

PERFORMANCE EVALUATION OF SELECT SECTOR MUTUAL FUND SCHEMES IN INDIA –A STUDY

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ABSTRACT

Mutual fund is one of the most popular financial investment tools. The mutual fund industry is the rising and fast growing segment of the Indian Financial Market. It provides a variety of schemes to suit the needs and risk return profile of different categories of investors. Mutual fund is an investment instrument that pools together the funds from investors by issuing units and investing the funds so raised in securities in accordance with the objectives disclosed in the offer document. In this complex scenario, this study of Performance evaluation would help the investors to choose the best schemes available and will also help the AUM's in better portfolio construction and can rectify the problems of underperforming schemes. The objective of the study is to evaluate the performance of select Private sector schemes on the basis of returns and comparison with their bench marks and also to appraise the performance of different category of funds using risk adjusted measures as suggested by Sharpe, Treynor and Jensen. The present study is analyzing the performance of select Private Sector mutual fund schemes in terms of risk and return.

Keywords: Public Sector Funds, Sharpe ratio, Risk Return Relationship, Net Asset Value (NAV).

Introduction

India economy stood among the fastest growing economy in the world. The present saving shell channelized in the mutual fund industry as it proposals a variety of investment avenues. Mutual Fund industry is becoming a good option of investment in Indian Financial Market.

It is quite popular among small and household investors, who mobilize their savings for investment in the capital market. India has a majority of middle class families who want to yield the maximum returns on their investment by taking the less risk and also save tax on their income. UTI is one of the largest and oldest mutual funds in the country. Later on the other private sector companies and financial institutions adopted this mechanism and started to mobilize fund through the concept of mutual fund. The mutual fund industry is very sound and growth oriented in the next future based on the continuous developmental actions in this sector.

Objectives of the Study

- To identify the relationship between Net Asset Value and market portfolio return
- To evaluate the risk and return relationship of market volatility of the selected Infrastructure Sector mutual funds.
- To analyze the performance of selected Infrastructure sector mutualfunds by applying the measures of Sharpe ratio, Treynor ratio, Beta and Jensen's alpha.

Review of literature

Amporn Soongswang (2009) studied 138 open ended equity mutual funds managed by 17 asset management companies in Thailand during the period 2002-2007. When the mutual funds were measured using Treynor ratio, Sharp ratio and Jensen's alpha, showed that performance of Thai open ended mutual funds significantly outperform the market. However, by using the Data Envelopment analysis (DEA) technique, the results suggested that for 3 month time period of investment only, the open ended equity mutual fund significantly outperform the market.

Abhay Kaushik(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.

Shivangi Agarwal and Nawazish Mirza(2017) assess the performance of Indian mutual fund schemes for the period 2013-2016, 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 has been found that 90 percent of the schemes have performed better than their bench marks and yields adequate average market return and the value at risk for equity based mutual funds are higher than that of debt mutual fund schemes.

RESEARCH METHODOLOGY

Data Collection

The present study is based on secondary data which is collected from various sources like published annual reports of the sponsoring agencies, online bulletins, journals, books, magazines, brochures, newspapers and other published and online material. The daily data for the mentioned schemes have been collected from the website www.amfi.com. The data has been collected from 1-4-2006 to 31-3-2020.

The study is purely based on secondary data which are collected through the official website of Association of Mutual Funds in India, National Stock Exchange and Bombay Stock Exchange. To evaluate the performance of Private Sector mutual funds Aditya Birla Sun Life Infrastructure fund, HDFC Infrastructure fund, Kotak Infrastructure and Economic Reform fund, ICICI Prudential Infrastructure fund and Reliance Power & Infra fund were selected.

Measures of Mutual Fund Performance

There are various measures to evaluate the performance of mutual funds. In this study, the following measures have been applied.

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.

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

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:

$$\text{Sharpe Ratio} = (R_p - R_f) / \text{SD of } R_p$$

4. Treyno ratio

It measures the excess returns the fund earns over and above the risk free rate of returns with an adjustment to the volatility in the market measure in the form of Beta coefficient of the portfolio. It is calculated as follows

$$T_p = (R_p - R_f) / \beta_p$$

5. Jensen's Alpha

It is a measure of absolute performance on a risk-adjusted basis. It represents the average return a scheme would earn over and above the returns predicted by the Capital Asset Pricing Model (CAPM) given the portfolio's beta and the mean market return.

$$\text{Alpha } (\alpha) = (R_p - R_f) - \beta (R_m - R_f)$$

6. Beta

It measures the volatility or systematic risk of a security with comparison to the market as a whole. Beta is calculated as,

$$\text{Beta} = \text{Covariance (Stock, Index)} / \text{Variance (Index)}$$

Results of the study

From the following table it is evident that all the funds produced positive returns. HDFC infrastructure fund has high standard deviation and all the funds have high level of volatility than benchmark funds. In terms of Sharpe ratio all the funds have no excess return while the funds were possessed negative values. The Treynor ratios were negative for all the funds. HDFC fund secured high value of beta as one in the study period. All the selected Private Sector infrastructure funds obtained negative value of alpha during the period. According to overall analysis, the performance of ICICI infrastructure fund was good while all the funds underperformed than market portfolio.

Table 1: Descriptive Statistics of Infrastructure Sector Growth Plan Schemes for the period April 1st 2006 to 31st March 2020

Mutual Fund Schemes	Average Return (%)	Standard Deviation	Sharpe ratio

Aditya Birla Sun Life Infrastructure Fund	0.4196	7.13095	-0.61514
HDFC Infrastructure Fund	0.0679	7.65501	-0.79315
ICICI Prudential Infrastructure Fund	0.5791	6.64698	-0.57017
Kotak Infrastructure and Economic Reform Fund	0.4442	6.02073	-0.61397
Reliance Power & Infra Fund	0.5379	7.33609	-0.51094
NIFTY 50		5.743242	-0.61134
	0.6192		

Source: Computed

Table 2: Descriptive Statistics of Infrastructure Sector Growth Plan Schemes for the period April 1st2006 to 31st March 2020

Mutual Fund Schemes	Treynor Ratio	Beta	Alpha
Aditya Birla Sun Life Infrastructure Fund	-5.6741	0.963048	-0.55855
HDFC Infrastructure Fund	-7.5576	1.076481	-0.37324
ICICI Prudential Infrastructure Fund	-6.4698	0.847677	-0.59651
Kotak Infrastructure and Economic Reform Fund	-6.8958	0.797331	-0.9434
Reliance Power & Infra Fund	-5.4178	0.964177	-0.39942

Source: Computed

Conclusion

The aim of the study is focused to evaluate the risk and return of infrastructure sector mutual funds on the basis of average monthly returns compared to benchmark returns. The results of the study showed that the returns of the funds were minimum and hence it is found that the performance of the mutual funds during this period is not satisfactory. These selected funds have high value of assets but their performance were worse due to Covid issues, market

condition, economical issues etc. To maintain stable return the fund managers have made proper diversification of portfolio.

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