

“Performances of Monthly Income Scheme in Indian mutual Fund Industry”

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Abstract:

Mutual funds are an integral part of the stock market. It has become the investment avenue for large number of investors in the past 10 years. Also the stock market volatility is high in these years. Thus in order to analyze the performance of top funds under importance schemes, a research has been done. Ten mutual funds in the income fund category were selected based on their returns. The main focus of this research is to find the risk and return features and study the performance of the funds and to compare it with the market return. The research is limited NAV data for ten income funds available for (2005-2015). The findings will be useful to bring out insight into investment avenues.

Keywords: Mutual Fund, Risk and Return

Introduction

There are a number of investment opportunities available to an investor to multiply their surplus funds. Every investor is having his own template to deploy their surplus. Out of the various investment avenues available to an investor, mutual funds have proved to be wonderful option. Each investment route is having its own risk and return, the return and risk. Every investor is having different objectives for investments, they are pride, capital appreciation, return of investments, participation in the corporate securities market etc., These are all based on individual risk taking ability. Each of investments avenues are having its own risk and return features. An investor must learn to analyze and measure the risk and return of the portfolio. The mutual fund industry plays a significant role in the development of the economy. Its buoyant growth leads to lower intermediate costs, more efficient financial markets, and increased vibrancy of the capital markets and higher local ownership of financial assets. If retail investment is directed through the mutual fund route, it will lead to greater wealth creation in the long run. Thus, the industry can be one of the causative factors for a healthy economy.

The Indian mutual funds business is expected to grow significantly in the coming years due to a high degree of transparency and disclosure standards comparable to anywhere in the world, through there are many challenges that need to be addressed to increase net mobilization of funds in the sector. As such, this paper aims to analyze performance of Monthly Income schemes in Indian mutual fund industry, through which investors' can choose the best one in order to cultivate best and desired return along with reducing their risk.

Literature Review

Michael C. Jensen, Harvard Business School (2002), in his paper a risk adjusted measure of portfolio performance that estimates how much a manager's forecasting ability contributes to the funds return. The measure is based on the theory of the pricing of Capital assets by Sharpe (1964) Lintner (1965) and Treynor. Timotej Jagric, Boris Podobnik, Sebastjan, Strasek and Vita Jagric (2007), studied the mutual fund industry and apply various test to evaluate the Performance capacity of mutual funds. They used performance measure to evaluate funds and also they rank them according to the results. Arnod L. Redman, N.S. Gullet and Herman Manakyan (2000), examines the risk adjusted returns using Sharpe Index, Treynors Index, Jensens Alpha for five portfolios of International mutual funds and for three time period: 1985-1994, 1985-1989 and 1990-94. The bench mark for comparison was the US market provided by the Vanquand Index 500 mutual funds and a portfolio of funds that invest solely in US stocks. J. Cal, KC Chan and T. Yamada, 'The performance of Japanese mutual funds', analyze the performance of Japanese open-type stock mutual funds for the 1981-1992 period. David Blake (2003), reviewed the extensive empirical literature on mutual fund performance and also conducted an empirical analysis of the

