

PERFORMANCE EVALUATION OF EQUITY MUTUAL FUNDS IN INDIA WITH SPECIAL REFERENCE TO TAX SAVINGS FUNDS

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ABSTRACT-The tax plays vital role for the development of any economy, for the growth of economy, it needs revenue, every countries raise revenue through none other than the tax. Every government put tax on every citizen (i.e. whose income having more than the limit) of country whether directly or indirectly to make balance of the their economy, in that investors, it means who is having income more than the limit, they can invest some avenues to take deductions under section 80C, whether they may invest in Post office, Additional NPS, Insurance and mutual fund etc. In the present context, savings play significant role for the tax savers (Employees), but present employees confusing to select right kind of avenues to save the money, hence the study attempted to know the selected tax savings schemes in mutual fund in India. The study has selected three tax savings scheme, i.e. LIC MF Tax Plan, SBI Magnum Tax gain Scheme and UTI Long Term Equity Fund. Those selected schemes have been compared with Nifty 50 index as benchmark and 364 days Treasury bill as risk free rate of return. The collected data has been analysed and interpreted with suitable statistical tools in order to achieve study objectives. Hence the study attempted on entitled “performance evaluation of equity mutual funds in India with special reference to tax savings funds”

Keywords: Mean Standard deviation, Regression, alpha, beta, one sample t-test, correlation, Regression, ANOVA etc.

INTRODUCTION

Mutual fund investment is Planning taxes is an essential part of your financial planning. Sec 80C of the Income Tax Act allow tax savers to claim deductions from taxable income by investing in certain amount in tax savings mutual funds. One of the most popular Section 80C investments is in tax saving mutual funds investment avenues. This is an equity diversified fund and investors may enjoy both the benefits of capital appreciation, as well as tax benefits. When financial year coming to a close and response in the direction of equity markets will be turn positive, investments in mutual fund, i.e., ELSS are on the rise. This is an equity diversified fund and investors enjoy both the benefits of capital appreciation, as well as tax benefits. In the study Equity Linked Savings Schemes, similar to other equity funds, ELSS funds contain dividend and growth options. Investors will get a lump sum on the expiry of three years in growth schemes mutual fund. In case in a dividend scheme, investors will get a regular dividend, whenever dividend is declared by the invested fund, even during the lock-in period. But present employees confusing to select right kind of avenues to save the money, hence the study attempted to know the selected tax savings schemes in mutual fund in India. The study has selected three tax savings scheme, i.e. LIC MF Tax Plan, SBI Magnum Tax gain Scheme and UTI Long Term Equity Fund. Those selected schemes have been compared with Nifty 50 index as benchmark and 364 days Treasury bill as risk free rate of return. The collected data has been analysed and interpreted with suitable statistical tools in order to achieve study objectives.

OBJECTIVES OF THE STUDY

The study intention to know the investors to invest their savings in Equity Liked Savings Schemes in mutual funds whether invest in SBI, LIC and UTC saving schemes and out of them which is better to invest to clime tax deduction under section 80C and capital appreciation.

RESEARCH DESIGN

Sources of the study: The study data has been collected from mainly secondary sources from websites, journals, factsheet etc.

Type of the research: Descriptive research.

Sampling methods: the study has used Purposive sampling in non probability sampling technique.

Period of the study: the study covered for ten years from the 2008 to 2017.

Tools used for the study: NAV.s, ANOVA, Correlation, Regression

DATA ANALYSIS AND INTERPRETATION

Table-1

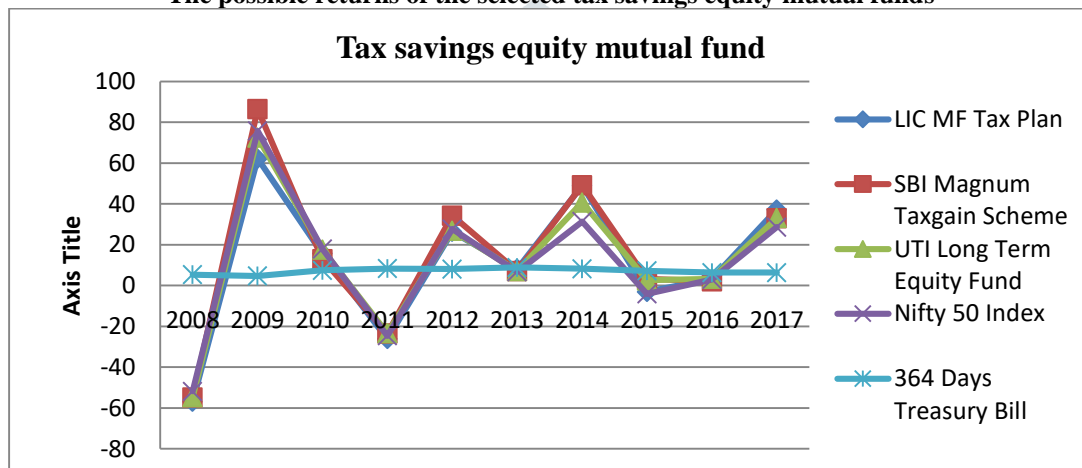
Possible returns of the selected Open ended Tax savings equity mutual funds in India

