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MUTUAL FUND PERFORMANCE: AN ANALYSIS OF INDEX FUNDS

SHIVANI INDER
RESEARCH SCHOLAR
DEPARTMENT OF COMMERCE
PUNJABI UNIVERSITY
PATIALA

DR. SHIKHA VOHRA
ASST. PROFESSOR
DEPARTMENT OF BBA
DEV SAMAJ COLLEGE FOR WOMEN
CHANDIGARH

ABSTRACT

The objective of this paper is to evaluate the long run performance of the selected index fund schemes and to make comparative analysis of the performance of the funds on the basis of the risk-return framework during the period January, 2005 to December, 2011. The performance measures used are standard deviation, Beta, Alpha, R-Squared, Sharpe measure, Jensen measure, Treynor measure and Sharpe differential return measure. The results indicate that out of the schemes considered in the study, the ICICI Prudential Index Fund , Tata Index Fund and Franklin India Index Fund are better performers in case of Growth option of Index Fund. While on the other hand, in case of Dividend option the Franklin India has shown better performance. Franklin India Mutual Fund has been able to capture market very well in both growth as well as dividend options by showing the lowest of tracking error.

KEYWORDS

Beta, Index Funds, Risk Adjusted Measures, Raw return, Tracking Error.

1. INTRODUCTION

Mutual funds are financial intermediaries which mobilise the savings of those people who have surplus income and channelise their savings into those avenues where there is demand for funds. The main objective of these institutions is to employ their resources in such a manner so as to provide their investors the combined benefits of steady return, high liquidity, low risk and capital appreciation through diversification and expert management. In India mutual fund industry began with the establishment of Unit Trust of India in the year 1964. Later on in the year 1987 government allowed public sector banks and financial institutions to operate in the mutual fund industry. The industry has shown significant growth from the year 2003 onwards after the sector was opened for private sector and foreign players. There are large number of schemes which cater to the needs of different investors like gilt funds, sector-specific funds, income funds, growth funds, index funds. The present study analyse the performance of index funds.

The first Index fund was launched in India in June 1999.An Index fund is a fund in which investment is done in only those shares which comprises the market index (BSE Sensex or NSE Nifty). These funds follow a passive investment stategy as fund manager makes no attempt to identify stocks for investment or disinvestment, as the portfolio is built with the same stocks in the same weights as the market index. The performance of the fund is directly related to the performance of the index, except the tracking error. The tracking error occurs when there is deviation between returns of an index fund as compared to returns on the index. The deviation is due to transaction costs for buying and selling of stocks and payment of asset management fees. Tracking error is one of the good measure to compare the performance among funds as lower the tracking error better the fund. Index funds are suitable for those investors who want to make money on the stock market but they do not have time to track individuals stocks for trading by themselves.

2. LITERATURE REVIEW

Rao (2003) analysed the performace of Indian mutual funds in a bear market by using performance index, risk-return analysis, Treynor's ratio, Sharp's ratio, Sharp's measure, Jensen's measure, and Fama's measure . The study is conducted for the period September 98-April 02, on a sample of 269 open ended schemes. His study concluded that most of the mutual fund schemes in the sample were able to satisfy investor's expectations by giving excess returns over expected returns based on both premium for systematic risk and total risk.Dhume and Ramesh (2011) conducted a study to analyse the performance of the sector (Banking, FMCG, Infrastructure, Pharma and Technology) mutual funds using different approaches of performance measures. Findings of study revealed that all the sector funds have outperformed the market except infrastructure funds. Bawa and Brar (2011) conducted the study to evaluate the performance of a few selected Growth mutual funds schemes of India during the period 1st April 2000 to 31st March 2010. The paper also compared the results of public sector sponsored schemes with that of private sector schemes. Findings of study revealed that public sector growth schemes are more unstable and unsystematic as compared to private sector growth schemes in terms of their returns. The authors concluded that in terms of protecting investor's money from the market fluctuations public sector growth schemes have advantages over the private sector growth schemes. Jayadev (1996) conducted a study to evaluate the performance of two growth oriented mutual funds using Jenson, Treynor and Sharpe ratio. Findings of study revealed that both the growth oriented funds failed to perform better in terms of total risk and both the funds failed to offer advantages of diversification and professionalism to the investors.

3. OBJECTIVES OF THE STUDY

The main objectives of the study are to judge whether the index funds are actually a long term less risky form of investment and are able to perform as the market has done. The analysis also tries to explore the answer to the question whether the index funds are better off or worse off then the market index. The specfic objectives are:

To evaluate the long run performance of the selected schemes on the basis of the raw returns, considering quarterly buy and hold periods.

To examine the tracking error and components of total risk of the funds.

To make comparative analysis of the performance of the funds on the basis of the risk-return adjustment models suggested by Sharpe, Jensen and Treynor.

