Evaluation of Investment Performance and Perception of Investors in Bengaluru and its Sub-Urban Area with respect to Equity Linked Savings Scheme Plans of Indian Mutual Funds

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by

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1. Introduction

The economic development of a nation largely depends upon its effective and efficient utilization of scarce resources. One such scarce resource is capital. Capital creation is made possible through accumulation of savings. The surplus entities in the economy save and invest their surplus in various financial assets which in turn is utilized by the deficit entities for investing in various real assets leading to value creation. The financial system of the nation facilitates capital creation by linking the surplus and the deficit entities through capital markets, financial services and financial instruments.

An efficient financial system should provide its investors a range of investment alternatives to suit their investment objectives. This includes alternatives with varying maturities and varying risk – return characteristics. In other words the financial system should enable creation of risk capital on one extreme and risk less capital on the other. In this regard, Mutual Funds are a good fit into the financial system, as they enable capital creation across the entire spectrum of risk.

Mutual Funds are collective investment vehicles which represent an indirect method of investing. A mutual fund is an entity which provides the services of creating and managing public investment portfolios. A mutual fund collects small amounts of money from a large number of likeminded investors having similar investment objectives. The money is pooled and invested into a portfolio of assets depending on the investment objective to be achieved. The returns earned from the invested pool of assets after deducting the investment management charges is divided among the investors based on their invested amount.

In order to encourage individual investors to develop equity investment culture, the then finance minister, in his budget speech on 28th February 1989, introduced a new mutual fund scheme called the 'Equity Linked Savings Scheme' (ELSS). The ELSS funds incentivized the small investors with a lower income tax obligation, depending on the amount invested in ELSS funds, during the financial year. ELSS mutual funds therefore are conceived to be one of the means of reducing the income tax burden of the investor and so appropriately, referred to as Tax Saving Mutual Funds. For an initial period till 31st March 1991, ELSS investments were eligible for deduction benefit of ₹ 10,000. From the financial year 1991-92 onwards, the tax incentive was modified to a tax rebate benefit, under Section 88 of the Income Tax Act, with ₹ 10,000, remaining the eligible investment amount. From the financial year

2005-06, the tax incentive reverted back to deduction benefit, under Section 80C of the Income Tax Act, with an eligible investment going up to ₹ 1,00,000. The eligible investment for deduction benefit from the financial year 2014-15 is further increased to ₹ 1,50,000.

ELSS funds are defined by Notified Scheme Regulations, as one that remains invested in equity shares and related instruments, to the extent of 80% of its investible assets. To qualify as equity mutual funds and derive the tax benefits assigned, the equity allocation of such fund should be a minimum of 65% of the investible assets. Higher equity allocation is one of the marked differences between ELSS funds and Equity funds. . ELSS funds being tax saving investments providing tax deduction benefit (rebate benefit till 31st March 2005), has a lock in period of 3 years from the date of investment. So investors into ELSS fund schemes, have to remain invested in the scheme for a minimum period of 3 years from the date of investment. Equity mutual funds on the other hand do not have any lock in period. Lock in period of the invested amount is another major difference between ELSS funds and Equity Funds.

ELSS mutual funds, except for the two differences mentioned above, are similar to Diversified Equity Mutual funds in terms of tax exemption benefit on the returns earned from the investment and also the investment universe into which the fund corpus is invested. Therefore Diversified Equity Mutual Funds are a good benchmark to compare the investment performance of ELSS Fund schemes.

ELSS mutual fund is one among a number of investments that provide tax deduction benefit under Sec 80 C of the Income Tax Act. The investment universe in this category is diverse with a number of investments providing fixed returns with least amount of risk (5 Year Tax Saving Bank Fixed Deposits, National Savings Certificate, Public Provident Fund etc.) on one end and ELSS funds with market based returns and high element of risk on the other end. Investor's choice of ELSS funds from this eligible investment universe is therefore dependent upon their perceived return expectation and their perception towards its inherent risk. These two aspects could determine their preference for ELSS investment.

2. Review of Literature

The previous studies in mutual funds reviewed has been classified into two sections :

a) Studies relating to mutual funds and Investment Performance; and

b) Studies relating to mutual fund Investor Perception

Indian researchers mostly focussed on performance appraisal of funds, individual as well as category wise and also have undertaken a number of comparative studies. There have been numerous studies on region wise investor attitudes, preferences and perception towards mutual fund investments in general. The studies pertaining to Equity Linked Savings Scheme mutual funds as an independent and distinct category of mutual funds are few, be it on investment performance or investor perception. Accordingly the following gaps were identified:

- Absence of studies considering ELSS funds as a distinct category,
- Comparison of investment performance of ELSS funds category with Diversified Equity Funds category,
- Comparison of investment performance of ELSS funds category with Benchmark Indexes,
- Perception of investors with regard to risk and return of ELSS funds,
- Preference of investors towards ELSS funds as compared to other Tax Saving Investments.