	LIC MF Tax Plan	SBI Magnum Taxgain Scheme	UTI Long Term Equity Fund	Nifty 50 Index	364 Days Treasury Bill
2008	-56.87	-54.83	-54.66	-51.79	5.35
2009	62.17	86.38	72.55	75.76	4.72
2010	15.73	12.98	17.62	17.95	7.49
2011	-26.20	-23.49	-23.39	-24.62	8.35
2012	26.33	34.25	26.89	27.7	8.11
2013	8.18	7.03	7.16	6.76	8.85
2014	49.05	49.14	40.73	31.39	8.22
2015	-3.01	3.20	2.62	-4.06	7.25
2016	3.26	2.10	3.31	3.01	6.34
2017	37.28	33.01	33.12	28.65	6.40

Source: Compiled from online value research factsheet.

Chart-1

The possible returns of the selected tax savings equity mutual funds



Source: the researcher created chart on the basis of above table 1

From the above table 1 and chart shows that selected all tax savings funds NAV's return are more variable during the period of the study, in the years 2008 and 2011, all funds earned loss then rest of the years earned profit during the period of the study.

Table-2

The linear regression statistics of LIC and Nifty index

Regression Statistics (LIC Dependent variable and Nifty independent variable)						
Multiple R	R Square	Adjusted Square	R	Standard Error	Observations	
0.973	0.946	0.939		8.706	10	
ANOVA	df	SS	MS	F	Sig	5F
Regression	1	10658.63	10658.63	140.62	0.00	
Residual	8	606.38	75.80			
Total	9	11265.00				
	Coefficients	Stand Error	t Stat	P-value	Lower 95%	Upper 95.0%
Intercept (Alpha)	0.574	2.906	0.197	0.848	-6.127	7.274
Nifty (Beta)	0.995	0.084	11.858	0.000	0.801	1.188

Source: Researcher created

From the above table 2 depicted that; Where Y is the estimated value or predicted value of LIC MF Tax Plan for given value of nifty 50 index price. According to the estimated regression equation, for every 1 percent increase in Nifty 50 index price, LIC MF Tax Plan will increase by 0.995. The value of α is 0.574. This shows that when price of Nifty index is zero. The return of LIC MF Tax Plan will be 0.574.

From the above table shows that linear regression of the LIC MF Tax Plan (Dependent variable) and Nifty 50 index (Independent variable),

The regression line is $\hat{Y} = \alpha + \beta X$. ($\hat{Y} = 0.574 + 0.995X$). To get a point forecast, simply plug the value of the X in the linear regression line. If X=2, the predicted value for the Y is 2.564.

R Square: The coefficient of determination can have a value ranging from zero to one. Value between 0 and 1 indicate the goodness of fit of the regression line to the sample data. The higher the value of the R Square, better the fit, in the study if R Square is near to 1, hence that then there is goodness of fit. The study nifty 50 index is a dependent variable and tax savings funds are independent variable, index has highly depends on above selected tax savings fund.

R-Square: 0.946, which means that independent variable X explain 946 percent of the total variation in dependent variable y. Standard error of estimate is equal to 8.706. It is dispersion around the regression line.

Analysis of the variance (F) value is 140.62 much more than the table values or P- Value (0.00), hence the study has significance.

The standard error of intercept and slop coefficients are 2.906 and 0.0840 respectively. The T-statistic is 0.197 and 11.858 respectively. It shows that nifty (beta) has significant and Intercept highly insignificant.

The confidence interval for Y-intercept term at 5% significance level lies between -6.127 and 7.274.

The confidence interval for slope coefficient at 5% significance level is 0.801 and 1.188.

