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Performance indicators of Equity linked saving schemes in India:An empirical Analysis

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Abstract : An investment is the sacrifice of today's consumption to gain profitable returns in the future. Therefore the Investors are very cautious while making investment decision expects higher return at lower risk. The tax paying investors Prefers to invest their money which provide them an opportunity to avail some tax exemption apart from other objectives of investment like better return, safety on their investment, liquidity etc.

There are various avenues are available in the financial market such as Fixed Deposit, Public Provident Fund (PPF), National Savings Certificate (NSC), Insurance, tax saving mutual funds etc which provides Tax relaxation. These tax saving mutual funds are known as Equity linked saving schemes (ELSS). These ELSS funds provides tax exemption of the income invested in them u/s 80(c) of Income Tax Act 1961 other than the attractive benefits of mutual fund investment higher returns at low risk, safety, minimum investment , professional management and Transparency etc.

The present study is an attempt to evaluate the performance of ELSS funds and also factors affecting their performance.

INTRODUCTION

An investment is the sacrifice of today's consumption to gain profitable returns in the future. Therefore the Investors are very cautious while making investment decision expects higher return at lower risk. The tax paying investors Prefers to invest their money which provide them an opportunity to avail some tax exemption apart from other objectives of investment like better return, safety on their investment, liquidity etc. The government of India has rendered a large number of tax incentives to induce the people for significant saving. The investment in tax saving securities provide dual benefit of providing reasonable return as well as tax saving.

There are various avenues are available in the financial market such as Fixed Deposit, Public Provident Fund (PPF), National Savings Certificate (NSC), Insurance, tax saving mutual funds etc which provides Tax relaxation. These tax saving mutual funds are known as Equity linked saving schemes (ELSS). These ELSS funds provides tax exemption of the income invested in them u/s 80(c) of Income Tax Act 1961 other than the attractive benefits of mutual fund investment higher returns at low risk, safety, minimum investment , professional management and Transparency etc. It also provides these small investors a mean of participation in the stock market that has neither the time, nor the money, nor perhaps the expertise to

understand direct investment in equity successfully. Investments in ELSS qualify for tax deductions under sec 80C of the income tax act subject to a maximum of Rs 100000 in a financial year.

PPF and NSC are popular tax savings instruments issued by the Government of India. Public provident fund (PPF) has a lock in period of 15 years; National savings certificate has a lock in period of 6 years in comparison to ELSS which has a lock in period of 3 years only. The present study is an attempt to evaluate the performance of ELSS funds and also factors effecting their performance.

RESEARCH OBJECTIVES

The following research objectives are examined-

1. To examine the nature of relationship of fund return with fund risk and market risk.
2. To determine the determinants of ELSS funds performance.

RESEARCH METHODOLOGY-

In the study, five variables selected on the basis of previous studies and literature available   to study their impact on fund return. These variables are Risk free rate of return, total risk inherent to individual funds, beta of funds, market return and market risk.

 A sample of 9 ELSS funds is taken for the study. The study is conducted for period beginning from post liberation i.e. 1993 to 2012. The various schemes taken under have operated for minimum period of eight years since their inception & it is assumed that this period is enough to drive any inference from the analysis.

 The necessary data and NAV have been collected from the website of mutualfundsindia.com, AMFI and websites of various mutual fund companies.

The following methodology is used for the study-

Fund return-

The annual return for the sample schemes are calculated by using the following equation--.

$R_{pt} = Log\ (NAV_t/NAV_{t-1})$

Where R_{pt}= is the annual return on mutual fund portfolio for the period t

NAV_t= net asset value for the (t) Period., NAV_{t-1}= net asset value for the (t-1) Period

The average return on the mutual fund portfolio -

$R_p = {}^n\sum_{t-1} R_{pt}/n$

Fund Risk –

Standard deviation is a measurement of total risk of a fund. It measures the volatility of returns of the fund. It indicates the tendency of the fund's NAV to rise & fall in a short period. Standard deviation of sample equity fund and benchmark portfolio is calculated through spss.

