An Empirical Study on Long Term Performance of Equity Linked Savings Schemes in Mutual Funds

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Abstract

In this paper, an attempt has been made to evaluate the performance of thirty two growth oriented open ended equity linked savings schemes of tax saving mutual funds in India. Performance has been analyzed on the basis of monthly returns compared to Indian stock market Benchmark, S&P CNX nifty. For this purpose, Risk-adjusted performance measures suggested by Sharpe, Treynor and Jenson have been used. Last five years Net Asset Value of tax saving schemes from 2012-13to 2016-17 has been employed. All the schemes follow the same pattern in its return and moves along with the Stock market index and S&P CNX nifty. The average return of all the schemes is higher and average risk is lower than the Benchmark S&P CNX nifty.

Keywords: Performance Measures, Equity Linked Savings Scheme, Risk Adjusted Returns.

Meaning of ELSS:

ELSS is a dedicated mutual fund scheme that allows investors to save tax. An ELSS fund manager invests in a diversified portfolio, predominantly consisting of equity and equity related instruments that carry high risk and have potential to deliver the high returns.

Introduction

Majority tax payers like to save their money without paying tax. To escape from paying tax they have to invest required amount in to tax shielded avenue. Along with tax exemption they expect returns out of it. Tax saving mutual fund is one of the avenue which provides market related return with tax exemption. Investors can avail tax exemption of Rs.1,50,000 u/s.80C by investing into tax saving mutual funds.

Mutual fund industry is emerged in 1964 in India and developed enormously. It is general idea that is through diversified portfolio mutual funds could give better returns with low risk than the market risk and the volatility of the mutual fund market is less than the stock market. An investor, who is invested into stock market need to monitor the market on regular basis, whereas, those who invested into mutual fund no need to watch the market movement for reducing the loss. The Fund manager of every Asset Management Company takes care of the investors' money. They diversify the investors' money into various sectors like Oil, Bank, Automobile, Information technology, Agriculture, etc., the returns from this diversified portfolio distributed to all the investor. Hence mutual fund provides nominal return with lower risk.

India has thirty two open ended Equity Linked Savings plan called Tax saving mutual funds. This study evaluates the performance of tax saving mutual funds for the past five years from 2012-13 to 2016-17. This study utilized the Benchmark Index S&P CNX nifty to compare mutual fund performance.

The rest of the paper is organized as summarizing the related literature on mutual fund performance, presenting data and methodology, results of the tax saving mutual funds performance analyses and final section discusses the conclusion of this paper.

Review of literature

William f. Sharpe (1966)[1], made an attempt to measure and predict the performance of mutual funds by a simple measure like average return and risk and identified that good performance of funds is associated with low expense ratio.

Eugene f. Fama and kenneth r. French (1992)[2], identified five common risk factors in the returns on stock and

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[1] William Sharpe, F." Mutual Fund Performance", The Journal of Business, Vol. 39, No.1, pp.119-138, 1966

[2] Eugene Fama, F. and Kenneth French, R. "Common Risk Factors in the Returns on Stocks and Bonds", Journal of financial Economics, Vol. 33, pp. 3-56, 1992

bonds. There are three stock market factors such as overall market factor, factors related to firm,size and book-to-market equity. There are two bond-market factors, related to maturity and default risks. Stock returns are linked to both stock-market factors and bond market returns.

Sitkin and pablo(1992)[3], defined risk perception as risk assessment in uncertainty and it depends on the familiarity with organizational and management system. The authors also developed a model of determinants of risk behaviour and identified personal risk preferences and past experiences are the important risk factors and social influence also affects the individual's perception.

John n. Sorros (2003)[4], evaluated the risk and return of 16 equity mutual funds operating in the greek financial market over the period of 1995-1999. The study revealed that all sixteen mutual funds showed lower total risk, and risk-return coefficient than the general index of the athens stock exchange (ase) and there was a variation in return in all sixteen mutual funds.