Table-3
The linear regression statistics of SBI and Nifty index

Multiple R	R Square	Adjusted R Square	Standard Error	Observations		
0.990	0.979	0.977	5.939	10		
ANOVA	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	1	13404.36	13404.36	380.05	0.00	
Residual	8	282.16	35.27			
Total	9	13686.52				
	<i>Coefficients</i>	<i>Stand Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept(Alpha)	2.621	1.982	1.322	0.223	-1.950	7.191
Nifty (Beta)	1.116	0.057	19.495	0.000	0.984	1.248

Source: Researcher created

From the above table 3 depicted that, Linear regression model or line is $\hat{Y} = \alpha + \beta X$ ($\hat{Y} = 2.621 + 1.116X$), this regression indicates that the when the Nifty 50 index return is zero, the expected return SBI Magnum Tax gain Scheme 2.621.

The slope coefficient value 1.116 shows that when nifty 50 index 1 percent increases and SBI Magnum Tax gain Scheme return will increase 1.116.

R Square: 0.979 which shows that 98 percent of variation of returns of SBI Magnum Tax gain Scheme is explained by the Nifty 50 Index.

Analysis of variance (F) calculated values much more than the tabulated values or P- Value, hence it concludes that there is a significant changes return of scheme and benchmark.

The standard error of intercept and slop coefficients are 1.982 and 0.057 respectively. The T-statistic is 0.223 and 0.00 respectively. It shows that nifty (beta) has significant and Intercept highly insignificant.

The confidence interval for Y-intercept term at 5% significance level lies between -1.950 and 7.191.

The confidence interval for slope coefficient at 5% significance level is 0.984 and 1.248.

Table-4
The table shows the linear regression statistics of UTI and Nifty index

Multiple R	R Square	Adjusted R Square	Standard Error	Observations		
0.993	0.987	0.985	4.319	10		
ANOVA	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	1	10921.20	10921.20	585.33	0.00	
Residual	8	149.26	18.66			
Total	9	11070.46				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept (Alpha)	1.442	1.442	1.000	0.347	-1.883	4.766
Nifty (Beta)	1.007	0.042	24.194	0.000	0.911	1.103

Source: Researcher created

From the above table 4 depicted that; Where Y is the estimated value or predicted value of UTI Long Term Equity Fund for given value of nifty 50 index price. According to the estimated regression equation, for every 1 percent increase in Nifty 50 index price UTI Long Term Equity Fund will increase by 1.007. The value of α is 1.442. This shows that when price of Nifty index is zero. The return of UTI Long Term Equity Fund will be 1.442.

From the above table shows that linear regression of the UTI Long Term Equity Fund (Dependent variable) and Nifty 50 index (Independent variable),

The regression line is $\hat{Y} = \alpha + \beta X$. ($\hat{Y} = 1.442 + 0.1007X$). To get a point forecast, simply plug the value of the X in the linear regression line. If X=2, the predicted value for the Y is 3.456.

R Square: The coefficient of determination can have a value ranging from zero to one. Value between 0 and 1 indicate the goodness of fit of the regression line to the sample data. The higher the value of the R Square, better the fit, in the study R Square near to 1, hence that there is goodness of fit. The study nifty 50 index is a dependent variable and tax savings funds are independent variable, index has highly depends on above selected tax savings fund.

R-Square: 0.987, which means that independent variable X explain 987 percent of the total variation in dependent variable Y. Standard error of estimate is equal to 4.319. It is dispersion around the regression line.

Analysis of the variance (F) value is 585.33 much more than the table values or P- Value (0.00), hence the study has significance.

The standard error of intercept and slop coefficients are 1.442 and 0.042 respectively. The T-statistic is 1.00 and 24.194 respectively. It shows that nifty (beta) has significant and Intercept highly insignificant.

The confidence interval for Y-intercept term at 5% significance level lies between -1.883 and 4.766.

The confidence interval for slope coefficient at 5% significance level is 0.911 and 1.103.

Table-5
Linear regression of selected Tax saving equity mutual fund in India

	LIC MF Tax Plan	SBI Magnum Tax gain Scheme	UTI Long Term Equity Fund
Multiple R	0.9727	0.989638	0.993236
R Square	0.946172	0.979384	0.986517
Adjusted R Square	0.939443	0.976807	0.984831
Standard Error	8.706153	5.938893	4.319499
Observations	10	10	10
ANOVA			
F- Value	140.62	380.045	585.33
P-Value	0.00	0.00	0.00
Alpha	0.57	2.62	1.44
Beta	0.995	1.115	1.007

Source: Researcher created

From the above table 5 depicted that R Square: The coefficient of determination can have a value ranging from zero to one. Value between 0 and 1 indicate the goodness of fit of the regression line to the sample data. The higher the value of the R Square, better the fit, in the study R Square near to 1, hence that there is goodness of fit. The study nifty 50 index is a dependent variable and tax savings funds are independent variable, index has highly depends on above selected tax savings fund.