3. Statement of the Problem

ELSS funds are a type of Diversified Equity Funds except for the differences in percentage allocation to equity and investment lock in period. Higher equity allocation implies higher risk – reward expectation. Similarly a lock in period also enhances the risk of the investor and thereby enhances the risk premium expectation from the investment. Simply said, a higher equity allocation and a 3 year lock in period, make the ELSS investments apparently more risky when compared to Diversified Equity funds and thereby lead to a higher investor return expectation. So the question that arises from the investment performance point of view is whether ELSS funds provide a better risk adjusted return performance as compared to Diversified Equity Mutual funds.

As there are a number of eligible investments u/s 80C of the Income Tax Act, which provide the same tax incentive as the ELSS funds, the question arises as to perception and preference of Investors towards ELSS funds as compared to other tax saving investments.

5. Objectives of the Study

The main objectives of this study are:

1) To compare and evaluate the investment performance of Equity Linked Savings Scheme mutual funds (Growth) plans with other Diversified Equity mutual funds (Growth) plans.
2) To compare and evaluate the investment performance of Equity Linked Savings Scheme mutual funds (Growth) plans with relevant Benchmark Market Indexes.
3) To identify the additional risks if any, involved in investing in Equity Linked Savings Scheme (Growth) plans as compared to Diversified Equity Funds (Growth) plans.
4) To analyse the risk-reward perception of individual retail investors towards Equity Linked Savings Scheme mutual funds as compared to Diversified Equity mutual funds.
5) To analyse the investor's perception and preference towards of Equity Linked Savings Scheme mutual funds as compared to other Tax Saving Investments.

6. Hypotheses

The Hypotheses for the study is as follows :

$H_{01} =$ There is no significant difference in the average Sharpe Ratio of ELSS (Growth) funds and Diversified Equity (Growth) funds.

$H_{02} =$ There is no significant difference in the average Sortino Ratio of ELSS (Growth) funds and Diversified Equity (Growth) funds.

$H_{03a} =$ There is no significant difference in the average Jensen's Alpha of ELSS (Growth) funds and Diversified Equity (Growth) funds based on BSE Sensex.

$H_{03b} =$ There is no significant difference in the average Jensen's Alpha of ELSS (Growth) funds and Diversified Equity (Growth) funds based on BSE 100 Index.

H_{03c} = There is no significant difference in the average Jensen's Alpha of ELSS (Growth) funds and Diversified Equity (Growth) funds based on BSE 200 Index.

H_{03d} = There is no significant difference in the average Jensen's Alpha of ELSS (Growth) funds and Diversified Equity (Growth) funds based on BSE 500 Index.

H_{03e} = There is no significant difference in the average Jensen's Alpha of ELSS (Growth) funds and Diversified Equity (Growth) funds based on NSE Nifty.

H_{03f} = There is no significant difference in the average Jensen's Alpha of ELSS (Growth) funds and Diversified Equity (Growth) funds based on NSE 100 Index.

H_{03g} = There is no significant difference in the average Jensen's Alpha of ELSS (Growth) funds and Diversified Equity (Growth) funds based on NSE 500 Index.

H_{04a} = There is no significant difference in the Investors perception of risk in case of ELSS funds as compared to Diversified Equity funds.

H_{04b} = There is no significant difference in the Investors perception of expected return in case of ELSS funds as compared to Diversified Equity funds.

H_{05} = There is no significant difference in the Investors preference towards ELSS funds as compared to other Tax saving investments.

7. Data Collection and Methodology

The study has been done using data collected from both Primary and Secondary sources. For objectives 1 to 3, secondary data is used and for objective 4-5 primary data is used.

An important component of this study is the Investor's perception towards ELSS funds. For achieving this objective, the survey technique was adopted, with two structured questionnaire's one of Investor category and another for Non Investor category. The total sample size considered is of 532 investors of tax savings schemes u/s 80C of the Income Tax Act. The respondents consisted of two types of investors, those who had an investment experience (investor) in ELSS funds and those who invested in other tax saving investments but not in ELSS funds (non investor). The number of respondents

is 382 for the former and 150 for the later. The sampling method used was purposive sampling.