Svetlana (2010)[5], made a this study to test the efficient market hypothesis for different market capitalization and investment styles of mutual funds. The results of the study for the entire period of 1994-2007 indicated that small cap funds have provided the highest risk-adjusted return for the entire period whereas growth funds have exhibited lower returns. The author found that the mutual funds market is not always efficient, which makes it possible for an investor or a mutual fund manger to earn excess return on a risk- adjusted basis.

Niamey (2011)[6], compared the return of eight different us equity funds with the NSE composite index for the period of 2000-2007 and found that both the returns are relatively moving together. The article also criticized that investors need to be aware of problems and issues of mutual funds and have to reconsider other investment alternatives for better returns.

Vienna (2013)[7], examined whether mutual funds could actually impart more value than the stock market and protect the interest of the investors during the downturn. It was found that during the sharp downturn the schemes not only gave negative returns but also underperformed the index.

Shefali Jain (2015)[8], evaluated the performance of 16 equity- linked schemes using risk and return and compared their performance with its benchmark S&P CNX nifty. It has been found in the article that majority of the investors were aware of mutual funds, its risk and return proportion.

Data

Thirty two Indian based Equity Linked Savings schemes have been collected for the purpose of study. Daily returns of these funds are obtained from the first financial year 2012-13 till 2016-2017

Daily returns of all the schemes are collected from Association of Mutual fund in India (AMFI)

The techniques used in this study for the Risk-free rate of return with the average yield (3.5 per cent) based on Bank Deposit savings schemes returns.

Methodology

This study estimates risk-return profiles for tax saving mutual funds that have been varied from five-year period to one-year period. Daily returns are used for computing annual returns and measures of return and risk. Mean returns are calculated by averaging the monthly returns over the relevant time period.

NAV return is the change in the net asset value of mutual fund over a given time period.

Total risk measures by the Standard Deviation of returns. Systematic (market) risk is estimated by beta. Risk premium related to the total risk is measures by Sharpe index. Fund's performance in relation to the market performance is measured by Treynor index. Jensen's alpha is used to compare the actual or realized return of the

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[3] Sitkin, S.B. and Pablo, Reconceptualizing the Determinants of Risk Behaviour, Academy of Management Review 17, No. 1, pp. 9-39, 1992

[4] John Sorros, N. "Return and Risk Analysis : A case study of Equity Mutual Funds Operating in the Greek Financial Market", Managerial Finance, Vol. 29, No 9, pp. 21-28, 2003

[5] Svetlana, "Testing Market Efficiency for Different Market Capitalization Funds", American Journal of Business, Vol. 23, Issue. 2, pp.17-27, 2010

[6] Niamey "Equity Mutual Funds Versus Market Performance: Illusion or Reality?", The Business Review, Vol. 11, No. 1, pp.71-75, 2011

[7] Viena "Mutual fund schemes in India – Can they Protect the Interest of the Retail Investors?", Journal of Business Management, Vol. 1, No. 1-2, pp. 81-98, 2013

[8] Shefali Jain, "Investment Performance of Equity-Linked Saving Schemes- An Empirical Study", India Journal of Finance, pp. 15- 22, 2015

portfolio with the predicted or calculated return. The market benchmark used here is S&P and CNX nifty.
The standard deviation is a measure of variability which is used as the standard measure of the total risk of individual assets and the residual risk of portfolios of assets. This can be calculated by using the formula

$$\sigma = \sqrt{\frac{1}{N}\sum_{i=1}^{N}(x_i - \mu)^2}$$

σ = standard deviation
X_i = each data value
μ = mean value of data
N = sample size

The models developed on the assumptions of 'The Capital Asset Pricing Model' and tested by Treynor (1965), Sharpe (1966), Jensen (1968) and Fama's Decomposition of Returns was used to evaluate the performance of selected growth schemes.

Sharpe Index (St) measures the risk premium of the portfolio with reference to the total amount of risk. The index St measures the slope of the line emanating from risk-free rate outward the portfolio. The larger the St, the better the portfolio has performed. St is the reward to variability of the scheme's total risk and is a summary measure of scheme's performance adjusted for risk.