Market risk –

Market risk is measured by Beta. Beta relates the return of a stock or mutual fund to a market index. It reflects the sensitivity of the fund's return of fluctuations in the market index.

Formula for calculating Beta (β_f)

$\beta_f = Cov(R_m, R_p)/Var(R_m)$

Where, $Cov(R_m, R_p)$ = Covariance between the index's return(benchmark portfolio return) & the mutual fund scheme's return., $Var(R_m)$ = Variance in the benchmark return.

Risk-Free return -

A return on risk free asset is known as risk free rate of return. Government sequirities and nationalized bank deposits fall under this category. As the Government sequirities are not easily avilable to the common man. Nationalized bank deposits are considered as risk free asset and interest rate on such deposit are considerd as risk free return in most of the studies(Gupta ,1991).

The return on risk free asset is computed as follows:

$$R_{ft} = Log\ (I_t/I_{t-1})$$

Where, R_{ft} is the return on the risk free asset for the period t & I is the Interest rate on nationalized bank deposits.

I_t= interest rate at (t-1) Period., I_{t-1} = interest rate at (t-1) Period.

The average return on the risk free asset ---$R_f = {}^n\sum_{t-1} R_{ft}/n$

Market portfolio-

BSE-100 index is used as a benchmark in the present, study is considered as market portfolio or benchmark portfolio. The return on market portfolio computed as follows:

$$R_{mt} = Log\ (I_t/I_{t-1})$$

Where Rmt= is the return on the market index for the period t & I is the Index Value

I_t = BSE-100 National Index at (t-1) Period., I_{t-1} = BSE-100 National Index at (t-1) Period.

The average return on the market portfolio --$R_m = {}^n\sum_{t-1} R_{mt}/n$

Research model-- The following multiple regression model is used to study the impact of study variables on fund performance

Fund return (R_p)= $a + b1\ R_f + b2\ \sigma p + b3\ \beta_f + b4\ R_m + b5\ \sigma m$

Following Hypothesis are formed to achieve the research objectives:

Hypothesis 1
Ho: There is no significant relationship between funds returns and fund risk.

Hypothesis 2
Ho: There is no significant relationship between fund return and market return.

Hypothesis 3
Ho: There is no significant relationship between fund return and performance indicators.

Data analysis and Interpretation-

It is observed form the table 1 that average return (Rp) of sample ELSS funds is lower as compare to risk of bench mark port folio whereas, average total risk (σp) and market risk (**βp**) of sample ELSS funds is higher than the risk of bench mark port folio, This concluded that investment in ELSS funds are subject to higher risk as compare to investment in stock market through equity shares. This shows that portfolio managers are not able to diversify their port folio efficiently which helps in reducing the risk of the portfolio to provide better return than shares at the same level of risk.

The table 4 (annexure) shows that there is strong positive correlation between the fund return and performance indicators. Multiple R^2 is 0.883. This shows that about 88.3 % of variance of fund return is affected by the performance determinants taken in the study and only 11.7 % of variance of fund return is attributed to other factors.

ANOVA (F–value)-

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An examination with ANOVA (F–value) indicates that explains the most possible combination of predictor variables that could contribute to the relationship with the dependent variables.

Table 2(annexure) depicts the results of Anova test performed the to test the first hypothesis and results shows that corresponding F value is grater than the tabled value rejected the null hypothesis, thus there is significant the relationship between funds returns and fund risk.

Table 3(annexure) depicts the results of Anova test performed the to test the second hypothesis and results shows that corresponding F value is grater than the tabled value rejected the null hypothesis i.e. a significant part of funds returns is also defined by market risk.

As per table 4 (annexure) the calculated F value is 4.532. It seems that all of the corresponding F Value is greater in respect to their consequent values shows that null hypothesis 3 is also rejected Thus the results of the test imply that there is significant relationship between fund return and performance indicators.