4. RESEARCH METHODOLOGY

DATA SOURCES

The Index funds based on S&P CNX Nifty have been considered for the study. Only those Index funds which were launched prior to 2005 have been focused upon for the comparative performance evaluation. Table 1 presents the funds selected for the analysis. For the purpose of study, analysis is done for the period of seven years i.e. from 2005 to 2011. The Benchmark Index for the study is the S&P CNX Nifty Index. The study is based on secondary data. For evaluating the performance NAV data have been collected from various websites like www.mutualfundsindia.com, www.amfiindia.com and www.moneycontrol.com. The risk free rate is the rate of return of the 91-days Treasury Bills obtained from Reserve Bank of India website.

TOOLS

The study considers the Raw Returns calculated on quaterly basis. For this, the closing values of the NAV on the first working day of the quarter of each year are considered. Raw returns are the buy and hold returns for each period i.e. quarter considered.

Raw Return= NAVt- NAV t-1/ NAV t-1

The performance of selected mutual fund schemes has been evaluated by using standard deviation, Beta, Alpha, R-Squared, Sharpe measure, Jensen measure, Treynor measure and Sharpe differential return measure.

3. RESULTS OF PERFORMANCE EVALUATION

3.1. RISK RETURN ANALYSIS

The Table 2 shows the Average Raw Return, Maximum and Minimum Raw Returns of the selected schemes along with that of the benchmark index. Considering the Table 2, it can be found that the average return of the growth schemes of the index funds is satisfying as the schemes are capable of following market index return. Raw Returns are the Buy and Hold returns an investor would have earned while investing in the respective schemes on quarterly basis for the considered time period.

Only Franklin India Index Fund, ICICI Prudential Index Fund and Tata Index funds outperform the market. In case of Dividend Schemes of the considered index funds, Table 3, none outperforms the market return in terms of capital appreciation. Only Franklin India Index fund has been able to generate raw returns to the extent of market

For analysing the performance of funds raw returns should not be considered in isolation, the picture tends to complete itself when total risk and systematic risk estimates are also considered. Total risk i.e. standard deviation of schemes is almost equal to market risk as shown in Table 4 & 5. Higher value of R Squared explains the confidence in Beta values. As depicted in Table 4,Considering R- squared values with beta estimates, the results for growth schemes show that the index funds follow the lines of market movements. The values of R squared are approximating towards one which shows that the index funds have almost exact correlation with the underlying index fund.

The Beta values (Table 5) calculated for the dividend schemes, represent a market equivalent systematic risk. But the R- Squared showed comparatively lesser confidence except for the Franklin India Index Fund and Principal Index Fund.

3.2. RISK ADJUSTED MEASURES ANALYSIS

Sharpe's Ratio is the ratio which represents the reward to variability. It is the excess of return earned over and above the risk free return for each unit of volatility involved. The positive and higher value of the ratio is considered better from the small investor's point of view who hope or the excess returns and seeking diversification through mutual funds. As it is evident from the Table 6 that none of the Index fund Growth schemes have provided a positive value and thus, none of the index fund has shown the excess return earned over risk free return. Similar scenario is seen in case of dividend schemes (Table 7).

Treynor's Ratio provides the excess return over the risk free return per unit of systematic risk. It estimates the performance of well diversified portfolio. Out of the considered schemes, ICICI Prudential Index Fund has been able to perform better in comparison with other schemes (Table 6). In case of dividend schemes Franklin India Index Fund has outperformed market as well as the rest of the dividend schemes(Table 7).

Jensen's alpha is based on CAPM. It reflects the performance of fund manager by providing an estimate of the better and timely stock selection and outperformance of funds given the level of systematic risk. As per the Jensen's alpha (Table 6) the ICICI Prudential Index Fund, Tata Index Fund and Franklin India Index fund are better performers than the rest of the index funds. In case of dividend schemes (Table 7), Franklin India Index Fund has been able to perform better in tough times of market while on the other hand; LIC MF has turned out to be the lowest performer in all the risk adjusted measures.

Sharpe's Differential Return measures the capability of the fund manager to earn the differential return i.e. the difference between the expected return and actual return. Almost all the index mutual funds have been able to earn differential returns as per the index differential return (Table 6). Out of the given schemes, the LIC MF Index fund has outperformed the rest of the schemes. In case of dividend schemes (Table 7), ING Large Cap Equity scheme outperforms market as well as rest of the schemes and is followed by Franklin India and Principal Index Mutual Fund.