performance of a large sample of UK unit trusts. S.P. Kothari, Jerold B, Warner (2005), indicates standard model fund performance measures, using simulated funds whose characteristics mimic actual funds. Shanmugham (2000) conducted a survey of 201 individual investors to study the information sourcing by investors, their perceptions of various investment strategy dimensions and the factors motivating share investment decisions, and reports that among the various factors, psychological and sociological factors dominated the economic factors in share investment decisions. Madhusudhan V Jambodekar (1996) conducted a study to assess the awareness of MFs among investors, to identify the information sources influencing the buying decision and the factors influencing the choice of a particular fund. The study reveals among other things that Income Schemes and Open Ended Schemes are more preferred than Growth Schemes and Close Ended Schemes during the then prevalent market conditions. Investors look for safety of Principal, Liquidity and Capital appreciation in the order of importance; Newspapers and Magazines are the first source of information through which investors get to know about MFs/Schemes and investor service is a major differentiating factor in the selection of Mutual Fund Schemes. Sujit Sikidar and Amrit Pal Singh (1996) carried out a survey with an objective to understand the behavioural aspects of the investors of the North Eastern region towards equity and mutual funds investment portfolio. The survey revealed that the salaried and self-employed formed the major investors in mutual fund primarily due to tax concessions. UTI and SBI schemes were popular in that part of the country then and other funds had not proved to be a big hit during the time when survey was done. Syama Sunder (1998) conducted a survey to get an insight into the mutual fund operations of private institutions with special reference to Kothari Pioneer. The survey revealed that awareness about Mutual Fund concept was poor during that time in small cities like Visakhapatnam. Agents play a vital role in spreading the Mutual Fund culture; open-end schemes were much preferred then; age and income are the two important determinants in the selection of the fund/scheme; brand image and return are the prime considerations while investing in any Mutual Fund. In India, one of the earliest attempts was made by 64 Pacific Bus. Anjan Chakarabarti and Harsh Rungta (2000) stressed the importance of brand effect in determining the competitive position of the AMCs. Their study reveals that brand image factor, though cannot be easily captured by computable performance measures, influences the investor's perception and hence his fund/ scheme selection. Hirshleifer (2001) categorized different types of cognitive errors that investors make i.e. self-deception, occur because people tend to think that they are better than they really are; heuristic simplification, which occurs because individuals have limited attention, memory and processing capabilities; disposition effect, individuals are prone to sell their winners too quickly and hold on to their losers too long In this paper, an attempt is made by the author, mainly to study preference of investors for mutual funds and their performance evaluation.

Statement of problem

Mutual Funds have not only contributed to the India growth story but have also helped families tap into the success of Indian Industry. As information and awareness is rising more and more people are enjoying the benefits of investing in mutual funds. The success of a mutual fund depends upon the confidence of the investors. But most of the investors are lacking in selection of right mutual funds for their regular commitments. All the problems related to the investors are, lack of awareness and poor after sales service to the investors. The investors believed, so far that the mutual funds promoted by regulated bodies and nationalized banks are guaranteed by the Central Govt. The majority of the new investors don't understand the concept, operations and advantages of investment in mutual funds before investing. This research paper has mainly focused how to evaluate the performance of various income scheme mutual funds in India.

Need for the study

Investors are ever cautious about their investments. They seek to get the best bargain in everything at a lower cost. Likewise, when the investor invests in the various investment avenues like Bank Deposits, Gold Bullion, Debt/ Bonds of companies they consider several factors; prominent ones are Rate and Amount of Return, possibility of a loss.

Though, it is impossible to have an Investment avenue having the best of all the above three factors in the market, mutual funds tend to have various investment options with an optimal combination of the three factors. The flexibility to choose among many of the plans, forms of investment, periods of investment (Systematic Investment Plan- SIPs or one time investment), etc has enabled this market to appear as an attractive one.

With emphasis on increase in domestic savings and improvement in deployment of investment through markets, the need and scope for mutual fund operation has increased tremendously. Thus the involvement of mutual funds in the transformation of Indian economy has made it urgent to view their services not only as a financial intermediary but also it plays a significant role in spreading equity culture. So it is necessary for investor to know the risk-return relationship, this research is carried out to know the relationship using sharpe, treynor's, famma, Jensen models and gamma.

Objectives of study

- To evaluate the performance of Monthly income mutual fund schemes, which consists of income, growth balanced and tax saver schemes on the basis of risk and return relationships.
- To find out those mutual fund schemes offering the advantages of diversification, along with adequate systematic risk compared to market beta risk.
- To know whether the mutual funds are able to provide reward to variability and volatility
- To predict the trends for investment of selected mutual funds for future
- To rank the funds based on their performance from April 1st 2010 to 31st March 2015.
- To find the best mutual fund among the selected on the basis of Sharpe Index, Treynor's Performance Index and Jensen's predictive ability model.

Research Methodology

Research Design

Descriptive research and a longitudinal study are used in this research. The present study made an attempt to analyze the performance of the selected mutual fund schemes with the market during the period of the study. In order to achieve the objectives an analysis has been made to compare these schemes with the market on the basis of risk and return. Different statistical and financial tools are used to evaluate the performance of these mutual fund schemes under the present study

Data

Secondary Data- For evaluating the performance of mutual funds, the data has been obtained from the websites.

Sampling Technique

Schemes were selected based on the performance of mutual funds for the last 10 years. Hence the sampling type is Purposive Sampling.