Table-6
Descriptive statistics of tax savings funds

	LIC MF Tax Plan	SBI Magnum Taxgain Scheme	UTI Long Term Equity Fund	Nifty 50 Index	364 Days Treasury Bill
Mean	11.592	14.977	12.595	11.075	7.108
Standard Deviation	35.37891	38.99647	35.07208	34.59007	
C.V	3.052011	2.603757	2.784604	3.123257	
Kurtosis	0.265534	0.717941	0.842507	1.019732	
Skewness	-0.55335	0.036456	-0.33251	-0.0289	

Source: Researcher created by MS Excel.

From the above table 6 depicted that, selected all tax savings funds earned higher return as compared to benchmark nifty 50 index, in case of SBI Magnum Taxgain Scheme has earned highest than the rest of the funds as well as risk also in the study period.

Coefficient of variance of SBI Magnum Taxgain Scheme and UTI Long Term Equity Fund are lesser than market index; it indicates that less variable more stable, more uniform and more constituent are more homogeneous than the market, vice verse.

Table-7
Covariance and correlation of tax savings equity mutual funds

	LIC MF Tax Plan	SBI Magnum Taxgain Scheme	UTI Long Term Equity Fund	Nifty 50 Index
LIC MF Tax Plan	1126.50	1216.94	1105.09	1071.33
SBI Magnum Tax gain Scheme	0.98	1368.65	1223.71	1201.42
UTI Long Term Equity Fund	0.99	0.99	1107.05	1084.45
Nifty 50 Index	0.97	0.99	0.99	1076.83

Source: MS Excel created by the researcher

From the above table 7 states that selected funds correlation values are the more 0.97, it indicates that there more It is also noticed that there is strong linear relationship of Pearson correlations of selected tax savings equity mutual funds. Calculated values are larger positive relation more than equal to 0.97 or close to 1 and covariance of selected tax savings equity mutual funds are showing larger positive values, therefore there is more covariance of the selected tax savings equity mutual funds

Table-8

Correlations of tax savings equity mutual funds					
		LIC	SBI	UTI	Nifty
LIC	Pearson Correlation	1	.980**	.990**	.973**
	Sig. (2-tailed)		.000	.000	.000
	N	10	10	10	10
SBI	Pearson Correlation	.980**	1	.994**	.990**
	Sig. (2-tailed)	.000		.000	.000
	N	10	10	10	10
UTI	Pearson Correlation	.990**	.994**	1	.993**
	Sig. (2-tailed)	.000	.000		.000
	N	10	10	10	10
Nifty	Pearson Correlation	.973**	.990**	.993**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	10	10	10	10

** . Correlation is significant at the 0.01 level (2-tailed).

Ha: there is significance difference of correlation of selected funds

The above selected government sector equity mutual funds are more correlation at 5 percent and 1 percent level of significance in two tailed test, hence it concludes that there is significance difference of correlation.

Table-11
One sample T-Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
LIC	1.036	9	.327	11.59200	-13.7165	36.9005
SBI	1.215	9	.255	14.97700	-12.9194	42.8734
UTI	1.136	9	.285	12.59500	-12.4941	37.6841
Nift	1.012	9	.338	11.07500	-13.6692	35.8192

Hypothesis: There is change of NAV returns of the selected government sector equity mutual fund

The calculated value of the P-values are greater than the 0.05, hence it reveals that there no changes of NAV returns of the selected funds in study period, hence reject the alternative hypothesis, therefore, there is no significance difference of the selected funds.

FINDINGS AND CONCLUSION

The study has been concludes that during the study period all selected tax savings funds performed better than the market nifty index, in that SBI Magnum Taxgain Scheme has been out performed than the rest of the funds as well as risk also has more than the rest of the funds during the study period and there is strong relationship among them and covariance also. There is changes of

NAV's returns of selected tax savings funds as per the one way analysis of variance and one sample t-test, SBI has higher responsiveness than the others, hence totally concludes that SBI Magnum Taxgain Scheme has performed best among the selected tax savings funds during study period.

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