A Comparative Study of Mutual Fund Performance during Recession in India

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Abstract

This study has sought to examine the comparative performance of the open-ended gilt schemes of three types of companies which have been separated according to their ownership styles (Public sector, Indian private sector & foreign private sector). This study is related with financial recession that had been occurred in the year of 2008-2009 (January 2008 to February 2009). In this study the month end net asset values of the open-ended gilt mutual fund schemes have been taken into account and the data have been obtained from the website of Association of Mutual Funds in India (AMFI). This paper has examined the risk-adjusted performance, selectivity performance, diversification performance and market-timing performance of the open-ended gilt mutual fund schemes in the period of recession. In this study, Sharpe and Treynor measures have been applied to measure the risk-adjusted performance and along with these, different coefficients have been estimated to examine the selectivity, market-timing and diversification performances of the open-ended gilt schemes offered by Indian public & private sector mutual fund companies as well as the firms belonging to foreign private sector. It has been observed that the performance of the open-ended gilt schemes of different types of companies is not satisfactory during the recession period. However, the returns of all but one of the selected open-ended gilt schemes are seen to have been positive. However, the observed positive performances of the selected schemes are not statistically significant.

Keywords: Mutual Fund, Performance, Recession, Sharpe model, Treynor model.

1. Introduction

The economic development of a country depends on, to a certain extent, with the progress of the capital market. Similarly, the growth of the capital market implicitly depends on the savings habit of the nation. But, the high rate of savings by the people is limited mainly on bank deposits, real estate, gold, silver, Gems, jewellery and precious stones etc. Therefore, the capital market doesn't grow promptly because the common man doesn't have the necessary expertise by which he/she selects appropriate investment avenues which will serve his/her needs properly. But, there are some organisations of repute which have necessary proficiency to select right investment avenues where the yield is attractive enough, with supreme safety of the invested capital that would create a proper atmosphere for diversion of a part of the savings which at present goes into sectors where there is either only capital appreciation but with little or no capital appreciation at all, but with a periodical small return on the investment. At this situation, the mutual fund can play a crucial role in the Indian economy, which does not only pledge a realistic capital enjoyment on the investment but also offer an ordinary income at periodical intervals with also provision for easy liquidity of the capital invested.

But, what happened to the public sector, Indian private sector and foreign private sector mutual fund companies' in the time of recession in 2008-09? This issue will be examined here on some selected gilt type of open-ended mutual fund schemes selected from one public sector (UTI), another from Indian private sector (Birla Sun Life

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MF) and the other from foreign private sector mutual fund companies (Franklin Templeton MF).

After brief introduction in section.1, the literature survey has been presented in section.2. The objective of the study has been specified in section.3. Similarly, the data and research methodology have been presented in section.4 and 5 respectively. The result has been demonstrated in section.6. Finally, the study has been ended with conclusion in section.7.

2. Literature Survey

The literature on mutual fund is vast. A large number of academicians as well as professionals are spending their valuable time on mutual fund research. The research on mutual fund performance first started in USA and gradually the importance on mutual fund research is growing tremendously all over the world because the mutual fund is the eye-catching source of investment today. Some of the established works will be discussed here in order to develop the basis of the present empirical research in the Indian context.