Population

All registered asset management companies' income, growth, balanced and tax saver funds constitute the total population.

Sample Size

For exhaustive analysis, all the funds which have been operating for the past 10 years have been taken for the comparison. 40 mutual funds have been taken for analysis under all four categories.

Time Horizon

The various open ended and closed end funds were selected on the basis of availability of NAV prices for the period 2005-2015.

List of Income Funds for Research:-

S.No.	Name of Scheme	Date of inception
1	Escorts Income Fund	May 1998
2	Birla Sun Life Treasury Optimizer Fund - Regular Plan	April 2008
3	Franklin India Income Builder Fund	June 1999
4	ICICI Prudential Banking & PSU Debt Fund	August 2008
5	HDFC Medium Term Opportunities Fund	June 2010
6	UTI Bond Fund	December 2003
7	ICICI Prudential Income Opportunities Fund	August 2008
8	BNP Paribas Flexi Debt Fund	August 2004
9	IDFC Super Saver Income Fund - Investment Plan - Regular Plan	March 2002
10	Kotak Bond - Plan A	November 1999
12	DHFL Pramerica Banking & PSU Debt Fund	February 2013
13	HDFC Medium Term Opportunities Fund	June 2010
15	ICICI Prudential Banking & PSU Debt Fund	February 2004
16	Kotak Corporate Bond Fund - Standard Plan	September 2007
17	UTI Dynamic Bond Fund-Reg(G)	December 2003
18	Tata Income Fund(D)	April 2003
19	Tata Income Fund(G)	June 2003
20	Franklin India IBA-A(AD)	June 1997
21	Franklin India IBA-A(G)	June 1997
22	ICICI Pru Income Opportunities Fund(G)	January 2010
23	ICICI Pru Income Opportunities Fund(MD)	March 2010
24	Birla SL Medium Term Fund(G)	March 2009
25	BNP Paribas Flexi Debt Fund(MD)	August 2004
26	Kotak Income Opportunities Fund(G)	May 2010
27	Canara Rob Income-Reg(G)	February 2006
28	Reliance Income(AD)	December 1997
29	Axis Income Fund(G)	March 2012

www.valueresearchonline.com

Statistical tools used for analysis:

- (R_i) Return
- (σ) Standard deviation
- (β) Beta
- (α) Alpha
- (r) Correlation
- R square
- Sharpe's Ratio
- Treynor Ratio
- Jenson Ratio

- Sortino Ratio
- Famma
- Gamma
- Ordinary least square model (OLS Model)
- Forecasting

Research Methodology:-

1-Treynor’s performance index:

Treynor (1965) was the first researcher for developing a composite measure of portfolio performance. He measures portfolio risk with beta, and calculates portfolio’s market risk premium relative to its beta:

Where:

$$Treynor = \frac{(R_P - R_f)}{\beta_P}$$

Ti = Treynor’s performance index

Rp = Portfolio’s actual return during a specified time period

Rf = Risk-free rate of return during the same period

βp = beta of the portfolio

Whenever Rp > Rf and βp > 0 a larger T value means a better portfolio for all investors regardless of their individual risk preferences. In two cases we may have a negative T value: when Rp < Rf or when βp < 0. If T is negative because Rp < Rf, we judge the portfolio performance as very poor. However, if the negativity of T comes from a negative beta, fund’s performance is superb. Finally when Rp- Rf, and βp are both negative, T will be positive, but in order to qualify the fund’s performance as good or bad we should see whether Rp is above or below the security market line pertaining to the analysis period

II - Sharpe’s Performance index

Sharpe (1966) developed a composite index which is very similar to the Treynor’s measure, the only difference being the use of standard deviation, instead of beta, to measure the portfolio risk, in other words except it uses the total risk of the portfolio rather than just the systematic risk:

Where:

$$Sharpe = \frac{(R_P - R_f)}{\sigma_P}$$

Si = Sharpe performance index

σp = Portfolio standard deviation

This formula suggests that Sharpe prefers to compare portfolios to the capital market line (CML) rather than the security market line (SML). Sharpe index, therefore, evaluates funds performance based on both rate of return and diversification (Sharpe 1967). For a completely diversified portfolio Treynor’s and Sharpe indices would give identical rankings.