Another component of the study related to investment performance, for which secondary data is used consisting of sample sets of ELSS funds, Diversified Equity funds and Market Indexes. The sample ELSS fund set consists of 43 funds which is the entire population of ELSS funds that existed as on 31.03.2013, with a track record of 3 years from their respective dates of inception. The Diversified funds sample set has 12 funds that have been selected based on AUM as on 31.03.2013.

Investment Performance of ELSS funds and its evaluation as against Diversified Equity funds and benchmark Market index is carried out for the period 01.04.2000 till 31.03.2013. Primary data was collected from investor survey conducted during the period 01st April 2014 to 31st March 2015.

Methods and Tools used for Analysis:
To analyse and evaluate the investment performance, the following tools are used :

- Sharpe Ratio
- Sortino Ratio
- Treynor Ratio
- Jensen Alpha

The data sets of ELSS funds, Diversified Equity funds and Market Indexes are tested for normality using Kolmogorov-Smirnov Test for Normality and Shapiro-Wilk Test for Normality. The Hypotheses framed around the secondary data is tested using the Welch's two sample t-Test.

The Statistical Package for Social Sciences (SPSS) software was used to analyse primary data and perform statistical tests. The Hypotheses testing of data is done using the following tests:

- Independent –Samples Mann-Whitney U Test
- Independent –Samples Kruskal-Wallis Test
- Independent –Samples Kolmogorov-Smirnov Test
- Related Samples Friedman's Two -Way Analysis of Variance by Ranks
- One Sample Chi-Square Test

8. Results and Discussion

Investment Performance

Summary of Investment Performance Indicators

	Measure	ELSS Category Average	Diversified Equity Funds Average	Market Indexes Average
	Investment Performance Evaluation			
1	Quarterly Average Returns	3.29%	3.90%	5.66%
2	13 Year Annualized, Quarterly SIP Returns	12.65%	21.30%	13.51%
3	3 Year Rolling CAGR - Highest Returns	59.61%	77.17%	56.52%
	3 Year Rolling CAGR - Lowest Returns	-17.99%	-7.24%	-17.27%
4	Quarterly Average Standard Deviation	10.92%	12.02%	11.25%
5	Sharpe Ratio based on Quarterly Average Returns	-0.03	0.18	0.07
6	Sortino Ratio based on Quarterly Average Returns	-0.03	0.26	0.06
7	Beta (BSE Sensex)	1.05	1.11	
	Beta (BSE 100)	0.98	1.04	
	Beta (BSE 200)	0.95	1.01	
	Beta (BSE 500)	0.92	0.98	
	Beta (NSE Nifty)	1.03	1.10	
	Beta (NSE 100)	0.99	1.06	
	Beta (NSE 500)	0.94	1.00	
8	R^2 (BSE Sensex)	0.90	0.91	
	R^2 (BSE 100)	0.93	0.95	
	R^2 (BSE 200)	0.93	0.95	
	R^2 (BSE 500)	0.93	0.96	
	R^2 (NSE Nifty)	0.91	0.91	
	R^2 (NSE 100)	0.93	0.95	
	R^2 (NSE 500)	0.93	0.96	
9	Treynor Ratio (BSE Sensex)	-0.02	0.03	
	Treynor Ratio(BSE 100)	-0.01	0.00	
	Treynor Ratio (BSE 200)	-0.04	0.04	
	Treynor Ratio (BSE 500)	-0.02	0.04	
	Treynor Ratio (NSE Nifty)	0.01	0.02	
	Treynor Ratio (NSE 100)	0.02	0.03	
	Treynor Ratio (NSE 500)	0.01	0.03	
10	Jensen's Alpha (BSE Sensex)	0.17	0.94	
	Jensen's Alpha (BSE 100)	0.36	1.11	
	Jensen's Alpha (BSE 200)	0.39	1.29	
	Jensen's Alpha (BSE 500)	0.44	1.32	
	Jensen's Alpha (NSE Nifty)	-0.20	0.71	
	Jensen's Alpha (NSE 100)	-0.12	0.73	
	Jensen's Alpha (NSE 500)	0.36	1.20	

- The funds allocation to equity assets of ELSS funds for the years March 2009, March 2010, March 2011, March 2012 and March 2013 is 80.55%, 93.23%, 92.24%, 93.47%, 93.51% and 90.60% respectively as against 81.47%, 92.44%, 91.18%, 90.79%, 92% and 89.58% for Diversified Equity funds.