Treynor Index (Tt) sums up the risk and return of a portfolio in a single number. The index measures the slope of the line emanating outward from the risk-free rate to the portfolio under consideration. Treynor index is a reward to volatility of the portfolio. The characteristic line relates the market return to a specific portfolio return without any direct adjustmentfor risk. This line can be fitted through a least square regression involving a single market portfolio. To use Treynor's measure first the CRL of portfolios are fixed by estimating the following equation:

Jensen constructed a measure of absolute performance on a risk-adjusted basis while Sharpe and Treynor models provided measures for ranking the relative performance of various portfolios on a risk-adjusted basis. Equilibrium average return on a portfolio is the benchmark. Equilibrium average return is the return of the market portfolio for a given systematic risk calculated with the following formula:

EARp = Rf + (Rm - Rf) Bp

EARp is the equilibrium return of the portfolio 'p' indicating superior / inferior performance of the portfolio's alpha ( ). Jensen's Alpha is the intercept of the CRL. If alpha is positive, the portfolio has performed better and if it is negative, scheme performance is not up to the Benchmark.
In a well-diversified portfolio, the average value of alpha of all stocks turns out to be zero.

Table 1 Annualized monthly average return of tax saving mutual funds

S.no	Schemes	Annualized average returns (in %)				
		2012-13	2013-14	2014-15	2015-16	2016-17
1.	SBI Magnum tax gain scheme 1993	1.96	1.96	-3.40	4.96	-0.29
2.	Canara Robeco equity tax saver	0.34	0.75	-2.53	5.91	0.47
3.	Hdfc taxsaver	-0.20	1.96	-2.87	5.81	0.53
4.	LIC mf tax plan	-0.75	1.79	-3.40	4.00	0.64
5.	Sahara tax gain	-0.40	2.93	-2.63	4.98	0.37
6.	Franklin India tax shield	-0.87	2.53	-2.52	4.80	0.66
7.	ICICI Prudential tax plan	-0.45	1.68	-3.07	6.39	0.41
8.	UTI- ELSS-growth	-1.06	2.52	-3.19	4.13	0.09
9.	Escorts tax plan	2.39	2.66	-5.57	4.12	-0.28

10.	Hdfc long term advantage fund	-0.20	1.60	-3.16	5.31	0.92
11.	ING tax savings fund	0.01	0.65	-4.42	5.48	0.66
12.	Sundaram tax saver	-1.30	2.84	-2.83	4.27	-0.10
13.	Reliance tax saver (ELSS) fund	-0.33	1.08	-2.48	4.55	0.69
14.	L&T tax saver fund	-0.32	0.94	-4.30	6.08	-0.03
15.	Kotak tax saver-scheme	0.72	1.85	-3.85	4.77	0.03
16.	Bnp paribas tax advantage plan	-0.75	3.28	-4.97	4.00	-0.07
17.	Fidelity tax advantage fund	0.33	2.30	-2.40	4.89	0.91
18.	DWS tax saving fund	Na	3.10	-3.44	4.15	-0.49
19.	Birla sun life tax plan	Na	1.72	-3.24	4.59	0.21
20.	HSBC tax saver equity fund	Na	1.83	-2.33	4.65	-0.10
21.	Religare tax plan	Na	2.12	-3.23	5.35	0.29
22.	DSP black rock tax saver fund	Na	3.20	-3.14	5.23	0.17
23.	Taurus tax shield	Na	4.52	-2.40	5.03	0.33
24.	Birla sun life relief 96	Na	Na	-3.63	5.47	-0.32
25.	JM tax gain fund -	Na	Na	-6.38	4.08	-0.81
26.	Bharti axa tax advantage fund-eco plan	Na	Na	Na	5.98	-0.81
27.	Bharti axa tax advantage fund-regular plan	Na	Na	Na	5.95	-0.81
28.	IDFC tax advantage (ELSS) fund	Na	Na	Na	4.28	0.16
29.	Quantum tax saving fund	Na	Na	Na	4.72	0.81
30.	JP Morgan India tax advantage fund	Na	Na	Na	3.90	0.65
31.	Edelweiss ELSS fund	Na	Na	Na	3.65	0.27
32.	Axis tax saver fund	Na	Na	Na	Na	1.56
	Bench mark					
	S&P CNX nifty	**0.054**	**0.13**	**-0.15**	**0.24**	**0.045**