III-Jensen’s Alpha:

Jensen (1968), on the other hand, writes the following formula in terms of realized rates of return, assuming that CAPM is empirically valid:

$$Jp = Rp - Rf = \alpha + \beta (Rm - Rf)$$

$$Jensen = \alpha_P = R_P - \left[R_f + \beta_P (R_M - R_f) \right]$$

Jensen uses α as his performance measure. A superior portfolio manager would have a significant positive α value because of the consistent positive residuals. Inferior managers, on the other hand, would have a significant negative α . Average portfolio manager having no forecasting ability but, still, cannot be considered inferior would earn as much as one could expect on the basis of the CAPM.

Return performance, Return is measured by its 5 to 10 years Sharpe Ratio. For this, initially the unadjusted monthly return has been calculated for each mutual fund through rate of return measure as:

$$\text{Return} = [\text{NAV}_t - \text{NAV}(t-1)] / \text{NAV}(t-1) \dots\dots\dots(i)$$

Where,

NAV_t = Net Asset Value at time t $\text{NAV}(t-1)$ = The corresponding value at time t-1 r_{it} = Return for mutual fund i at time t.

From the above monthly returns, yearly return for each fund has been calculated as:

$$R_{it} = [(1+r_1) \times (1+r_2) \times (1+r_3) \dots \times (1+r_n)] - 1 \dots\dots\dots(ii)$$

Where,

R_{it} = Yearly return for fund i for year t r_n = Monthly return for the fund for month n

n = 1, 2,12 the number of months for calculating yearly return and

i = 1, 2,160, the number of mutual funds taken in the study Then, the risk adjusted performance of each fund has been calculated by using Sharpe performance measure (1966) as explained below:

$$S_p = (R_i - R_f) / \sigma_i \dots\dots\dots(iii)$$

Where,

R_i – mean return on fund i,

R_f – mean risk free rate of return measured by T-364 treasury bill and

σ_i – standard deviation of returns for fund i.

Analysis:

Table 1.1.1 Return of IDFC Government Securities Fund - Investment Plan - Regular Plan

	2008	2009	2010	2011	2012	2013	2014	2015	Average
NAV (Rs)	11.06	10.12	10.52	11.56	13.06	13.89	16.18	17.15	12.94
Total Return (%)	-	-8.47	3.97	9.89	12.97	6.35	16.46	5.99	6.73

Source: Association of Mutual Funds in India (www.amfiindia.com), www.valueresearchonline.com

From the above table it can be inferred that the IDFC government securities fund earned maximum return of Rs. 16.46 per cent in the year 2014 and the fund has given minimum return of Rs. -8.47 per cent during the year 2009. The overall return of the IDFC government securities fund was 6.73.

Table 1.1.2 Performance of evaluation of IDFC Government Securities Fund - Investment Plan - Regular Plan.

	Mean	Std Dev	Beta	Alpha	Sharpe	Treynor's	Jensen's	Sortino
Fund	6.73	4.42	0.69	0.9	1.350962	8.653986	1.304348	0.59

From the above table the performance indicators of IDFC fund is 0.9. The market sensitivity index (Beta) is 0.69. The unsystematic risk of IDFC is 4.42. The sharpe performance index, Treynors performance index, Jensen's performance index and sortino ratio are 1.35, 8.65, 1.30 and 0.59 respectively.

1.2.1 Return of Birla Sun Life Treasury Optimizer Fund - Regular Plan from 2008 to 2014

History	2008	2009	2010	2011	2012	2013	2014	2015	Average
NAV (Rs)	10.26	10.82	11.45	125.07	137.4	150.64	169.42	183.86	109.5389
Total Return (%)	-	5.47	5.81	9.25	9.85	9.63	12.47	8.52	7.83375

Source: Association of Mutual Funds in India (www.amfiindia.com), www.valueresearchonline.com

The above table shows that the Brila Sun Life Treasury Optimizer fund earned maximum return of Rs. 12.47 per cent in the year 2014 and the fund has given minimum return of Rs. 5.47 per cent during the year 2009. The overall return of the IDFC government securities fund was 7.83.