3.3. TRACKING ERROR

Table 8 & 9 shows the tracking error of the index fund schemes. Tracking Error as explained earlier tries to estimate how well the fund manager has been able to capture the composition of portfolio of the benchmark index in its fund. From the Table 8 , it becomes clear that Franklin India Index Fund, Principal Index Fund and ICICI Prudential Index Fund have the least tracking error over the long period considered, emphasizing the active actions in tracing the index or market. The highest tracking error of dividend schemes (Table 9) is of LIC Mutual Fund while the lowest is of Franklin India Index Fund and Principal Index Mutual Fund.

4. CONCLUSION

On the basis of evaluation of the performance of index mutual funds it can be concluded that though Index funds are a great avenue for investment but they are just the follower of market. They undoubtly try to capture market sentiment, good as well as bad, thus the performance always flow along the market trend.

Taking into account all the parameters of evaluation in consideration it can be said that out of the schemes considered in the study, the ICICI Prudential Index Fund , Tata Index Fund and Franklin India Index Fund are better performers in case of Growth option of Index Fund. While on the other hand, in case of Dividend option the Franklin India has shown better performance. Franklin India Mutual Fund has been able to capture market very well in both growth as well as dividend options by showing the lowest of tracking error.

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6. TABLES

TABLE 1: LIST OF MUTUAL FUND SCHEMES CONSIDERED FOR THE STUDY

Sr. No.	Index Fund	Launched	Issuer
1	Principal Index Fund	Jul-99	Principal PNB AMC Pvt. Ltd
2	UTI Nifty Index Fund	Mar-00	UTI AMC Pvt. Ltd.
3	Franklin India Index Fund	Jun-00	Franklin Templeton AMC (India) Pvt. Ltd.
4	SBI Magnum Index Fund	Dec-01	SBI Funds Management Ltd.
5	ICICI Prudential Index Fund	Feb-02	ICICI Prudential AMC Ltd.
6	HDFC Index Fund – Nifty Plan	Jul-02	HDFC AMC Ltd.
7	Birla Sun Life Index Fund	Sep-02	Birla Sun Life AMC Ltd.
8	LICMF Index Fund – Nifty Plan	Nov-02	LIC Mutual Fund AMC Ltd
9	Tata Index Fund-Nifty Plan	Feb-03	Tata AMC Pvt. Ltd
10	ING Large Cap Equity Fund	Jan-04	ING Investment Management (I) Ltd.
11	Canara Robeco Nifty Index Fund	Sep-04	Canara Robeco AMC Ltd.

TABLE 2: RETURN ESTIMATES OF INDEX FUNDS- GROWTH SCHEMES

Name of the Scheme	Average Return	Maximum Return	Minimum Return
Principal Index Fund	3.81276	-23.503	40.3928
UTI Nifty Index Fund	3.61604	-23.26	40.9531
Franklin India Index Fund	4.24682	-23.617	41.5144
SBI Magnum Index Fund	3.90862	-23.216	41.781
ICICI Prudential Index Fund	4.58413	-22.609	41.9554
HDFC Index Fund – Nifty Plan	3.67853	-26.051	38.9757
Birla Sun Life Index Fund	4.05791	-23.774	41.2066
LICMF Index Fund – Nifty Plan	3.45783	-24.015	39.9195
Tata Index Fund-Nifty Plan	4.3214	-23.386	41.0159
ING Large Cap Equity Fund	3.96292	-22.707	40.9091
Canara Robeco Nifty Index Fund	4.03623	-23.357	41.0791
S&P CNX Nifty(Benchmark)	4.2069	-23.218	41.8433

TABLE 3: RETURN ESTIMATES OF INDEX FUNDS- DIVIDEND SCHEMES

Name of the Scheme	Average Return	Maximum Return	Minimum Return
Principal Index Fund	3.17399	40.3685	-42.032
UTI Nifty Index	2.75529	40.9551	-60.857
Franklin India Index	4.25364	41.5144	-23.617
SBI Magnum Index Fund	2.26992	41.7277	-27.086
Birla Sunlife Index fund	3.10977	41.2057	-38.372
LIC Mutual Fund	0.96355	39.9199	-36.833
Ing LargeCap Equity Fund	2.45421	41.1707	-22.769
Canara Robeco Nifty Index Fund	2.68284	40.6077	-29.171
S&P CNX Nifty(Benchmark)	4.2069	-23.218	41.8433

TABLE 4: STANDARD DEVIATION, BETA AND R-SQUARED OF INDEX FUNDS – GROWTH SCHEMES

Name of the Scheme	Standard Deviation	Beta	R Squared
Principal Index Fund	15.0641	0.94953	0.99887
UTI Nifty Index Fund	15.4407	0.98167	0.95001
Franklin India Index Fund	15.2338	0.96044	0.99932
SBI Magnum Index Fund	15.0697	0.94844	0.99584
ICICI Prudential Index Fund	15.2755	0.96242	0.99797
HDFC Index Fund – Nifty Plan	14.9676	0.94157	0.99491
Birla Sun Life Index Fund	15.2807	0.95437	0.98069
LICMF Index Fund – Nifty Plan	14.3903	0.88648	0.95405
Tata Index Fund-Nifty Plan	15.2277	0.95318	0.98506
ING Large Cap Equity Fund	14.6985	0.92518	0.99606
Canara Robeco Nifty Index Fund	14.9553	0.93052	0.97329
Market	15.2686		

