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Dr. M. SELVAM, M.Com., Ph.D.,

Bharathidasan University,

India

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PERFORMANCE ANALYSIS OF EXCHANGE TRADED FUNDS IN INDIA

J. Gayathri
Lecturer in Commerce and Financial Studies, Bharathidasan University, Tiruchirappalli, Tamil Nadu, India
and
P. Bhuvaneswari
PhD Research Scholar in Commerce and Financial Studies, Bharathidasan University, Tiruchirappalli, Tamil Nadu, India.

Abstract

Mutual Funds are the diversified portfolio investment vehicle that collects the funds of investors and invests them in different types of financial instruments. Exchange Traded Funds are an innovation in traditional mutual funds and they represent a basket of securities that are traded on an exchange. There are a large number of previous studies to analyse the performance of mutual funds but the performance of ETFs were not covered. Hence this paper attempts to examine the performance of ETFs listed in NSE in the last three years i.e., 2005 to 2007 by comparing the returns and risk of ETFs with the returns and risk of the index. For this purpose, Sharpe ratio and Treynor ratio were used. The results show that general NIFTY BeES provided better returns than other option based funds like Junior BeES, Liquid BeES and Bank BeES during the selected study period.

1. Introduction

Every one wants to save their money after spending on their needs and wants. These savings become investment if these funds are employed in the capital market for productive purpose. The man of small means and limited knowledge finds it difficult to make sound and profitable decisions while investing in shares due to complexities of the interrelated forces influencing share prices. These investments some times also suffer losses because of the fluctuation of marketing movements which can be avoided by diversification. Mutual funds are one of the diversified portfolio investment vehicles and it is a type of intermediary that collects the funds of investors and invests them in different types of financial instruments. In India, mutual fund industry was monopolized by the UTI in 1964. During 1987, the Government of India permitted public sector banks and development financial institutions to enter the mutual funds industry. A new era in the mutual funds industry began with the permission granted to the private sector in 1993.

The mutual funds industry currently manages assets worth Rs. 43, 10,575 crores as on March 2008. This is a testimony to its increasing acceptance among the investing public. A wide variety of schemes, tax benefits, improved transparency, improved fund performance and investor services, increased participation by institutional and retail investors, new channels of distribution and strict as well as proactive regulatory regime are some of the factors that contributed to the growth of mutual funds industry. This industry has developed a range of products to suit just about every need of investors in different segments. One such product is Exchange Traded Funds.

2. Exchange Traded Funds

Exchange traded funds, popularly known as ETFs, provide exposure to a selected index. Exchange traded funds are an innovation to traditional mutual funds with a hybrid of open ended mutual funds and individual stocks. Exchange Traded Funds represent a basket of securities that are traded on an exchange. It is similar to an index fund which primarily invests in the securities of companies that are included

in selected index. Unlike listed close ended funds, which trade at substantial premium or more frequently at discounts to NAV, ETFs are structured in a manner which allows the creation of new units and redemption of outstanding units directly with the fund, thereby ensuring that ETFs traded close to their actual NAVs.

3. Review of Literature

Ramesh Chander (2002), in his study entitled "An Evolution of Portfolio Performance Components across Fund Characteristics", attempted to assess the nature and adequacy of portfolio performance by analyzing the various activities carried out by portfolio managers such as market timing, stock selectivity, diversification and risk bearing in the returns generation process.

A study entitled "Risk-Adjusted Performance Evaluation of Indian Mutual Funds Schemes," by **Muthappan** and **Damotharan (2006),** analyzed the performance of risk and returns of mutual fund during the study period from 1995 to 2000. Based on the empirical investigation, the study concluded that the Indian mutual funds were properly diversified during the study period.

Sondhi and **Jain (2006),** in their study entitled "Can Growth Stocks be identified for Investment? - A Study of Equity Selectivity Abilities of Fund Managers in India", examined the returns and excess returns (called Jensen's alpha) of all equity mutual funds in the sample which have been in operation for more than three years.

All the above studies focused on the overall portfolio performance of all funds returns. But this study proposes to focus on the performance evaluation of Exchange Traded Funds, which is the need of the hour.