1.2.2. Performance evaluation of Birla Sun Life Treasury Optimizer Fund - Regular Plan

Risk Measures (%)	Mean	Std Dev	Sharpe	Treynors	Jensens	Sortino	Beta	Alpha
Fund	7.83375	1.34	5.801306	18.07849	6.976744	3.65	0.43	3

From the above table that the performance indicators of IDFC fund is 3.0. The market sensitivity index (Beta) is 0.43. The unsystematic risk of IDFC is 1.34. The sharpe performance index, Treynors performance index, Jensen's performance index and sortino ratio are 5.80, 18.07, 6.97 and 3.65 respectively.

1.3.1 Return of ICICI Prudential Banking & PSU Debt Fund

History	2010	2011	2012	2013	2014	2015	Average
NAV (Rs)	10.6	11.57	12.59	13.72	15.16	16.47	13.35167
Total Return (%)	-	9.12	8.87	8.93	10.5	8.64	9.212

Source: Association of Mutual Funds in India (www.amfiindia.com), www.valueresearchonline.com

The above table shows that the ICICI Prudential Banking & PSU Debt fund earned maximum return of Rs. 10.5 per cent in the year 2014 and the fund has given minimum

return of Rs. 8.64 per cent during the year 2015. The overall return of the IDFC government securities fund was 9.212.

1.3.2 Performance evaluation of ICICI Prudential Banking & PSU Debt Fund

Risk Measures (%)	Mean	Beta	Alpha	Std Dev	Sharpe	Jensens	Treynors	Sortino
Fund	9.212	0.83	2.26	2.21	4.141176	2.722892	11.02651	0.85

The above table shows that the performance indicators for ICICI Prudential Banking & PSU Debt Fund is 2.26. The market sensitivity index (Beta) is 0.83. The unsystematic risk of ICICI is 2.21. The sharpe performance index, Treynors performance index, Jensen’s performance index and sortino ratio are 4.14, 11.02, 2.72 and 0.85 respectively.

1.4.1 Return of HDFC Medium Term Opportunities Fund from 2010 to 2015

History	2010	2011	2012	2013	2014	2015	Average
NAV (Rs)	10.35	11.25	12.43	13.37	14.83	16.11	16.35
Total Return (%)	-	8.68	10.49	7.56	10.95	8.61	9.258

Source: Association of Mutual Funds in India (www.amfiindia.com), www.valueresearchonline.com

The above table shows that the HDFC Medium Term Opportunities fund earned maximum return of Rs. 10.95 per cent in the year 2014 and the fund has given minimum return of Rs. 7.56 per cent during the year 2009. The overall return of the HDFC Medium Term Opportunities fund was 9.258.

1.4.2 Performance evaluation of HDFC Medium Term Opportunities Fund

Risk Measures (%)	Mean	Std Dev	Beta	Alpha	Sharpe	Treynors	Jensens	Sortino
Fund	9.258	2.39	0.92	2.37	3.84854	9.99783	2.57609	0.8

The above table shows that the performance indicators of HDFC Medium Term Opportunities fund is 2.37. The market sensitivity index (Beta) is 0.92. The unsystematic risk of HDFC Medium Term Opportunities Fund is 2.39. The sharpe performance index, Treynors performance index, Jensen’s performance index and sortino ratio are 3.84, 9.99, 2.57 and 0.8 respectively.

1.5.1 Return of Religare Invesco Medium Term Bond Fund from 2011 to 2015

History	2011	2012	2013	2014	2015	Average
NAV (Rs)	10.82	11.78	1249.76	1376.12	1490.06	827.708
Total Return (%)	-	8.86	6.11	10.11	8.28	8.34

Source: Association of Mutual Funds in India (www.amfiindia.com), www.valueresearchonline.com

The above table shows that the of Religare Invesco Medium Term Bond fund earned maximum return of Rs. 10.11 per cent in the year 2014 and the fund has given minimum return of Rs. 6.11 per cent during the year 2013. The overall return of the IDFC government securities fund was 8.34.

1.5.2 Performance evaluation of Religare Invesco Medium Term Bond Fund

Risk Measures (%)	Mean	Std Dev	Beta	Alpha	Sharpe	Treynors	Jensens	Sortino
Fund	8.34	1.92	0.72	1.61	4.3125	11.5	2.236111	0.58

The above table shows that the performance indicators of of Religare Invesco Medium Term Bond fund is 1.61. The market sensitivity index (Beta) is 0.72. The unsystematic risk of Religare Invesco Medium Term Bond is 1.92. The sharpe performance index, Treynors performance index, Jensen’s performance index and sortino ratio are 4.31, 11.5, 2.23 and 0.58 respectively.