TABLE 5: STANDARD DEVIATION, BETA AND R-SQUARED OF INDEX FUNDS – DIVIDEND SCHEMES

Name of the Scheme	Standard Deviation	Beta	R Squared
Principal Index Fund	16.6871	1.02989	0.95762
UTI Nifty Index	19.0348	1.11935	0.86939
Franklin India Index	15.2811	0.96256	0.99753
SBI Magnum Index Fund	15.6348	0.90349	0.83954
Birla Sunlife Index fund	17.2399	0.99616	0.8394
LIC Mutual Fund	18.0403	0.98585	0.75078
Ing LargeCap Equity Fund	14.8521	0.80867	0.74532
Canara Robeco Nifty Index Fund	16.0701	0.88093	0.75548
Market	15.2686		

TABLE 6: RISK ADJUSTED MEASURES OF INDEX FUNDS- GROWTH SCHEMES

Name of the Scheme	Sharpe's Measure	Treynor's Measure	Jensen's Alpha	Sharpe's Differential Return
Principal Index Fund	-0.1568	-2.4868	-8.598	4.23325
UTI Nifty Index Fund	-0.1657	-2.6058	-9.1989	4.18473
Franklin India Index Fund	-0.1265	-2.0066	-7.8187	4.21139
SBI Magnum Index Fund	-0.1503	-2.3886	-8.4041	4.23253
ICICI Prudential Index Fund	-0.1041	-1.652	-7.1689	4.20602
HDFC Index Fund – Nifty Plan	-0.1667	-2.6504	-8.8064	4.24568
Birla Sun Life Index Fund	-0.1385	-2.2173	-8.1507	4.20535
LICMF Index Fund – Nifty Plan	-0.1888	-3.0641	-8.8535	4.32006
Tata Index Fund-Nifty Plan	-0.1217	-1.9437	-7.6285	4.21218
ING Large Cap Equity Fund	-0.1504	-2.39	-8.149	4.28036
Canara Robeco Nifty Index Fund	-0.1429	-2.2975	-8.0418	4.24727
S&P CNX Nifty	-0.1288	-2.0428	-7.9126	4.2069

TABLE 7: RISK ADJUSTED MEASURES OF INDEX FUNDS- DIVIDEND SCHEMES

Name of the Scheme	Sharpe's Measure	Treynor's Measure	Jensen's Alpha	Sharpe's Differential Return
Principal Index Fund	-0.1798	-2.913	-10.422	4.02414
UTI Nifty Index	-0.1796	-3.0542	-11.955	3.72168
Franklin India Index	-0.1257	-1.9951	-7.8183	4.2053
SBI Magnum Index Fund	-0.2497	-4.3212	-11.232	4.15972
Birla Sunlife Index fund	-0.1777	-3.0761	-10.308	3.95292
LIC Mutual Fund	-0.2888	-5.2853	-14.495	3.8498
Ing LargeCap Equity Fund	-0.2505	-4.6	-10.13	4.26056
Canara Robeco Nifty Index Fund	-0.2172	-3.9631	-10.273	4.10364
S&P CNX Nifty	-0.1288	-2.0428	-7.9126	4.2069

TABLE 8: TRACKING ERROR OF INDEX FUNDS- GROWTH SCHEMES

Name of the Scheme	Tracking error
Principal Index Fund	0.54877
UTI Nifty Index Fund	3.54797
Franklin India Index Fund	0.4
SBI Magnum Index Fund	0.99943
ICICI Prudential Index Fund	0.6887
HDFC Index Fund – Nifty Plan	1.12076
Birla Sun Life Index Fund	2.12784
LICMF Index Fund – Nifty Plan	3.31441
Tata Index Fund-Nifty Plan	1.86746
ING Large Cap Equity Fund	1.09992
Canara Robeco Nifty Index Fund	2.4976

TABLE 9: TRACKING ERROR OF INDEX FUNDS- DIVIDEND SCHEMES

Name of the Scheme	Tracking error
Principal Index Fund	3.59537
UTI Nifty Index	7.31235
Franklin India Index	0.75989
SBI Magnum Index Fund	6.33351
Birla Sunlife Index fund	6.92892
LIC Mutual Fund	9.01347
Ing LargeCap Equity Fund	7.88433
Canara Robeco Nifty Index Fund	8.05224

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