International Business Management 9 (3): 267-272, 2015
ISSN: 1993-5250

Indian Mutual Fund Industry: An Impact of Investor's Perception and Performance of Tax Saving Schemes in Mutual Fund

M. Mohanasundari and P. Vidhyapriya
Department of Management Studies, Kongu Engineering College,
Perundurai, 638052 Erode DT, Tamil Nadu, India

Abstract: The mutual fund industry plays a vital role in the financial intermediation in the Indian economy, so mutual fund collectively has an ability to draw investment funds. The global financial and economic crisis that unfolded in 2007 and it made an impact both on the amount of savings and distribution of resources among mutual fund classes with varying degrees of risk. In this study, an attempt has been made to understand the investor's perception about tax savings schemes in mutual fund. The investor's perception is collected through questionnaire method and being analyzed using percentage analysis, χ^2-test and factor analysis. The performance is analyzed using NAV of the schemes between the years 2011-2014 and it is being collected from AMFI and it is analyzed using sharpe, Treynors and Jensens index by comparing the daily returns and it has been compared with the BSE SENSEX.

Key words: Tax saving scheme, perception, performance, risk, LIC

INTRODUCTION

The mutual fund industry in India by the entry of Unit Trust of India (UTI) in 1963 by the government of India. UTI was a dominant player until the year 2000 in the mutual fund industry with the total asset of over Rs. 76,547 crores as of March 31, 2000. The UTI is being governed by the special legislation called Unit Trust of India Act, 1963. In the next stage, the public sectors banks and insurance companies in the year 1987 were allowed to be permitted to set up mutual funds in India. Next, two insurance companies LIC and GIC were also been established. SEBI (Securities Exchange Board of India) formulated the mutual fund regulations in the year 1993 which was recognized as comprehensive regulatory in the mutual fund industry. And finally, many mutual funds have been set up by the private and joint sectors.

Literature review: Saha and Dey (2011) made an analysis of factors affecting investors perception of mutual fund investment made to evaluate the prospects of any kind of product irrespective of its nature, one should be aware of the behavior of the consumer. The study focuses on measuring the investors expectation and their preference. It also attempts to gauge the factors that they take into consideration before making any investment in mutual fund, as well as the awareness level among individual investors regarding mutual fund investment.

Bhuvaneswari (2013) made a study on investor's perception towards equity/tax saving mutual funds where researcher carried out the study with the objective of finding out the investor's perception towards equity/tax saving mutual funds. The researcher is interested in identifying, the major factors that contribute towards investor's perception in the area of equity/tax saving mutual funds. We used the descriptive type of research design in this study.

Santhi and Gurunathan (2012) made an analysis of risk-adjusted return on tax saving mutual fund schemes in India. In this study, an attempt has been made to evaluate the performance of 32 growth-oriented open ended Equity Linked Savings Schemes (ELSS) of tax saving mutual funds in India. Performance has been analyzed by comparing the monthly returns of the funds with that of Indian Stock Market Benchmark S&P CNX NIFTY.

Jawahar Babu and Vasu (2012) made an analysis on the performance of tax saving funds of selected asset management companies: a comparative analysis stating that mutual funds, also offer good investment opportunities to the investors. Like all investments, they also carry certain risks. The investors should compare the risks and expected yields after adjustment of tax on various instruments while taking investment decisions. With an objective to make, the investors aware of performance of mutual funds an attempt has been made to provide information on the comparison of tax saving funds of selected asset management companies, such as HDFC, Franklin India, Reliance, SBI and ICICI which may help the investors in taking investment decisions. The analysis is also compared with the calculations based on

Corresponding Author: M. Mohanasundari, Department of Management Studies, Kongu Engineering College, Perundurai, 638052 Erode DT, Tamil Nadu, India

the standard deviation, beta values, benchmarks and also sharpe ratio, Treynors ratio, Jensen measures for the period 2007-2011.

Sivakumar *et al.* (2010) made a performance evaluation of mutual fund industry in india and this study evaluates the performance of mutual funds players in India based on their resource mobilization during the past decade. The players are broadly classified into private and public participants. The study revealed that there is significant contribution by all the participants for the growth of the mutual fund industry in India. At the same time, this study also found that the private participants play a greater role in resource mobilization compared to those of public sector.