4. Statement of the Problem

In the recent past, financial markets have undergone revolutionary changes. These markets have witnessed a sort of anarchy, particularly due to market transaction, market expansion and changes in the games of market players. Capital market is frequently forced to work in the direction desired by vested interest groups and not according to economic fundamentals. An investment decision in such a situation becomes a risky proposition. The investors in such cases can have the benefit of portfolio from the professional investment management if they invest in mutual funds. Mutual funds industry is on the verge of expanding its product line by investing in Exchange Traded Funds. It is tradable securities which derived their value from a pre defined basket of securities which are involved in an index. These funds derive their value from the market portfolio and these funds are also managed by Asset Management Companies. Hence this paper examined the performance of ETFs by comparing the returns and risk of ETFs with the returns and risk of the index.

5. Need of the Study

A particular mutual fund is known by its investment objective, risk profile and liquidity content. There is wide innovation in the different categories. ETF is an innovative fund in mutual fund industry, tradable on a stock exchange. It invests in the stocks of an index in approximately the same proportion as held in the index. It is a hybrid financial product, a cross between a stock and a mutual fund. This paper analyzes the performance of ETF in the recent past.

6. Objectives of the Study

This study proposes to analyse the performance of ETFs in India. The study has been designed to achieve the following objectives:

(1) To analyze the returns of Exchange Traded Funds

(2) To compare the risk adjusted returns of ETFs with respective stock indices

(3) To rank the five ETFs selected for the study

7. Scope of the Study

The study is limited to a select sample of ETFs which were listed in NSE in India during the period of 2005 to 2007. It is planned to compare the performance of ETFs and respective stock indices during the study period.

8. Methodology of the Study

(a) Period of the Study

The present study has analyzed the performance of ETFs in the last three years. The data were collected for the period from January 1, 2005 to December 31, 2007.

(b) Source of Data

Generally, ETF's Net Asset Values are listed in stock exchanges on all trading days. The sample ETFs and benchmark indices data were collected from NSE India website. RBI 91 days Treasury Bills, interest rates were taken as a risk free rate.

(c) Sample Selection

In India, the first ETF was launched by the Bench Mark Asset Management Company in December 2001, known as Nifty BeES, followed by Junior BeES, UTI Sunder, Liquid BeES and SPICE. NSE has started listing ETFs in the exchange from 2002. Out of the 9 funds which have been listed now, only 5 funds have been listed more than three years. Hence the five funds, namely, **BANKBEES, LIQUIDBEES, UTISUNDER, NIFTYBEES,** and **JUNIORBEES** were selected for analysis. Of these, four were from Benchmark and one was from UTI AMC.

(d) Tools used for Evaluating Performance

The performance of sample Exchange Traded Funds has been evaluated by using the following performance measures: (1) Returns, (2) Sharpe Ratio, and (3) Treynor Ratio. A brief description of these measures is given below.

(1) Returns:

$$\mathbf{r_p} = \left[\frac{NAV_t - NAV_{t-1}}{NAV_{t-1}} * 100 \right]$$

Where,

$\mathbf{r_p}$ = Portfolio returns

$\mathbf{NAV_t}$ = Net Asset Value in period of **t**

$\mathbf{NAV_{t-1}}$ = Net Asset Value in period of **t-1**

(2) Sharpe Ratio:

Sharpe's reward to variability measures the excess returns per unit of total risk as measured by standard deviation. Thus, Sharpe Ratio for different mutual fund schemes as well as benchmark portfolios has been estimated by using the following equation.

$$\mathbf{S_p} = \frac{\overline{r_p} - r_f}{\sigma_p}$$

Where,

Sp =Sharpe Performance Measure

$\overline{\mathbf{r_p}}$ =Average returns of Portfolio **p**

$\mathbf{r_f}$ = Risk free rate

σ_p = Total risk of $\mathbf{r_p}$

(3) Treynor Ratio:

The reward to volatility ratio measures the excess returns per unit of market (systematic) risk. The Treynor ratios for the sample funds have been worked out by using

$$\mathbf{Tp} = \frac{r_p - r_f}{\beta_p}$$

Where,

Tp = Treynor Performance Measure

$\mathbf{r_p}$ = Portfolio returns

$\mathbf{r_f}$ = Risk free rate

β_p = Market risk of $\mathbf{r_p}$

9. Analysis of the Study

As mentioned earlier, tools like Rate of Returns, Sharpe Ratio and Treynor Ratio were used to measure the performance of Exchange Traded Funds and to compare it with the market index. The returns of selected sample Exchange Traded Funds during the study period from 1 January 2005 to 31 December 2007 is given in the Table-I.