Source: Historical NAV report -Association of mutual funds in India (AMFI)

INTERPRETATION: 1

From Table 1, it is evident that all the schemes performed well during the financial year 2013-15. Five schemes has performed well and produced more than two per cent monthly average return. 11 schemes performed moderately, produced more than one per cent monthly average return. 16 schemes underperformed and produced lesser than one per cent monthly average return. ICICI prudential tax plan performed well and produced maximum of 6.39 per cent of average monthly return during the period 2015-16. Average monthly return of all the schemes during the year 2009-10 is higher than the risk free market return (3.5 per cent). All the schemes underperformed, produced negative return during the year.

2012-13 and it is higher than the stock market indices of S&P CNX nifty (-0.15 per cent), the performance decline in 2012-13 is due to the global economic crises. All the schemes performed better during the year 2013-14 than 2012-13.

Table 2 : Standard Deviation of Tax Saving mutual funds

S.no	Schemes	Standard deviation				
		2012-13	2013-14	2014-15	2015-16	2016-17
1.	SBI Magnum tax gain scheme 1993	6.24	6.52	10.81	8.74	4.69
2.	Canara Robeco equity tax saver	6.67	9.90	11.78	9.25	1.55
3.	Hdfc taxsaver	6.93	7.74	10.97	7.71	1.77
4.	LIC mf tax plan	7.55	8.59	10.92	9.09	0.83
5.	Sahara tax gain	5.72	8.19	9.90	9.12	1.21
6.	Franklin India tax shield	5.56	7.62	10.22	6.60	2.20
7.	ICICI Prudential tax plan	7.71	7.98	12.45	7.53	1.38
8.	UTI- ELSS-growth	6.48	7.62	9.59	7.37	0.30
9.	Escorts tax plan	5.33	8.73	8.09	8.74	0.91
10.	Hdfc long term advantage fund	5.45	6.55	10.30	7.50	4.74
11.	ING tax savings fund	7.91	8.09	13.18	9.45	4.73
12.	Sundaram tax saver	7.43	8.92	8.64	9.55	5.00
13.	Reliance tax saver (ELSS) fund	7.04	8.60	8.97	7.26	5.25
14.	L&T tax saver fund	6.23	7.36	13.46	9.70	5.13
15.	Kotak tax saver-scheme	7.60	7.89	11.20	9.31	4.84
16.	Bnp paribas tax advantage plan	8.52	9.83	10.33	7.02	5.26
17.	Fidelity tax advantage fund	5.99	7.33	9.92	6.97	4.53
18.	DWS tax saving fund	Na	9.44	11.21	6.89	5.12
19.	Birla sun life tax plan	Na	8.33	10.38	8.70	4.42
20.	HSBC tax saver equity fund	Na	8.33	8.63	7.66	5.16
21.	Religare tax plan	Na	6.36	10.44	7.22	4.43
22.	DSP black rock tax saver fund	Na	9.72	10.22	7.64	4.77
23.	Taurus tax shield	Na	6.85	11.88	11.05	4.98
24.	Birla sun life relief 96	Na	Na	12.58	9.93	1.05
25.	JM tax gain fund -	Na	Na	14.25	8.38	4.87

S.no		Na	Na	Na	11.53	5.47
26.	Bharti axa tax advantage fund-eco plan	Na	Na	Na	11.53	5.47
27.	Bharti axa tax advantage fund-regular plan	Na	Na	Na	11.57	5.47
28.	IDFC tax advantage (ELSS) fund	Na	Na	Na	7.10	5.03
29.	Quantum tax saving fund	Na	Na	Na	6.63	4.45
30.	JP Morgan India tax advantage fund	Na	Na	Na	7.29	4.74
31.	Edelweiss ELSS fund	Na	Na	Na	7.75	4.65
32.	Axis tax saver fund	Na	Na	Na	Na	3.59
	Bench mark					
	S&p cnx nifty	6.641	8.759	12.09	9.267	5.539

Source: Historical NAV report -Association of mutual funds in India (AMFI)
INTERPRETATION: TABLE 2
Table 2 Results revealed Standard Deviation of all selected tax saving mutual funds. It shows that all the schemes had highest volatility during the period 2014-15. The scheme with lowest standard deviation is **Escorts Tax Plan** with the standard deviation value of 8.09 in the year of 2014 - 15.