- The funds expense ratio for ELSS funds for the year ended March 2008, Mach 2009, March 2010, March 2011, March 2012 and March 2013 was 2.26%, 2.32%, 2.24%, 2.25%, 2.28%, 2.46% and 2.31% respectively, as against 2.02%, 2.06%, 1.92%, 1.90%, 1.84%, 2.05% and 1.97% for Diversified Equity funds.
- The average portfolio turnover ratio of ELSS funds for the Years2010-11, 2011-12 and 2012-13 was 1.11, 0.92 and 0.86 respectively as against 1.01, 1.05 and 0.85 for Diversified Equity funds.

Summary of Hypotheses Testing - Investment Performance

Hypothesis	Statement of Null Hypothesis	Welch's t Test - p Value	Significance at 0.05	Test Result
H01a	No Significant difference in the Mean Sharpe Ratio of ELSS Funds and Diverisified Equity Funds	0.001	Significant	Null Hypothesis Rejected
H01b	No Significant difference in the Mean Sharpe Ratio of ELSS Funds and Benchmark Market Indexes	0.088	Not Significant	Null Hypothes cannot be Rejected
H02a	No Significant difference in the Mean Sortino Ratio of ELSS Funds and Diverisified Equity Funds	0.001	Significant	Null Hypothesis Rejected
H02b	No Significant difference in the Mean Sortino Ratio of ELSS Funds and Benchmark Market Indexes	0.345	Not Significant	Null Hypothes cannot be Rejected
H03a	No Significant difference in the Mean Jensen's Alpha of ELSS Funds and Diverisified Equity Funds based on BSE Sensex	0.032	Significant	Null Hypothesis Rejected
H03b	No Significant difference in the Mean Jensen's Alpha of ELSS Funds and Diverisified Equity Funds based on BSE 100 Index	0.046	Significant	Null Hypothesis Rejected
H03c	No Significant difference in the Mean Jensen's Alpha of ELSS Funds and Diverisified Equity Funds based on BSE 200 Index	0.007	Significant	Null Hypothesis Rejected
H03d	No Significant difference in the Mean Jensen's Alpha of ELSS Funds and Diverisified Equity Funds based on BSE 500 Index	0.009	Significant	Null Hypothesis Rejected
H03e	No Significant difference in the Mean Jensen's Alpha of ELSS Funds and Diverisified Equity Funds based on NSE Nifty	0.009	Significant	Null Hypothesis Rejected
H03f	No Significant difference in the Mean Jensen's Alpha of ELSS Funds and Diverisified Equity Funds based on NSE 100 Index	0.012	Significant	Null Hypothesis Rejected
H03g	No Significant difference in the Mean Jensen's Alpha of ELSS Funds and Diverisified Equity Funds based on NSE 500 Index	0.014	Significant	Null Hypothesis Rejected

- The null hypothesis of no difference in the risk adjusted performance of ELSS funds based on Sharpe, Sortino and Jensen measures as against Diversified Equity funds was tested using Welch's t – test and the p value was found significant at a significance level of .05 and the null hypotheses is rejected.

- The null hypothesis of no difference in the risk adjusted performance of ELSS funds based on Sharpe and Sortino measures as against Market Indexes was tested using Welch's t – test and the p value was found not significant at a significance level of .05 and the null hypothesis is retained.

Investor Perception

- Investor's assigned the highest importance to expected returns of the investment. 41.9% of the investor category and 44.5% of the non- investor category have ranked returns of the investment as the most important attribute of an investment.

- Investor's assigned medium importance to the risk of the investment. 7.5% of non- investors gave the highest importance to risk and 24% of them gave it the least importance. Similarly 7.1% of the investor category ranked it to be most important and 10.2% gave it the least importance.

- The null hypothesis of investors perception towards risk in ELSS funds being equal to Diversified Equity funds was tested at a significance level of .05 using Mann Whitney U Test. The p value was found significant leading to the rejection of the null hypothesis. The mean ranks of the test showed that investors perceived lesser risk in ELSS funds as compared to Diversified Equity funds.

- The null hypothesis of investors expectation of average annual returns from ELSS funds being equal to Diversified Equity funds was tested at a significance level of .05 using Kolmogorov-Smirnov Test and the p value was found not significant. The null hypothesis is retained. This means that investor's expectation of returns from ELSS funds is the same as the expectation of Diversified Equity funds.

- 24.7% of respondents in the non-investor category preferred Bank FD as an investment product, closely followed by mutual funds at 24%. With regard to investor category, 27.2% of the investors preferred Bank FD followed by 26.2% for mutual funds.