Kumar and Bj (2012) studied about determinants of mutual fund performance with specific reference to Equity Linked Savings Scheme (ELSS), tax saver fund, a bibliographic review it stated that mutual fund is a prospective investment vehicle that caters to the requirement of all categories of investors. Though, the funds are customized financial offerings in a larger perspective, investors tend to rationalize their investment decision based on the funds performance. Fund performance analysis and its determinants were widely analysed over a longer tenure at market and fund specific level.

Need for the study: This study of investors perception that is being conducted in mutual funds at Erode helps to understand the people and significant impact on investments. And also, the study on the performance of the selected tax saving mutual funds helps to analyze, the performance level of those schemes using the returns and risk. This performance analysis helps in suggesting the investors about the best performing schemes for the investors to invest, since people tend to invest in schemes which gives more returns and less risk.

Objectives

Primary objective:

- To understand the investors perception towards their investment in mutual fund
- To know the various factors that may affect selection of mutual fund schemes/fund directly or indirectly

Secondary objectives:

- To study the performance of the selected tax saving schemes in mutual fund
- To measure the return earned by the sample mutual funds schemes and compare against the market portfolio returns to distinguish the performers from the laggards
- To suggest the investors best performing scheme in the selected mutual

MATERIALS AND METHODS

Data source: The data for analyzing the perception of the investors were collected through questionnaire in the Erode from the ELSS investors and performance was being evaluated for the years between years 2011-2014 from AMFI (Association of Mutual Fund in India). And the NAV of top 10 performing funds were selected and daily returns were being evaluated. The risk free return is the average yield (5.5%) from SBI's 40-90 days term deposit.

Research tools

Research 1: After the data is being collected through survey, the data is being entered in SPSS (Statistical Package for Social Sciences) and the following analysis is being made:

- Percentage analysis
- Factor analysis

Research 2: The performance is being evaluated using the following tools:

Returns: Daily NAV returns of selected tax saving mutual fund schemes are used for computing annual returns and for measuring the return and risk. Mean returns are calculated by averaging the monthly returns over the relevant time period:

$$\text{Returns of funds} = \frac{\text{Current value of units} - \text{Previous value of units}}{\text{Previous value}} \times 100\,(\text{units})$$

Standard deviation: The standard deviation is a measure of variability which is used as the standard measure of the total risk of individual assets and residual risk of portfolios of assets. This can be calculated by using the equation:

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

Where:

σ = Standard Deviation
x_i = Each data value
μ = Mean value of data
N = Sample size

Beta: The beta of a stock or portfolio is a number describing the volatility of an asset in relation to the volatility of the benchmark. An asset has a beta of zero, if its returns change independently of changes in the market returns. A positive beta means that the asset's

returns generally follow the market returns. A negative beta means that the asset's returns generally move opposite to the market returns:

$$\beta = \frac{\text{Covariance } (r_p, r_m)}{\text{Variance } (r_m)}$$

Sharpe index: It is the ratio of the reward or risk premium to the variability of return or risk as measured by the standard deviation of return. The index assigns the highest values to assets that have best risk adjusted average rate of return. The equation for calculating Sharpe Ratio (SR) may be stated as:

$$\text{Sharp Ratio (SR)} = \frac{r_p - r_f}{\sigma_p}$$

Where:

r_p = Realized return on the portfolio
r_f = Risk-free rate of return
σ_p = Standard deviation of the portfolio

Treynors index: Treynor ratio, the performance measure developed by Jack Treynor is referred to as Treynor or reward to volatility ratio. It is the ratio of the reward or risk premium to the volatility of return, as measured by the portfolio beta. The equation for calculating Treynor Ratio (TR) may be stated as follows:

$$\text{Treynor Ratio (TR)} = \frac{r_p - r_f}{\beta_p}$$

where, β_p is portfolio beta.

Jensens index: Jensen ratio is another type of risk-adjusted performance measure that was developed by Michael Jensen and is referred to as the Jensen measure or ratio. This ratio attempts to measure the differential between the actual return earned on a portfolio and the return expected from the portfolio given its level of risk. The formula for calculating Jensen Ratio (JR) may be stated as:

$$\text{Jenson Ratio (JR)} = r_p - r_f + \beta_p (r_m - r_f)$$

where, r_m is market return.

RESULTS AND DISCUSSION

Analysis and interpretation

Investors perception on tax saving schemes: From Table 1, we could infer that among 75 investors, most of the investors about 33 investors, i.e., 44% watch the fund value weekly in the tax savings schemes in mutual fund.