The average market risk of all schemes is lower during the period 2016-17. It can be noted that many mutual funds volatility is higher than Stock Market Volatility. Generally it is said that mutual funds are risk diversified but it is proofed that market risk of mutual funds are goes along with the stock market index even some mutual funds volatility is higher than the stock market. Other than mutual fund features like diversification of fund, fund managed By AMC, no entry and exit charges, etc.,

all mutual funds are determined as risk less instrument for the retail investors.

Sharpe ratio measures the total risk of the funds on the basis of return per unit of   total risk. While a high and positive Sharpe ratio shows a superior risk-adjusted performance of a fund, a low and negative Sharpe ratio is an indication of unfavorable performance.

Table 3 shows Sharpe ratio of tax saving mutual funds

S.no	Schemes	Sharpe ratio				
		2012-13	2013-14	2014-15	2015-16	2016-17
1.	SBI Magnum tax gain scheme 1993	0.31	0.29	-0.32	0.56	-0.07
2.	Canara Robeco equity tax saver	0.05	0.07	-0.22	0.63	0.28
3.	Hdfc taxsaver	-0.03	0.25	-0.26	0.75	0.28
4.	LIC mf tax plan	-0.10	0.20	-0.31	0.44	0.73
5.	Sahara tax gain	-0.08	0.35	-0.27	0.54	0.27
6.	Franklin India tax shield	-0.16	0.33	-0.25	0.72	0.29
7.	ICICI Prudential tax plan	-0.06	0.21	-0.25	0.84	0.28
8.	UTI- ELSS-growth	-0.17	0.33	-0.34	0.56	0.18
9.	Escorts tax plan	0.44	0.30	-0.69	0.47	-0.34

10.	Hdfc long term advantage fund	-0.04	0.24	-0.31	0.70	0.19
11.	ING tax savings fund	0.00	0.08	-0.34	0.58	0.13
12.	Sundaram tax saver	-0.05	0.31	-0.33	0.44	0.21
13.	Reliance tax saver (ELSS) fund	-0.02	0.12	-0.28	0.62	0.12
14.	L&T tax saver fund	-0.01	0.12	-0.32	0.62	-0.01
15.	Kotak tax saver-scheme	0.03	0.23	-0.35	0.51	0.00
16.	Bnp paribas tax advantage plan	-0.03	0.33	-0.48	0.57	-0.02
17.	Fidelity tax advantage fund	0.01	0.31	-0.25	0.70	0.19
18.	DWS tax saving fund	Na	0.32	-0.31	0.60	-0.10
19.	Birla sun life tax plan	Na	0.20	-0.32	0.52	0.04
20.	HSBC tax saver equity fund	Na	0.22	-0.27	0.60	-0.03
21.	Religare tax plan	Na	0.33	-0.31	0.74	0.06
22.	DSP black rock tax saver fund	Na	0.33	-0.31	0.68	0.03
23.	Taurus tax shield	Na	0.66	-0.20	0.45	0.06
24.	Birla sun life relief 96	Na	Na	-0.29	0.55	-0.33
25.	JM tax gain fund -	Na	Na	-0.45	0.48	-0.17
26.	Bharti axa tax advantage fund-eco plan	Na	Na	Na	0.52	-0.16
27.	Bharti axa tax advantage fund-regular plan	Na	Na	Na	0.51	-0.16
28.	IDFC tax advantage (ELSS) fund	Na	Na	Na	0.60	0.02
29.	Quantum tax saving fund	Na	Na	Na	0.71	0.17
30.	JP Morgan India tax advantage fund	Na	Na	Na	0.53	0.13
31.	Edelweiss ELSS fund	Na	Na	Na	0.47	0.05
32.	Axis tax saver fund	Na	Na	Na	Na	0.42
	Bench mark					
	S&p cnx nifty	0.01	0.05	-0.07	0.11	0.01