1.6.1 Return of Tata Balanced Fund - Regular Plan from 2006 to 2015

History	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	average
NAV (Rs)	49.33	76.64	42.61	74.58	85.67	75.38	98.4	105.82	158.32	169.35	93.61
Total Return (%)	34.95	55.35	-44.4	75.04	14.87	-12.02	30.55	7.54	49.61	6.97	21.846

Source: Association of Mutual Funds in India (www.amfiindia.com), www.valueresearchonline.com

The above table shows that the of Tata Balanced fund earned maximum return of Rs. 49.61 per cent in the year 2012 and the fund has given minimum return of Rs. -44.4 per cent during the year 2008. The overall return of the Tata Balanced fund was 21.84.

1.6.2 Performance evaluation of Tata Balanced Fund - Regular Plan.

Risk Measures (%)	Mean	Std Dev	Beta	Alpha	Sharpe	Treynors	Jensens	Sortino
Fund	21.846	12.72	1.01	9.25	1.712736	21.5703	9.158416	1.3

The above table shows that the performance indicators of Tata Balanced fund is 9.25. The market sensitivity index (Beta) is 1.01. The unsystematic risk of Tata Balanced is 12.72. The sharpe performance index, Treynors performance index, Jensen’s performance index and sortino ratio are 1.71, 21.57, 9.15 and 1.3 respectively.

1.6.3 Return of SBI Magnum Balanced Fund from 2006 to 2015

History	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Average
NAV (Rs)	35.37	52.48	29.04	47.73	53.7	41.76	56.39	63.08	90.35	96.99	37.833
Total Return (%)	33.93	48.37	-44.66	64.36	12.51	-22.23	35.03	11.86	43.24	7.36	12.2245

The above table shows that the SBI Magnum Balanced fund earned maximum return of Rs. 64.36 per cent in the year 2009 and the fund has given minimum return of Rs. 7.36 per cent during the year 2009. The overall return of the SBI Magnum Balanced fund was 12.22.

1.6.4 Performance evaluation of SBI Magnum Balanced Fund

Risk Measures (%)	Mean	Std Dev	Beta	Alpha	Sharpe	Treynors	Jensens	Sortino
Fund	12.2245	11.03	0.85	8.76	1.102856	14.31118	10.30588	1.43

The above table shows that the performance indicators of SBI Magnum Balanced fund is 8.76. The market sensitivity index (Beta) is 0.85. The unsystematic risk of SBI Magnum Balanced fund is 11.03. The sharpe performance index, Treynors performance index, Jensen’s performance index and sortino ratio are 1.10, 14.31, 10.30 and 1.43 respectively.

1.6.5 Return of Franklin India Balanced Fund from 2006 to 2015

History	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Average
NAV (Rs)	32.64	46.56	28.72	43.9	50.4	44.15	54.84	58.48	86	90.16	53.585
Total Return (%)	32.83	42.66	-38.32	52.86	14.82	-12.4	24.21	6.64	47.05	4.85	17.52

Source: Association of Mutual Funds in India (www.amfiindia.com), www.valueresearchonline.com

The above table shows that the Franklin India Balanced fund earned maximum return of Rs. 52.86 per cent in the year 2009 and the fund has given minimum return of Rs. -12.4 per cent during the year 2011. The overall return of the Franklin India Balanced fund was 17.52.

1.6.6 Performance evaluation of Franklin India Balanced Fund

Risk Measures (%)	Mean	Std Dev	Beta	Alpha	Sharpe	Treynors	Jensens	Sortino
Fund	17.52	11.54	0.94	8.3	1.512998	18.57447	8.829787	1.48

The above table shows that the performance indicators of Franklin India Balanced Fund is 8.3. The market sensitivity index (Beta) is 0.94. The unsystematic risk of Franklin India Balanced Fund is 11.54. The sharpe performance index, Treynors performance index, Jensen’s performance index and sortino ratio are 1.51, 18.57, 8.82 and 1.48 respectively.

