds. It was found that 90 percent of the schemes have performed better than their bench marks and yielded adequate average market return and the value at risk for equity based mutual funds are higher than that of debt mutual fund schemes.

STATEMENT OF THE PROBLEM

Mutual fund investment is most popular among small investors, who mobilize their savings for investment in the capital market. In fact, they want to get the maximum returns on their investment by taking lesser risk in such invested securities. Hence this study is undertaken to do a comparative evaluation of the performance of Sector mutual fund schemes to fulfill the objectives of the investors.

OBJECTIVES OF THE STUDY

The main objectives of the study are

1. To compare the performance of Infrastructure sector mutual fund schemes with benchmark index (NIFTY 50).
2. To examine the relative performance among infrastructure sector mutual fund schemes by applying risk adjusted fund performance measures such as Rate of return, Standard deviation and Sharpe Index models for excess return comparison.

METHOD OF DATA COLLECTION

Secondary data has been collected from AMFI website, websites of the companies and from the fact sheet of these schemes. The study covered the period from 1-4-2015 to 31-3-2018 and post office savings return treated as risk free return. NIFTY 50 returns are treated as bench mark return.

TOOL USED FOR ANALYSIS:

1. RATE OF RETURN METHOD

Mean returns are calculated by averaging the monthly returns over the relevant time period. Net Asset Value return is the change in the net asset value of mutual fund over a given time period.

$$\text{NAV return} = \frac{\text{Current value of units} - \text{previous value of units}}{\text{Previous value of units}} \times 100$$

2. STANDARD DEVIATION

The risk is calculated by determining the standard deviation and the formula to calculate standard deviation is

$$\sigma = \sqrt{\frac{1}{N}\sum_{i=1}^{N}(x_i - \mu)^2}$$

3. SHARPE RATIO

It is also called Sharpe's reward to variability ratio. It measures the excess return per unit of total risk as measured by standard deviation. It is computed by the following formula:

Sharpe Ratio = (Rx – Rf) / StdDev Rx

Where:

Rx = Expected portfolio return

Rf = Risk free rate of return

Std Dev Rx = Standard deviation of portfolio return / volatility

RESULTS AND DISCUSSION

Table 1 describes that, all the mutual fund schemes generate negative returns in the year 2015-2016. In the remaining two periods all the schemes produce positive returns. BOI AXA Manufacturing & Infrastructure Fund, L&T Infrastructure Fund, Sahara Infrastructure Fund, IDFC Infrastructure Fund, Sundaram Infrastructure Advantage Fund, Kotak Mahindra Infrastructure Fund schemes were performed well than bench mark returns. Aditya Birla Sun Life Infrastructure Fund, Taurus Infrastructure Fund, SBI Infrastructure Fund, Tata Infrastructure Fund, ICICI Prudential Infrastructure Fund, Invesco India Infrastructure Fund schemes were generated good returns but lower than bench market indices. UTI - Infrastructure Fund, Quant Infrastructure Fund, LIC MF Infrastructure Fund, and HDFC Infrastructure Fund schemes showed poor performance in the market.

Table 2 indicates that in the accounting period 2015-2016 all the mutual fund schemes have high risk in terms of standard deviation. When compared all the mutual funds with bench mark portfolio they have higher risk for the study period.

Table 3 describes that all the infrastructure mutual fund schemes have negative sharpe ratio in the year 2015-2016. BOI AXA Manufacturing & Infrastructure Fund, L&T Infrastructure Fund, IDFC Infrastructure Fund, Taurus Infrastructure Fund schemes were over performed than market returns. And the rest of the schemes were underperformed in terms of excess return than bench mark returns.

Table 1: Monthly Average Return of Infrastructure Sector Growth Plan Schemes

Mutual Fund Schemes	2015-2016	2016-2017	2017-2018	Average	Rank
Aditya Birla Sun Life Infrastructure Fund	-1.44	2.027	0.87	0.485667	8
IDFC Infrastructure Fund	-1.78	2.306	1.372	0.634247	4
Canara Robe co Infrastructure Fund	-1.23	1.62	0.726	0.372	11
Kotak Mahindra Infrastructure Fund	-0.98	1.979	0.755	0.5856	6
Sundaram Infrastructure Advantage Fund	-1.11	1.825	1.11	0.60888	5
Sahara Infrastructure Fund	-0.76	2.325	0.395	0.653433	3
BOI AXA Manufacturing & Infrastructure Fund	-1.3	1.877	1.908	0.8289	1
UTI - Infrastructure Fund	-1.84	2.075	0.533	0.255219	15
SBI Infrastructure Fund	-1.16	1.794	0.818	0.484607	9
Tata Infrastructure Fund	-1.25	1.892	0.643	0.429783	10
ICICI Prudential Infrastructure Fund	-1.83	2.096	0.764	0.342663	12
Quant Infrastructure Fund	-1.61	1.276	1.174	0.279053	14
L&T Infrastructure Fund	-1.14	2.271	1.322	0.818383	2
LIC MF Infrastructure Fund	-1.96	1.334	0.964	0.112763	16
Invesco India Infrastructure Fund	-1.78	1.583	1.123	0.30744	13
Taurus Infrastructure Fund	-1.77	2.076	1.335	0.548053	7
HDFC Infrastructure Fund	-1.96	1.551	0.475	0.021467	17
Nifty 50	-0.65	1.458	0.873	0.560277	