Table 1: Investor's watch about fund value

Validity	Frequency	Percentage	Cumulative (%)
Daily	13	17.3	17.3
Weekly	33	44.0	61.3
Monthly	23	30.7	92.0
Very rarely	6	8.0	100.0
Total	75	100.0	-

Table 2: Investor's grievances

Validity	Frequency	Percentage	Cumulative(%)
Delay in refund	18	24.0	24.0
Delay in switch over	19	25.3	49.3
Non receipt of the unit certificates	7	9.3	58.7
Lower dividends	25	33.3	92.0
Delay and non payment of dividends	6	8.0	100.0
Total	75	100.0	-

Table 3: Services offered by AMC

Validity	Frequency	Percentage	Cumulative(%)
Value added services on product information	23	30.7	30.7
Investment strategies	26	34.7	65.3
Procedure on filling/submitting application form	5	6.7	72.0
Advice on financial planning	17	22.7	94.7
Basic service on the schedule details	4	5.3	100.0
Total	75	100.0	-

Table 4: Overall benefits of tax saving schemes

Validity	Frequency	Percentage	Cumulative(%)
Highly satisfied	11	14.7	14.7
Satisfied	56	74.7	89.3
Neither satisfied nor dissatisfied	7	9.3	98.7
Dissatisfied	1	1.3	100.0
Total	75	100.0	-

Table 5: KMO and Bartlett's test

Tests	Values
Kaiser-Meyer-Olkin measure of sampling adequacy	0.753
Bartlett's test of sphericity	
Approx. χ^2	376.793
df	66.000
Sig.	0.000

From Table 2, we can infer that 25 investors, i.e., 33.3% of 75 investors have lower dividends as their investor's grievances in ELSS mutual fund. From Table 3, we can infer that 26 investor's, i.e., 34.7% among 75 investors are given investment strategies, as services from AMC (Asset Management Company) about the tax savings schemes in the mutual fund.

From Table 4, we can infer that about 56 investor's, i.e., 74.7% of 75 investors are satisfied about the overall benefits in the tax saving schemes in mutual fund.

Factors analysis: Factors influencing investors perception on mutual fund performance have been analyzed. The generated score of KMO is 0.753, reasonably supporting the appropriateness of using factor analysis. As per Kaiser level, 0.753 is middling, almost meritorious. Significance value of Bartlett's test of sphericity <0.05 indicates that these data are approximately multivariate normal and acceptable for factor analysis (Table 5).

It can be concluded that these 8 factors are extracted from the 12 variables explaining about 66.311% of variance (Table 6, 7 and Fig. 1).

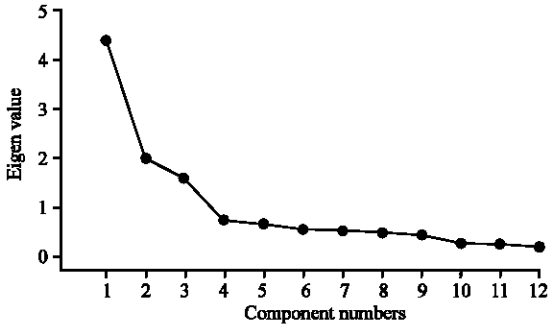

Fig. 1: Screen plot of eigen values

Table 6: Total variance explained

Components	Total	Variance (%)	Cum. (%)
Initial eigen values			
1	4.399	36.657	36.657
2	1.979	16.490	53.147
3	1.580	13.165	66.311
4	0.729	6.077	72.388
5	0.657	5.474	77.862
6	0.553	4.607	82.469
7	0.514	4.285	86.755
8	0.479	3.989	90.744
9	0.431	3.592	94.335
10	0.261	2.179	96.514
11	0.242	2.020	98.535
12	0.176	1.465	100.000
Extraction sums of squared loadings			
1	4.399	36.657	36.657
2	1.979	16.490	53.147
3	1.580	13.165	66.311
Rotation sums of squared loadings			
1	3.125	26.044	26.044
2	2.819	23.493	49.537
3	2.013	16.774	66.311