It has been found that most of the earlier researches were based on Sharpe, Treynor, Jensen and Fama's models. According to the Treynor's model, it is believed that portfolios are well diversified so that there is no-existence of diversifiable risk. Therefore, beta (systematic risk) is the appropriate measure of risk. Similarly, the variability ratio developed by Sharpe (1966) proposes to consider total risk in place of systematic risk. According to this model, return is not the only measure of mutual fund performance, the element of risk apparently influences the performance. After that Jensen (1968) developed a model for the evaluation of portfolio performance which is popularly known as Jensen alpha (Jα) that is derived from capital asset pricing model (CAPM). The basic objective of this model is to select the right security prices through successful prediction of the market. According to this model, the ability of the portfolio managers can be judged with the help of alpha value. The portfolio managers will offer higher return to the investors if the alpha value is positive. In 1972, Fama developed a portfolio performance evaluation model. The earlier research studies put emphasis on evaluation of mutual fund performance mainly on the basis of risk and return. Fama's model seeks to evaluate portfolio performance on different dimensions namely stock-selection, market-timing, diversification and return for bearing risk. Treynor & Mazuy (1966), examined the market-timing performance of the investment managers by taking into account 57 sample funds. The study reported that there was no evidence of statistically significant market-timing performances. Similarly, Henrikson & Merton (1981), examined the performances of 116 mutual fund schemes. Finally, the study reported that only three schemes offered statistically significant market-timing performance. EL-Khouri (1993), examined the risk-return relationship on the data obtained from Amman Stock-Exchange. The study reported that the debt equity ratios of the funds were not correlated with required return. Shah & Hijazi (2005), examined mutual fund performance in Pakistan over a period from 1997 to 2004. They considered equity and balanced funds and used Sharpe, Treynor and Jensen differential measures. The study reported existence of negative Sharpe ratio but on overall basis the Sharpe ratio was 0.47 as compared to the market (0.27). Similarly, the Treynor ratios of all the funds were less than the beta values, however on overall basis the Treynor ratio was 0.13. Finally, the study reported that some of the funds had negative alpha but on overall basis the alpha value of the funds industry was found to be 6.03. Kapil Choudhary (2007), examined the performance of 50 equity investments managers in India over a period of eight years. He used Fama's decomposition theory to measure investment performance. Finally, the study reported that the stock-selection ability of the investment managers was satisfactory but the market-timing performance was absent. However, the risk bearing and diversification performances were positive. G.Artikis evaluated the performance of 30 domestic bond mutual fund managers in Greece over a period from 15/03/1999 to 31/12/2001 by applying T & M model. The study reported that 90% of the fund managers had the ability to choose under priced securities, 20% of the sample mutual funds had the power to outguess the market at right time and another 20% of the sample mutual funds had the ability to select under-priced securities as well as to outguess the market at correct time. Similarly, Filippas Psoma (2001) examined the mutual fund performance of 7 Greek equity mutual funds in Greece. T & M model had been applied in the study. However, the study reported that four mutual funds out of 17 mutual funds exhibited superior market-timing performance. Santos, Costa, Tusi & Silva (2005) examined the mutual fund performance in Brazil over a period from April 2001 to July 2003. They considered 307 Brazilian stock funds and applied stochastic frontier approach for

the identification of the leaders among the Brazilian stock mutual funds. The study identified that management skills is the only determinant of fund managers that finally help them to beat the market. Although, the study reported in-significant relationship between fund size and performance. Jordan, Jorgensen & Smidira (2004), examined the mutual fund performance over a period from 1995 to 2001 by taking into account those funds which were closed to the new investors. Therefore, they collected data from Centre for Research in Security Prices mutual fund data base and finally applied Sharpe, Treynor, Jensen and Fama & French models. Their study reported that those funds which closed their doors to the new investors performed well in the previous 12 months and also found that the performance of funds tended to decline relative to its previous performance after closing. Thanou (2008) evaluated the Greek mutual funds' performance over a period from 1997 to 2005. He employed risk-adjusted performance measures. For the study, he divided the total periods in three sub-periods and divided the market in two categories namely up-market and down-market conditions. In this study monthly return data was considered. The study reported that the ranks of the mutual funds remained unchanged as per various performance measures. The study also reported non-existence of market-timing ability and finally two mutual funds out-performed the market index. Bello, (2009) examined the performance of 5 categories of U.S. equity mutual funds during the recessionary periods in 1990and 2001. Finally, the study reported that the return performances of all the mutual funds had appeared to be significantly higher than the market index during the post recession as well as during the recession period in 1990. Similarly, he also reported that all the selected funds had declining performances in post-recession period and also observed that schemes belonging to only one category of fund (small company) had positive return during the depression while the other schemes had experienced negative return during the recession and after the recession. Roy & Ghosh (2010) examined the diversification performance of the open-ended income and growth schemes in India over a period from January 2001 to December 2009. It was found from the analysis that the average diversification performance of income and growth types of schemes in terms of R^2 values was 0.345 and 0.470 respectively which was very poor. It had been found that high degree of diversifiable risk for both types of schemes were present. After statistical test it had been observed that both types of schemes were equal diversifiers. Similarly, a study by Roy & Ghosh examined the selectivity performances of the open-ended mutual fund schemes in India over a period of nine years. They applied Jensen model and reported that the selectivity performances of the managers were very unsatisfactory.

The previous research studies reported so far were hardly concerned with the evaluation of mutual fund performance during the recessionary period. In the Indian context the literature is scanty. Present study, therefore, seeks to fill in this gap. Accordingly, the following section identifies the specific objectives of the study.

3. Objective of the Study

The proposed study seeks to examine the following objectives:

1. To examine the comparative risk-adjusted performance.
2. To observe the selectivity performance and judgment among the companies.
3. To check up the comparative diversification performance of the companies.
4. To examine the comparative market-timing performance of the companies.