Performance of Exchange Traded Funds

The rate of returns values show that LIQUID BeES has the lowest returns and UTI SUNDER has the highest returns. The performance of an investment can be judged by comparing the returns and risk from the investment. Standard Deviation shows the portfolio risks of selected samples. Out of the samples selected, UTI SUNDER has the highest risk and LIQUID BEES has the lowest risk. This confirms the general rule that high risk rewards higher returns.

The values of Sharpe Ratio performance measure indicate that NIFTY BEES has the highest returns (0.06225668) and BANK BEES has the lowest and also negative returns (-0.73921539). Sharpe's measure analyses the returns per total risk comprising of systematic and unsystematic risk.

Treynor's ratio is more than the Sharpe's ratio since it considers only the systematic risk which is unavoidable whereas unsystematic risk can be avoided by proper diversification. The results of Treynor's ratio indicate that UTI SUNDER has the highest returns and BANK BEES has the lowest returns.

Considering the results of three tools used, it can be concluded that UTI SUNDER and NIFTY BEES recorded better returns than the other sample. BANK BEES has the lowest returns, as per the Sharpe and negative returns on the basis of Treynor ratio.

Ranking of Exchange Traded Funds

Since Sharpe ratio and Treynor ratio provide different results, an attempt has been made to rank the selected sample Exchange Traded Funds. The ranking is given in Table-II

UTI SUNDER was ranked first in returns as per Treynor's ratio. It obtained third rank under Sharpe's ratio. The reverse is the case for NIFTY BEES. It obtained first rank as per Sharpe's ratio and third rank as per Treynor's ratio. Under both the measures, namely, Sharpe and Treynor, the position of other three sample Exchange Traded Funds remained the same. JUNIOR BEES, LIQUID BEES and BANK BEES obtained the rank of 2, 4 and 5 respectively.

10. Conclusion

The aim of the mutual fund industry is to provide better returns and also to reduce the risk by using diversified portfolio investment methods. The Exchange Traded Funds are the innovative funds in the mutual funds industry. Those fund's portfolios are focused on the shares for a particular stock exchange. The results of the present study show that general portfolio based funds like UTISUNDER and NIFTYBEES provided better returns than the other option based funds like JuniorBEES, LiquidBEES and BankBEES during the selected study period.

11. Scope for Further Research

The present study raises a number of interesting issues for further research. This study analysed the performance of ETFs for three years. Since the ETFs emerged in India in 2001, the study period of ETFs can be increased in future. The pricing efficiency by analyzing the discount and premium of ETFs can be studied in further research. The present study covered the NSE listed ETFs whereas in further research, both BSE and NSE listed ETFs can also be covered. The present study used

measures such as returns, Sharpe's ratio and Treynor's ratio. In further research, other performance measures such as VaR analysis can also be used.

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Table-1
Performance of Exchange Traded Funds from 01/01/05 to 31/12/07

Name of the Fund	Rate of Return	STDV	Beta	Sharpe Ratio	Treynor Ratio
BANKBEES	0.00204947	0.02502448	0.85986233	**-0.73921539**	**-0.02151330**
LIQUIDBEES	0.00000001	0.00159653	**-0.00000453**	0.00000839	**-0.00295585**
UTISUNDER	0.00209795	0.04228158	0.90349409	0.04961851	0.00232204
NIFTYBEES	0.00140958	0.01527887	0.87023101	0.09225668	0.00161977
JUNIORBEES	0.00151482	0.02181636	0.86686314	0.06943512	0.00174747

Source : NSE Website

Table-2
Ranking of Exchange Traded Funds from 01/01/05 to 31/12/07

Name of the Fund	Sharpe Ratio	Rank	Treynor Ratio	Rank
BANKBEES	-0.73921539	5	-0.02151330	5
LIQUIDBEES	0.00000839	4	-0.00295585	4
UTISUNDER	0.04961851	3	0.00232204	**1**
NIFTYBEES	0.09225668	**1**	0.00161977	3
JUNIORBEES	0.06943512	2	0.00174747	2

Source : NSE Website