Extraction method: Principal component analysis

Table 7: Rotated component matrix

	Components		
Factors	1	2	3
Investor consider government policies	0.845	-	0.100
Investor consider political factors	0.809	0.199	-
Investor consider inflation	0.659	0.327	-0.239
Investor consider national and international events	0.650	0.271	0.402
Investor consider global economy and markets	0.551	-	0.500
Investor consider financial position of AMC	0.107	0.819	-
Investor consider nature of business	-	0.793	0.256
Investor consider management strategies	0.388	0.755	-
Investor consider securities market and economy	0.349	0.704	-0.162
Investor consider nature and natural disaster	-	-	0.829
Investor consider terrorism	0.552	-	0.665
Investors consider management affairs	-	0.467	0.553

Extraction method: Principal component analysis; Rotation method: Varimax with Kaiser normalization; rotation converged in 7 iterations

From Table 8, we can infer that there are 3 factors that the investors consider while deciding investment based upon the performance of the tax saving scheme in the mutual fund they are:

Economic factor:

- Investor's consider government policies as factor
- Investor's consider political factors as factor
- Investor's consider inflation as a factor

Regulatory and management:

- Investor's consider financial position of AMC as a factor
- Investor's consider nature of business as a factor
- Investor's consider management strategies as a factor

External factor:

- Investor's consider nature and natural disaster as a factor
- Investor's consider terrorism as a factor
- Investor's consider management affairs as a factor

Performance of selected tax saving schemes: Annualized yearly returns of top 10 ELSS and of the benchmark, SENSEX are presented in Table 9. From Table 9, it is evident that all the schemes performed well during the financial year 2013-2014 compared to other 2 years. It has been seen through Table 9 that in the year 2011-2012, ICICI Pru right fund has performed well in all the 3 years having 0.041 return in the year 2011-2012 and 0.067 return in the year 2012-2013 and 2013-2014, it has been 0.80. And also, it has performed well when compared to SENSEX also.

The scheme with higher standard deviation implies higher risk. Table 10 shows the standard deviations of all

Table 8: Component transformation matrix

Components	1	2	3
1	0.733	0.615	0.290
2	0.274	-0.657	0.702
3	-0.622	0.436	0.650

Extraction method: Principal component analysis; Rotation method: Varimax with Kaiser normalization

Table 9: Annualized daily average returns of tax saving scheme

Close ended tax saving schemes in mutual fund	2011-2012	2012-2013	2013-2014
ICICI Pru right fund (G)	0.041	0.067	0.080
SBI tax advantage Sr-2 (G)	-	0.069	0.070
IDFC tax saver fund (G)	0.002	0.043	0.074
SBI tax advantage Sr-1 (G)	-0.015	0.044	0.060
Tata tax advantage fund-1 (G)	0.017	0.028	0.051
Religare invesco AGILE tax (G)	-0.009	0.031	0.076
UTI master equity plan (US)	0.007	0.028	0.042
UTI long term advantage S2 (G)	0.000	0.032	0.042
Reliance ELSF-series 1 (G)	0.016	0.049	0.039
UTI long term advantage (G)	-0.010	0.026	0.032
SENSEX	0.008	0.032	0.051

Table 10: Standard deviation of tax saving schemes

Close ended tax saving schemes in mutual fund	2011-2012	2012-2013	2013-2014
ICICI Pru right fund (G)	0.888	0.604	0.905
SBI tax advantage Sr-2 (G)	-	0.836	0.895
IDFC tax saver fund (G)	1.073	0.827	0.975
SBI tax advantage Sr-1 (G)	1.173	0.807	0.839
Tata tax advantage fund-1 (G)	0.934	0.752	0.959
Religare invesco AGILE tax (G)	1.040	0.795	0.974
UTI master equity plan (US)	1.091	0.826	1.063
UTI long term advantage S2 (G)	1.068	0.789	1.038
Reliance ELSF-series 1 (G)	1.082	0.751	0.919
UTI long term advantage (G)	1.031	0.781	1.005
SENSEX	1.357	0.851	1.109

selected tax saving mutual funds. It shows that all the schemes experienced the highest volatility during 2011-2012. The scheme with lowest standard deviation in 2011-2012 is ICICI Pru with 0.888. The investors must be aware of their investment scheme and should choose schemes not only by considering the return but also by taking into account the associated volatility (risk) of the scheme.