Source: Historical NAV report -Association of mutual funds in India (AMFI)
INTERPRETATION: TABLE 3
Table 3 results revealed Sharpe ratio of selected equity linked savings schemes of mutual funds. It is generally assumed that people will prefer for 'more return' and 'less risk'. Risk in the context of the Sharpe ratio is return volatility. An investor would rank portfolios by their Sharpe ratios. Portfolios with higher sharp and lower volatilities are preferred than portfolios with lower Sharpe and higher volatilities.
Table 3 reveals that no fund has given positive Sharpe value during the period 2014-15. The highest Sharpe measure obtained (0.84) is by ICICI prudential tax plan during 2015-16, the lowest Sharpe measure obtained (-0.69) is by escorts tax plan during 2014-15. In comparison, the Sharpe measure of benchmark S&P CNX nifty is

lower than all schemes during the period of study.

Table 4   Treynor ratio of tax saving mutual funds

S.no	Schemes	Treynor ratio				
		2012-13	2013-14	2014-15	2015-16	2016-17
1.	SBI Magnum tax gain scheme 1993	1.92	2.75	-3.46	5.45	-0.43
2.	Canara Robeco equity tax saver	0.29	0.76	-2.40	6.06	0.75
3.	Hdfc taxsaver	-0.21	2.32	-2.93	7.19	0.77
4.	LIC mf tax plan	-0.66	1.95	-3.44	4.18	0.78
5.	Sahara tax gain	-0.48	3.28	-2.92	5.20	0.51
6.	Franklin India tax shield	-1.06	2.96	-2.70	6.99	0.85
7.	ICICI Prudential tax plan	-0.47	2.12	-2.83	8.12	0.53
8.	UTI- ELSS-growth	-1.04	3.02	-3.64	5.35	0.07
9.	Escorts tax plan	4.03	2.95	-7.76	4.87	-0.42
10.	Hdfc long term advantage fund	-0.29	2.32	-3.43	6.75	1.20
11.	ING tax savings fund	-0.02	0.83	-3.69	5.53	0.85
12.	Sundaram tax saver	-2.14	2.88	-3.81	4.25	-0.18
13.	Reliance tax saver (ELSS) fund	-0.35	1.24	-3.15	6.22	0.83
14.	L&T tax saver fund	-0.39	1.18	-3.50	6.09	-0.08
15.	Kotak tax saver-scheme	0.61	2.24	-3.75	4.88	-0.01
16.	Bnp paribas tax advantage plan	-0.60	1.85	-13.20	5.47	-0.13
17.	Fidelity tax advantage fund	0.31	2.89	-2.64	6.76	1.24
18.	Dws tax saving fund	Na	2.94	-3.33	5.75	-0.70
19.	Birla sun life tax plan	Na	2.01	-3.39	5.01	0.25
20.	HSBC tax saver equity fund	Na	2.05	-2.94	5.86	-0.16
21.	Religare tax plan	Na	3.40	-3.39	7.04	0.39
22.	DSP black rock tax saver fund	Na	3.33	-3.35	6.48	0.19
23.	Taurus tax shield	Na	4.64	-2.29	4.43	0.42

24.	Birla sun life relief 96	Na	Na	-3.21	5.21	-0.44
25.	JM tax gain fund -	Na	Na	-5.12	4.93	-1.15
26.	Bharti axa tax advantage fund-eco plan	Na	Na	Na	5.10	-1.04
27.	Bharti axa tax advantage fund-regular plan	Na	Na	Na	5.05	-1.04
28.	IDFC tax advantage (ELSS) fund	Na	Na	Na	5.95	0.17
29.	Quantum tax saving fund	Na	Na	Na	6.98	1.13
30.	JP Morgan India tax advantage fund	Na	Na	Na	5.65	0.81
31.	Edelweiss ELSS fund	Na	Na	Na	4.50	0.35
32.	Axis tax saver fund	Na	Na	Na	Na	-7.43
	Bench mark					
	S&p cnx nifty	0.02	0.09	-0.186	0.2053	0.01

Source: Historical NAV report -Association of mutual funds in India (AMFI)

INTERPRETATION: TABLE 4

Treynor is a measurement of the returns earned in excess of that which could have been earned on an investment that has no diversifiable risk per each unit of market risk assumed. Table 4 shows Treynor measure of equity linked tax saving fund.. From analysis it is noted that

All the schemes are performed well than the stock market index S&P CNX nifty during the entire period of study.