1.6.7 Return of L&T Gilt Fund - Investment Plan

History	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Average
NAV (Rs)	18.62	19.69	24.01	21.68	22.24	23.24	26.47	28.91	33.63	36.15	25.464
Total Return (%)	0.84	5.74	21.97	-9.71	2.6	4.48	13.92	9.19	16.34	7.48	7.285

Source: Association of Mutual Funds in India (www.amfiindia.com), www.valueresearchonline.com

The above table shows that the L&T Gilt fund earned maximum return of Rs. 21.97 per cent in the year 2008 and the fund has given minimum return of Rs. -9.71 per cent during the year 2009. The overall return of the L&T Gilt fund was 7.28.

1.6.8 Performance evaluation of L&T Gilt Fund - Investment Plan

Risk Measures (%)	Mean	Std Dev	Beta	Alpha	Sharpe	Treynors	Jensens	Sortino
Fund	7.285	4.56	0.74	2.37	1.58443	9.763514	3.202703	0.98

The above table shows that the performance indicators of L&T Gilt fund is 2.37. The market sensitivity index (Beta) is 0.74. The unsystematic risk of L&T Gilt is 4.56. The sharpe performance index, Treynors performance index, Jensen’s performance index and sortino ratio are 1.58, 9.76, 3.20 and 0.98 respectively.

Table 1.7 Performance Index of Funds

Funds	Sharpe	Treynors	Jensens	Sortino
IDFC Government Securities Fund	1.350962	8.653986	1.304348	0.59
Birla Sun Life Treasury Optimizer Fund	5.801306	18.07849	6.976744	3.65
ICICI Prudential Banking & PSU Debt Fund	3.848536	9.997826	2.576087	0.8
HDFC Medium Term Opportunities Fund	4.141176	11.02651	2.722892	0.85
Religare Invesco Medium Term Bond Fund	4.3125	11.5	2.236111	0.58
Tata Balanced Fund	1.712736	21.5703	9.158416	1.3
SBI Magnum Balanced Fund	1.102856	14.31118	10.30588	1.43
Franklin India Balanced Fund	1.512998	18.57447	8.829787	1.48
L&T Gilt Fund	1.58443	9.763514	3.202703	0.98

From the above table it can be inferred that Birla Sun Life Treasury optimizer fund had the maximum Sharpe ratio of 5.80 and the fund which has the least value is SBI Magnum Balanced fund with the ratio of 1.10. Birla Sun Life fund was out performing fund among the top income fund in India from 2006-2015. As per the Treyners model the fund which has the highest ratio is Franklin India Balanced fund with a ratio of 18.57 and the least fund is IDFC Govt securities fund with a ratio of 8.65. In the Jensens model SBI Magnum has the highest ratio of 10.31 and the least happens to be IDFC Govt. Securities fund with a ratio of 1.30. And in the Sortino model it was found that Birla Sun Life fund had the highest ratio with 3.65 and the least being Religare Invesco Medium term Bond fund with a ratio of 0.58.

Table 1.08 Performance of Top ten performing Income mutual Funds from 2006-2015

Fund	Sharpe	Treynors	Jensens	Sortino	Weighted Average	RANK
IDFC Government Securities Fund	9	3	10	9	7.75	10
Birla Sun Life Treasury Optimizer Fund	1	10	5	1	4.25	3
ICICI Prudential Banking & PSU Debt Fund	4	8	8	8	7.00	9
HDFC Medium Term Opportunities Fund	3	7	7	7	6.00	6
Religare Invesco Medium Term Bond Fund	2	6	9	10	6.75	7
Tata Balanced Fund	5	1	3	4	3.25	1
SBI Magnum Balanced Fund	10	5	1	3	4.75	5
Franklin India Balanced Fund	8	4	4	2	4.50	4
L&T Gilt Fund	7	9	6	6	7.00	8

According to the Sharpe, Tryners, Jensens and Sortino ratio models it was found that Tata Balanced fund out performed every other fund. It was followed by HDFC Children’s Gift fund in the second place and in the third place was Birla Sun Life Treasury Optimiser fund. In the fourth and fifth place was Franklin India Balanced fund and SBI Magnum Balanced fund respectively.

