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

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Abstract
The Indian economic gadget is especially primarily based totally on four simple additives inclusive of Financial Market, Financial Institutions, Financial Service and Financial Instruments. All are play important role for smooth activities for the transfer of the funds and allocation of the funds. All the four components are inter connected. The overall development of an Indian economy is mainly based upon the development of financial and economic situation prevailing in that country. After the liberalization in 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 polled together and collective instrument is made with the objective of attractive yield and capital appreciation, holding the safety and liquidity as prime parameters. The present study was made to analyze the performance of some select infrastructure sector fund schemes in terms of risk and return.
Keywords: *mutual fund, sector funds, risk return relationship, sharpe ratio.*

A mutual fund is simply the connecting bridge or economic middleman that permits a collection of buyers to pool their cash collectively with a predetermined funding goal. The mutual fund can have a fund supervisor who's liable for making an investment the amassed cash into unique securities (shares or bonds). An investor whilst making an investment in mutual price range buys devices or quantities of the mutual fund and hence on making an investment turns into a shareholder or unit holder of the fund. Mutual price range are taken into consideration as one of the high-quality to be had investments in comparison to others as they're very value green and additionally clean to make investments in, hence via way of means of pooling cash collectively in a mutual fund, buyers should buy shares or bonds with a great deal decrease buying and selling expenses than in the event that they attempted to do it on their own. But the most important gain to mutual price range is diversification, via way of means of minimizing threat & maximizing returns.

Review of Literature

Tiwari and Vijh (2004) analyzed region fund coins' waft and discover that volatility does now no longer notably effect region fund overall performance despite the reality that those funds have better coins' waft volatility.

Abhay Kaushik (2010) in his studies discovered that Sector price range screen fine timing cap potential for the duration of recessions and terrible timing cap potential for the duration of expansions whilst the use of the S&P 500 because the benchmark, however this timing cap potential disappears whilst region unique benchmarks are used. As a whole, region price range show off considerable terrible timing cap potential throughout all degrees of the commercial enterprise cycle. When the use of the greater suitable enterprise unique benchmarks, simplest the software region demonstrates considerable timing cap potential over each degrees of the commercial enterprise cycle.

Hada (2013) has targeted to assess the overall performance of mutual fund schemes with their benchmark in recognize in their threat & go back. The examine concluded that the most important proportion of mutual fund has been captured via way of means of earnings schemes, increase schemes and liquid schemes. HDFC, UTI, Franklin Templeton, SBI and Reliance have outperformed in case of increase schemes. In Balanced schemes, HDFC, Franklin Templeton, ICICI Prudential, UTI and SBI have done well.

Shivangi Agarwal and Nawazish Mirza (2017) verify the overall performance of Indian mutual fund schemes for the length 2013-2016, contains 18 various fairness shares, nine tax financial savings schemes, 17 huge capital price range, sixteen long time gilt, eight long time earnings, eight brief time period earnings, eleven small-mid capital price range and 12 ultra-brief time period price range. It has been discovered that ninety percentage of the schemes have done higher than their bench marks and yields good enough common marketplace go back and the fee at threat for fairness primarily based totally mutual price range are better 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 of to fulfill the objectives of the investors.

Objectives of the Study

The main objective of the study is

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 measure using Rate of return, Standard deviation and Sharpe Index models

Method of Data Collection

Secondary data has been collected from AMFI website, websites of the companies and from the fact sheet of the 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 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

StdDev 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 outperformed 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 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 produced poor performance in the market.

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

Table 3 illustrates 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 for the period 1st April 2015 to 31st March 2018

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 Robeco 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 for the period 1st April 2015 to 31st March 2018

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 Robeco 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 for the period April 1st April 2015 to 31st March 2018

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 Robeco 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

This present study analyzed the performance of 18 infrastructure sector mutual fund schemes for the period 1-4-2015 to 31-3-2018. The study reveals that all the mutual fund schemes were got 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 all mutual fund schemes net asset value are falls down which leads negative return with high volatility. In the year 1-4-2016 to 31-3-2018 the market was boom up. 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 give poor performance in all manner. If they are properly diversified it will yield good return in future.

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