Alpha is a risk-adjusted measure return on an investment. It is the return in excess of the compensation for the risk borne. The alpha measure shows the level of risk associated with the return. If alpha(α_i) < 0, the investment has earned too little for its risk (or, was too risky for the return),

if alpha(α_i) = 0, the investment has earned a return adequate for the risk taken and if alpha(α_i) > 0, the investment has a return in excess of the reward for the assumed risk. Alpha ratio is the difference between the average realized return of a portfolio manager with private information and the expected return of the passive strategy based upon public information only with equal systematic risk. Taurus tax shield-growth option and fidelity tax advantage fund- growth option does better during the period of study.

Table 5   Jensen ratio of tax saving mutual funds

S.no	Schemes	Jensen Ratio				
		2012-13	2013-14	2014-15	2015-16	2016-17
1.	SBI Magnum tax gain scheme 1993	1.90	1.86	-3.25	4.74	-0.33
2.	Canara Robeco equity tax saver	0.28	0.63	-2.37	5.67	0.43
3.	Hdfc taxsaver	-0.26	1.85	-2.72	5.61	0.49
4.	LIC mf tax plan	-0.81	1.68	-3.25	4.74	-0.33

5.	Sahara tax gain	-0.45	2.82	-2.50	4.75	0.32
6.	Franklin India tax shield	-0.92	2.42	-2.38	4.63	0.62
7.	ICICI Prudential tax plan	-0.51	1.58	-2.90	6.19	0.37
8.	UTI- ELSS-growth	-1.11	2.41	-3.06	3.94	0.05
9.	Escorts tax plan	2.34	2.55	-5.47	3.91	-0.32
10.	Hdfc long term advantage fund	-0.26	1.50	-3.02	5.12	0.88
11.	ING tax savings fund	-0.05	0.55	-4.23	5.25	0.62
12.	Sundaram tax saver	-1.35	2.72	-2.73	4.10	-0.15
13.	Reliance tax saver (ELSS) fund	-0.38	0.97	-2.37	4.30	0.64
14.	L&T tax saver fund	-0.37	0.84	-4.11	5.86	-0.07
15.	Kotak tax saver-scheme	0.66	1.74	-3.69	4.51	-0.02
16.	Bnp paribas tax advantage plan	-0.81	1.82	-3.92	3.70	-0.12
17.	Fidelity tax advantage fund	0.28	2.19	-2.27	4.66	0.86
18.	Dws tax saving fund	Na	2.97	-3.28	4.08	-0.53
19.	Birla sun life tax plan	Na	1.61	-3.10	4.37	0.17
20.	HSBC tax saver equity fund	Na	1.71	-2.21	4.46	-0.14
21.	Religare tax plan	Na	2.03	-3.09	5.16	0.25
22.	DSP black rock tax saver fund	Na	3.07	-3.00	5.03	0.13
23.	Taurus tax shield	Na	4.40	-2.24	4.77	0.28
24.	Birla sun life relief 96	Na	Na	-3.45	5.22	-0.36
25.	JM tax gain fund -	Na	Na	-6.18	3.88	-0.85
26.	Bharti axa tax advantage fund-eco plan	Na	Na	Na	5.71	-0.86
27.	Bharti axa tax advantage fund-regular plan	Na	Na	Na	5.68	-0.86
28.	IDFC tax advantage (ELSS) fund	Na	Na	Na	4.10	0.12
29.	Quantum tax saving fund	Na	Na	Na	4.55	0.76
30.	JP Morgan India tax advantage fund	Na	Na	Na	3.72	0.61
31.	Edelweiss ELSS fund	Na	Na	Na	3.45	0.23
32.	Axis tax saver fund	Na	Na	Na	Na	1.53
	Bench mark (S&P CNX Nifty)	0.01	0.10	0.18	0.25	0.01

INTERPRETATION: TABLE 5

Table 5 shows Jensen measures of equity linked tax saving fund for the year   2012-13 till 2016-17. It is noted that the stock market has equivalent return for the risk. Stock market alpha is zero for the entire study period. It can be said that 2015-16 is glorious time for the investor, invariably all the mutual funds are produced better return during this period. ICICI Prudential tax plan seems to be a good plan; it has given highest Jensen Returns measure of 6.19 with the comparison of all other tax saving mutual funds during the period of 2012-17.