Implications of the research:

IDFC Government Securities Fund has a Alpha value of 0.9 which says that the fund is least performing to bench indices. The Tata Balanced Fund has an Alpha value of 9.25, which shows that it has outperformed all the other funds. Tata Balanced Fund has a Beta value of 1.01, which shows that the fund is highly volatile among all other funds. Birla Sun Life Treasury Optimizer Fund has a Beta value of 0.43, which shows that the fund is less volatile in the market. Tata Balanced Fund has a standard deviation of 12.72, which means the fund has high risk factor. Birla Sun Life Treasury Optimizer Fund has a standard deviation of 1.34, which means the fund is less risky. Tata Balanced Fund has the highest return of 21.84 and IDFC has the lowest returns of 6.73. This shows that the Tata Balanced Fund has a very good performance over the period of 9 years. Based on the systematic

(Beta) and unsystematic (Std. Dev), Performance indicator (Alpha) and Return, Tata Balanced Fund has outperformed the top ten funds.

Conclusion:

The mutual fund industry is gaining importance in the recent years. A large number of plans have come up from different financial resources. With the stock markets soaring the investors are attracted towards these schemes. Still only a small segment of the investors invest in mutual funds due to the risk associated with it. Also there is a greater tendency to invest in fixed deposits due to the security. Such investors can invest in safe funds like debt and balanced funds, with comparatively less risk and earn high returns than fixed deposits. In order to excel and make mutual funds a success, companies still need to create awareness and understand the psyche of the Indian consumer. Performance analysis helps investors as well as the fund manager to study about risk and return relationship and is a useful tool for making proper investment decisions. It acts as a guide for the investors in choosing the schemes which best suits their expected returns and risk tolerance level.

Reference:

Arnold L Redman, N.S Gullet and Herman Manakyan (2000), “ The Performance of Global and International Mutual Funds” pp 79-84.

Bollen P., and Busse, J.A., (2005), “Short-term persistence in mutual fund performance” , Review of Financial Studies, 18, 569-597.

Blake, D., and Timmerman, A., (1998), “Mutual fund performance: evidence from the UK”, European Finance Review, 57.

Bhall V.K, (2001) “Investment Management”, Sultan Chand & Co., New Delhi, Eight Edition.

Carhart,M.,1997, “On Persistence in Mutual Fund Performance”, Journal of Finance, Vol.52(1), 57-82.

Chang, E.C. and W.C. Lewellen, “An Arbitrage Pricing Approach to Evaluating Mutual Fund Performance”, Journal of Financial Research, 8, Spring 1985,pp. 15-30.

David Blake (2003), “Performance Persistence in Mutual Fund”, Birbeck College, pp. 18-31.

Fama, Eugene F. (1968), “Risk, Return and Equilibrium: Some clarifying comments”. Journal of Finance, (23), pp 29-40.

Fisher.E. Donald and Jordan.J. Ronald, “Security Analysis and Portfolio Management”, Prentice Hall of India, Sixth edition.

Friend, Irwin and Douglas Vickers. (1965). “Portfolio Selection and Investment Performance”. Journal of Finance (20): pp 391-415.

Grinblatt,M. and S.Titman (1989), “ A Comparison of Measures of Mutual Fund Performance on a sample of Monthly Mutual Fund Returns”, Journal of Business, 62, pp. 383-416.

Hendricks, D., Patel, J., and Zechhauser, R. (1993), Hot Hands in Mutual Funds: Short-Run Persistence of Relative Performance, Journal of Finance, 48, pp 93-130.

Horowitz, Ira. (1965). “A Model for Mutual Fund Evolution.” Industrial Management Review 6: pp 81-92.

J. Cai, KC Chan and T Yamada (2002), “The Performance of Japanese Mutual Funds” pp. 10-23.

Mechael C, Jensen, (2002) “The Performance of Mutual Funds in the period 1945 – 1964” pp.389-416.

Sharpe, W.F. (1966), “Mutual Fund Performance”, Journal of Business, 39, pp. 119-38.

S.P. Kothari, Jerold B, Werner (2005) “Evaluation Mutual Fund Performance” pp. 1991-2004

Strong. A.Robert (2001), "Portfolio Management Handbook" Jaico Publishing House, Mumbai, Second Edition.

Timotej Jagric' Boris Podobnik, Sebastjan Strasek, Vita Jagric (2007) "Risk Adjusted Performance of Mutual Funds.