The risk free rate has been taken from the risk free rate of SBI on whole, since it cannot be calculated on own. 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 11 shows the sharpe ratio of selected ELSS of mutual funds. It is generally assumed that people prefer 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 highersharpe ratio (lower volatilities) are preferred to portfolios with lower sharpe ratio (higher volatilities). It is seen that there is no positive sharpe value in the year 2011-2012 and the highest positive value is given by ICICI Pru in years 2012-2013.

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 12 shows the Treynor measures of equity-linked tax saving funds. The higher the Treynor ratio, the better the performance under analysis. The UTI long term advantage has given a highest positive value of 0.594 in the year 2011-2012 and Tata tax advantage 1.368 in the year 2012-2013 and Religare invesco, it has given highest negative value of -14.556.

Jensen ratio is another type of risk-adjusted performance measure that was developed by Michael Jensen and is referred to as the Jensen measure or ratio. This ratio attempts to measure the differential between

Table 11: Sharpe ratio of tax saving schemes in mutual fund

Close ended tax saving schemes in mutual fund	2011-2012	2012-2013	2013-2014
ICICI Pru right fund (G)	-0.015	0.019	0.028
SBI tax advantage Sr-2 (G)	-	0.017	0.016
IDFC tax saver fund (G)	-0.050	-0.014	0.019
SBI tax advantage Sr-1 (G)	-0.059	-0.014	0.006
Tata tax advantage fund-1 (G)	-0.041	-0.036	-0.004
Religare invesco AGILE Tax (G)	-0.061	-0.030	0.021
UTI master equity plan (US)	-0.044	-0.032	-0.012
UTI long term advantage S2 (G)	-0.051	-0.029	-0.013
Reliance ELSF-series 1 (G)	-0.036	-0.008	-0.017
UTI long term advantage (G)	-0.064	-0.037	-0.023
SENSEX	-0.034	-0.027	-0.004

Risk free rate of return = 5.5% (lowest of SBI risk return)

Table 12: Treynors ratio of tax saving schemes in mutual fund

Close ended tax saving schemes in mutual fund	2011-2012	2012-2013	2013-2014
ICICI Pru right fund (G)	0.153	-0.473	-0.414
SBI tax advantage Sr-2 (G)	-	0.184	-0.512
IDFC tax saver fund (G)	0.466	0.767	-0.299
SBI tax advantage Sr-1 (G)	-7.875	-0.221	0.052
Tata tax advantage fund-1 (G)	0.360	1.368	0.042
Religare invesco AGILE tax (G)	0.432	-0.781	-14.556
UTI master equity plan (US)	0.398	-2.208	0.129
UTI long term advantage S2 (G)	0.483	-0.903	0.149
Reliance ELSF-series 1 (G)	0.436	0.235	0.363
UTI long term advantage (G)	0.594	-1.033	0.306
SENSEX	-0.047	-0.023	-0.004

Table 13: Jensens ratio of tax saving schemes in mutual fund

Close ended tax saving schemes in mutual fund	2011-2012	2012-2013	2013-2014
ICICI Pru right fund (G)	-0.009	0.012	0.025
SBI tax advantage Sr-2 (G)	-	0.013	0.015
IDFC tax saver fund (G)	-0.048	-0.012	0.019
SBI tax advantage Sr-1 (G)	-0.070	-0.012	0.005
Tata tax advantage fund-1 (G)	-0.033	-0.027	-0.003
Religare invesco AGILE tax (G)	-0.057	-0.025	0.021
UTI master equity plan (US)	-0.042	-0.027	-0.012
UTI long term advantage S2 (G)	-0.049	-0.024	-0.013
Reliance ELSF-series 1 (G)	-0.035	-0.006	-0.015
UTI long term advantage (G)	-0.060	-0.029	-0.023
SENSEX	-0.093	-0.046	-0.008

the actual return earned on a portfolio and return expected from the portfolio given its level of risk. It has been seen from Table 13 that in the year 2011-2012, all the values are negative and the highest positive value in the year 2012-2013 is given by SBI tax advantage and in the year 2013-2014, it is ICICI Pru which has given highest positive value.

CONCLUSION

This study evaluates the perception of investor's about their investment in tax saving schemes in mutual fund, percentage analysis is being conducted to show major investor's preference and factor analysis is being used, as a tool to know the variance using KMO and Bartlett's test and the factors have been separated. The

performance top 10 performing ELSS schemes is being analyzed using the sharpe, Treynor and Jensen's index for the years 2011-2014. Over all through, this study we could identify the investor's perception towards mutual fund industry as a whole.

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