There are various tools help investors to measure the performance of mutual funds; decision cannot be taken by referring the results of one tool. It is necessary to use number of tools to evaluate the performance. NAV return shows the actual return on the investment over a period of time. The past performance will not guarantee the future still it is important to analyze the past data to forecast the future. The annualized monthly return of Taurus tax shield-growth option and Fidelity tax advantage fund-growth option is good during the period of study.

Results of the study

Thirty two equity linked savings schemes annualized monthly return has been identified in Table 1 with Bench mark S&P CNX Nifty. From table 1, it is evident that all the schemes performed well during the financial year 2015-17. Five schemes has performed well and produced more than two per cent monthly average return. 11 schemes performed moderately, produced more than one per cent monthly average return. 16 schemes underperformed and produced lesser than one per cent monthly average return. ICICI prudential tax plan performed well and produced maximum of 6.39 per cent of average monthly return during the period 2015-16. Average monthly return of all the schemes during the year 2015-16 is higher than the risk free market return (3.5 per cent). All the schemes underperformed, produced negative return during the   year 2014-15 and it is higher than the stock market indices of S&P CNX Nifty (-0.15 per cent), the performance decline in 2014-15 is due to the global economic crises. All the schemes performed better during the year 2013-14 than 2012-13.

Standard deviation is a tool that shows the volatility of the fund. It is advisable not to invest in a fund which is unstable. From the sample data, it is analyzed that Escorts tax plan-growth, HDFC long term advantage fund growth option has lower volatility during the period of study than all other schemes.

Sharpe ratio measures total risk of a portfolio, it is useful measure to analyze investment area that are in similar type. Higher Sharpe ratio shows better performance with lower market risk. Taurus tax shield-growth option and Religare tax plan – growth plan adjusted with market return and produced better Sharpe ratio during the study period.

Treynor ratio uses systematic risk, higher the Treynor ratio, better the performance under analysis. Taurus tax shield-growth option and Religare tax plan – growth performed well in the study period.

Jensen ratio is the difference between the average realized return of a portfolio manager with private information and the expected return of the passive strategy based upon public information only with equal systematic risk. Taurus tax shield-growth option and Fidelity tax advantage fund- growth option does better during the period of study.

Conclusion

This paper evaluated the risk-adjusted performance of tax saving mutual funds in India. Analyzing the seasonality of funds return and benchmark return volatility   in terms of the mean adjusted.

Yearly standard deviation from the daily return obtained from AMFI reports and NSE reports. Examining the fund volatility, it is found that the highest volatility occurs in the period of 2014-15. Risk- adjusted performance is measure by Sharpe, Treynor and Jensen. From these measures it is found that there are certain schemes which underperform than the benchmark index that shows a strong negative risk–return relation. There are certain schemes that outperform than the Benchmark index with Positive risk- return relation.

Investor who wants to invest into tax saving mutual funds needs to make two decisions. One is which fund to hold and how much money to invest each. This study helps the investors to choose the suitable schemes for investment. It can also be stated the past performance of the funds does not reflect in future. Most of the schemes performed well in the initial period. This study analysis shows all the tax saving mutual funds is having volatility but not all the schemes volatility is lesser than the benchmark S&P CNX nifty. Most of the schemes are given higher return than the benchmark S&P CNX nifty.

All the schemes are p e r f o r m e d in same pattern towards market. Even though the fund movements are similar, the degree of change is not same in all the schemes. Investors' interest and keen updating of the market will help them to attain   their expected return from the equity linked savings schemes of tax saving mutual funds.

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