- 31% of the respondents in the non -investor category have preference for EPF as tax saving investment followed by 19.3% for a 5 Year Bank FD. 39.3% of this category have shown the least interest in ELSS funds.

- The preference of non- investor category and investor category towards mutual funds and ELSS funds as investment alternatives, was tested based on demographic factors of the respondents using Mann-Whitney U Test

and Kruskal-Wallis Test. The null hypotheses being that the investors have the same preference for Mutual Funds and ELSS funds. In case of demographic factors of gender, age, educational qualification and occupation, the p values were significant at a level of .05 and therefore the null hypotheses were rejected. However in case of marital status and monthly average savings, the p value was found not significant and therefore the null hypotheses were retained. The tests showed that males had more preference for mutual funds than females. Mutual funds were more favoured investment choice of younger population. Similarly the acceptability of mutual funds was high with post graduates and graduates. On the same lines those employed in private sector and in business, preferred mutual funds.

- The preference for mutual funds as an investment product was tested between investor and non- investor categories using Kolmogorov-Smirnov Test. The null hypothesis being that there is no difference in the preference towards mutual funds between investor and non- investor category. The p value at a significance level of .05 was found insignificant and therefore the null hypothesis is retained. This showed that both types of respondents had the same preference for mutual funds.

- The preference of non -investor category towards tax saving investments was tested using Friedman's Test. The null hypothesis being that investors have the same preference towards ELSS funds as compared to other tax saving schemes. The test showed a significant p value at a significance level of .05 and therefore the null hypothesis is rejected. The test showed that respondent's preferences were not the same. They had highest preference for 5 Year Bank FD and least preference for ELSS funds.

- The preference of investor category towards tax saving investments was tested using one sample Chi Square test as well as Friedman Test. The null hypothesis being that investors have the same preference towards ELSS funds as compared to other tax saving investments. Both the tests showed a significant p value at a level of .05 leading to the rejection of the null hypothesis. As per the mean rank, it can be stated that investors have a higher preference for 5 year Bank FD, followed by Life Insurance plans, National Pension Scheme and then ELSS funds.

9. Conclusions

- ELSS funds as a category has clearly underperformed the Diversified Equity funds on a risk adjusted basis.

- ELSS funds as a category has performed on par with market indexes on a risk adjusted basis.

- ELSS funds allocation to equity is marginally higher as compared to Diversified Equity funds.

- The average turnover ratio of ELSS funds and Diversified Equity funds as a category is not different and therefore does not pose any additional risk to the investor.

- The expense ratio of ELSS category has been consistently higher than Diversified Equity funds category.

- The awareness of ELSS funds as a tax saving investment option is not high.

- Non- investors in ELSS have shown least preference for investing into ELSS funds as compared to other tax saving schemes. However investors of ELSS, although do not assign the highest preference, however have assigned a medium preference towards it.

- Investors focus on returns performance and tax benefit while investing into ELSS funds. Asset Management Company and Fund Manager are other factors that influence their selection of a particular fund, followed by fund ratings.

- A good number of investors are happy with the existing lock in period of 3 years and also willing to remain invested for a period of up to 5 years.

10. Limitations of the Study

This study is subject to a number of limitations, which are as follows:

1) Although ELSS funds were available as an investment product from the financial year 1990-91, for the purpose of study, only a period of 13 years starting from 2000-01 till 2012-13 is considered.

2) The sample ELSS funds considered for the study consist of only those funds which were active as on 31st March 2013. Funds which were wound up and were not in existence as on 31st March 2013 are not considered.

3) As this study is focussed on the investment performance of ELSS funds in terms of their ability to produce long term returns, it has considered only ELSS (Growth) plans and has not considered ELSS (Dividend) plans for performance evaluation.

4) The investment performance evaluation made in this study is based on the NAV declared by the respective funds, which are net of fund costs.

5) The primary data required for the study is collected through structured questionnaire from investors residing in Bengaluru and its sub urban area only.

11. Scope for further Research

This study has been limited to the understanding of investment performance and investors perception with regard to ELSS mutual funds. There is ample scope for further research in this area which are as follows:

- Performance attribution of ELSS funds in comparison to Diversified Equity funds.
- Impact on fund ratings on investment performance and investor perception.
- Creating a model for ELSS benchmarking.
- Impact of mutual fund distribution channels on fund inflows.
- Impact of financial advisors on investor's perception towards mutual funds.