Source: www.amfiindia.com

Table 2: Standard Deviation of Infrastructure Sector Growth Plan Schemes

Mutual Fund Schemes	2015-2016	2016-2017	2017-2018	Average	Rank
Aditya Birla Sun Life Infrastructure Fund	5.099	4.168	3.869	4.378467	11
IDFC Infrastructure Fund	5.527	3.129	4.335	4.330433	10
Canara Robe co Infrastructure Fund	5.506	3.186	4.115	4.269033	9
Kotak Mahindra Infrastructure Fund	4.767	3.28	3.843	3.9634	4
Sundaram Infrastructure Advantage Fund	5.651	3.666	3.977	4.431197	12
Sahara Infrastructure Fund	5.902	3.684	4.111	4.565233	16
BOI AXA Manufacturing & Infrastructure Fund	5.095	3.273	3.434	3.934037	3
UTI - Infrastructure Fund	5.96	3.592	3.647	4.399901	13
SBI Infrastructure Fund	4.88	3.446	4.173	4.166317	5
Tata Infrastructure Fund	5.568	3.517	3.7	4.26181	8
ICICI Prudential Infrastructure Fund	5.768	3.011	3.787	4.1884	6
Quant Infrastructure Fund	4.942	4	4.539	4.49354	15
L&T Infrastructure Fund	6.14	3.476	3.669	4.428177	14
LIC MF Infrastructure Fund	5.651	3.225	3.777	4.21771	7
Invesco India Infrastructure Fund	4.714	2.739	3.89	3.781033	2
Taurus Infrastructure Fund	5.415	3.079	3.485	3.992993	1
HDFC Infrastructure Fund	7.112	3.355	6.219	5.562	17
Nifty 50	4.726	2.703	3.455	3.628093	

Source: www.amfiindia.com

Table 3: Sharpe Ratio of Infrastructure Sector Growth Plan Schemes

Mutual Fund Schemes	2015-2016	2016-2017	2017-2018	Average	Rank
Aditya Birla Sun Life Infrastructure Fund	-0.29017	0.476692	0.21445	0.133659	14
IDFC Infrastructure Fund	-0.32838	0.724231	0.307222	0.234357	3
Canara Robe co Infrastructure Fund	-0.23074	0.49592	0.166792	0.143991	12
Kotak Mahindra Infrastructure Fund	-0.21337	0.591177	0.186007	0.187939	6
Sundaram Infrastructure Advantage Fund	-0.20339	0.487056	0.269157	0.184273	7
Sahara Infrastructure Fund	-0.13542	0.620181	0.086364	0.190375	5
BOI AXA Manufacturing & Infrastructure Fund	-0.26268	0.561286	0.543975	0.280859	1
UTI - Infrastructure Fund	-0.31582	0.566529	0.13514	0.128615	13
SBI Infrastructure Fund	-0.24533	0.508895	0.186297	0.149953	11
Tata Infrastructure Fund	-0.23092	0.526599	0.162976	0.152884	9
ICICI Prudential Infrastructure Fund	-0.32466	0.682975	0.191236	0.183182	8
Quant Infrastructure Fund	-0.33451	0.308998	0.249864	0.074784	17
L&T Infrastructure Fund	-0.19173	0.641836	0.349384	0.266497	2
LIC MF Infrastructure Fund	-0.35384	0.401299	0.24458	0.097347	15
Invesco India Infrastructure Fund	-0.38688	0.563593	0.278347	0.151688	10
Taurus Infrastructure Fund	-0.33359	0.661083	0.371563	0.233019	4
HDFC Infrastructure Fund	-0.28147	0.450349	0.069947	0.079609	16
Nifty 50	-0.14599	0.5248	0.240926	0.206578	

Source: www.amfiindia.com

CONCLUSION

The present study analyzed the performance of 18 infrastructure sector mutual fund schemes for the period from 1st April 2015 to 31st March 2018. The study reveals that all the mutual fund schemes have produced poor performance in terms of return, volatility and excess return in the year 2015-2016. Due to various global cues Indian stock market was crashed during the period 2015-2016. In this period net asset value of all mutual fund schemes fall down as negative return with high volatility. But the market was boom up from 1st April 2016 to till now. BOI AXA Manufacturing & Infrastructure Fund, L&T Infrastructure Fund, IDFC Infrastructure Fund were produced good performance on the basis of average return, volatility and excess return. UTI - Infrastructure Fund, Quant Infrastructure Fund, LIC MF Infrastructure Fund, and HDFC Infrastructure Fund schemes have given poor performance in all aspects. If they are properly diversified it will yield good return in future. The Asset Management Companies should take necessary steps to improve the net asset value of the schemes.

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