Regression model

The following multiple regression model is developed through the regression test (annexure table-6) which shows the relation between study variables on fund performance-

$$\text{Fund return } (R_p) = -0.539 + 0.068\ R_f + (-0.040)\ \sigma p + 0.091\ \beta_f + (-0.364)\ R_m + 0.2.59\ \sigma m$$

The regression equation exhibits that the -

If risk free return increases by 1%, the fund return will increases by 6.8%, If fund total risk increases by 1%, the fund return will decrease by 4%, If fund market risk increases by 1%, the fund return will increases by only 9.1% and Fund return will increase by 25.9% if risk on benchmark portfolio is increase by 1%.

CONCLUSION

The study concluded that Sample ELSS Fund's are able to provide better return than any return on risk free securities but unable to outperform the benchmark portfolio in terms of average return. There is significant relationship between fund return and fund risk and market return proved through Anova test justify the fact that returns and risk are co-related with each other.

The study was set out to explain the impact of the explanatory variable used in the study (Risk free rate of return, total risk inherent to individual funds, beta of funds, market return and market risk) on the ELSS funds operating in India. The results suggest that all the explanatory variables have their impact on the fund return and fund performance is affected by changes in these variables. The results confirm that efficient management and diversification of fund investment as well as stock market trends and movement plays an important role in defining ELSS fund performance. The results of the study will be useful to the fund managers and investors while managing the funds portfolio and outperforming the market.

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Annexure

Table 1

S. No.	Fund	R_f	R_p	σ_p	βp	R_m	σ_m
1	Canara Robeco. equity diversified tax saver	0.00119	-0.02069	0.179462	0.83095	0.046007	0.18834
2	Franklin tempelton india Taxshield - G	0.00119	0.075539	0.164876	0.76513	0.046007	0.18834
3	HDFC LT advantage – G	0.007881	0.105434	0.190396	0.81522	0.063461	0.190994
4	HDFC tax saver - G	-0.00727	0.093685	0.20742	0.961341	0.057269	0.17989
5	SBI magnum taxgain - G	-0.00502	0.029039	0.247929	1.19129	0.040582	0.173181
6	LIC MF tax plan – G	-0.0102	0.03185	0.189674	0.78776	0.05655	0.18787
7	UTI equity tax saving plan – G	0.00119	0.04708	0.17499	0.76789	0.046007	0.18834
8	Sahara tax gain - G	-0.0102	0.03544	0.34576	0.8002	0.056554	0.18787
9	Taurus tax shield – G	-0.00727	0.03219	0.21564	0.97784	0.05726	0.17989
	MEAN	-0.00317	0.04773	0.212905	0.877513	0.052189	0.184968

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Table 2

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.000	1	.000	3.365	.109[a]
	Residual	.000	7	.000		
	Total	.000	8			

a. Predictors: (Constant), FUNDTRISK

b. DependentVariable: FUNDRET

Table 3

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.000	1	.000	1.785	.223[a]
	Residual	.000	7	.000		
	Total	.000	8			

a. Predictors: (Constant), MARKETRISK

b. Dependent Variable: FUNDRET

Table 4

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.940[a]	.883	.688	.0035039

a. Predictors: (Constant), MARKETRISK, RISKFRET,

FUNDTRISK, MARKETRET, FUNDMRISK

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Table 5

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.000	5	.000	4.532	.122[a]
	Residual	.000	3	.000		
	Total	.000	8			

a. Predictors: (Constant), MARKETRISK, RISKFRET, FUNDTRISK, MARKETRET, FUNDMRISK

b. Dependent Variable: FUNDRET

Table 6

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.539	.165		-3.259	.047
	RISKFRET	.068	.039	.418	1.755	.178
	FUNDTRISK	-.040	.025	-.356	-1.620	.204
	FUNDMRISK	.091	.031	2.058	2.934	.061
	MARKETRET	-.364	.212	-.443	-1.721	.184
	MARKETRISK	2.598	.760	2.439	3.417	.042

a. Dependent Variable: FUNDRET

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