4. Data

The sample consist of 31 open-ended gilt type of mutual fund schemes, selected one from public sector mutual fund (UTI – 10), another from Indian private sector mutual fund (Birla Sun Life – 13) and remaining from foreign private sector mutual fund (Franklin Templeton mutual fund – 8). It has previously been said that the present study is interconnected with mutual fund performance for the duration of recession which occurred in the year of 2008-2009 (From January 2008 to February 2009). It has been noticed in the recession period that the foremost stock-market index (BSE Sensitive Index) in India had drastically fallen down from 17648.71 to 8891.61. Therefore, this time was pointed out as financial downturn in India. In this study, those schemes have been selected whose full information was obtainable. In this study, month end net asset values have been considered that incorporated management fees and operating costs but excluded of entry and exit loads. The data relating to the selected open-ended gilt type of mutual fund schemes have been obtained from the website of Association of

Mutual Funds in India (AMFI) and ensure continuity and uniformity. Further, BSE Sensitive index has been used as market proxy. Finally, in respect of risk-free rate, the interest rate of post office saving deposit has been used. Lastly, the study period is from January 2008 to February 2009 (14 months).

5. Methodology

In respect of methodology, several models have been applied to examine the risk-adjusted performance of selected open-ended gilt type of mutual fund schemes. All the risk-adjusted performance measures are within the capital asset pricing model framework. After Markowitz's theory, Treynor in 1965 first introduced the risk-adjusted performance measure, popularly known as reward to volatility ratio. First, he computed the excess return which is the difference between actual return over the risk-free rate (risk premium) and divided it by the systematic risk (beta coefficient). The model as under:

$$T_i = \frac{R_i - R_f}{\beta_i}$$

Where, T_i is the Treynor index of the ith scheme, R_i is the average monthly return of the ith scheme, R_f is the average monthly risk-free rate, β_i is the beta coefficient of the ith scheme.

In this paper, Treynor ratios have been computed and ranked accordingly. Thereafter, these ratios have been compared with the market index to find out the outperformers and then the Treynor's ranks have been compared with the ranks obtained from Sharpe index. In 1966, Sharpe proposes an alternative risk-adjusted performance measure where beta coefficient is replaced by the standard deviation which is a numerical measure of total risk. The ratio is popularly known a reward to variability ratio as under:

$$S_i = \frac{R_i - R_f}{\sigma_i}$$

Where, S_i is the Sharpe ratio of the ith scheme, R_i is the average monthly return of ith scheme, R_f is the average monthly risk-free rate of return, σi is the standard deviation of the ith scheme, computed as under:

$$\sigma_i = \sqrt{\frac{\sum R_i}{n} - \left(\frac{\sum R_i}{n}\right)^2}$$

This model measures the excess return earned ($R_i - R_f$) per unit of total risk widely known as reward to variability ratio and these ratios have been compared with the market Sharpe ratios to find out the out-performers. After computation of Sharpe ratios of the schemes, ranks have been given to them according to their performances. Finally, the Sharpe ratios have been compared with the Treynor ratios. It is proved in theory that if the mutual fund schemes accomplish complete diversification (reduction of unsystematic risk) then the rankings obtained from both the models should be identical and the unsystematic risks of the open-ended schemes are practically same like systematic risk.

In this study, Jensen performance evaluation model has been used. The risk-adjusted model of Jensen allows to the managers to examine whether the mutual fund managers have the ability to select right scheme in a statistically significant way. The model as under:

$$R_i = \alpha_i + \beta_i(R_m) + e_i$$

Where, R_i is the average monthly return of the ith mutual fund scheme; R_m is the average monthly market return of the ith mutual fund scheme; β_i is the beta coefficient; α_i is the intercept term, popularly known as Jensen alpha which indicates the manager's ability of forecasting in a unpredictable market circumstances and e_i is the error term with zero mean and constant standard deviation. It is expected that a statistically positive significant alpha indicates superior stock-selection ability of the managers. Similarly, the negative alpha highlights inferior quality of stock-selection ability of the managers.

In addition to these, the market-timing ability of the open-ended gilt type of mutual fund schemes has been examined in the slump period. It is generally believed that the superior market-forecasting depends on the efficiency of the fund manager. Therefore, by using this skill the fund manager can easily predict the market movement correctly and adjust the portfolio according to the market instability. It is expected that the market return exceeds the risk-free return in the upturn market and consequently, when the market is downturn the risk-free return beat the market return ($R_f > R_m$). In this unpredictable situation, an efficient mutual fund manager changes the portfolio composition according to the risk profile. Therefore, the mutual fund managers shift their portfolios in high risk securities with the expectation of abnormal return and switching their portfolios in low risk securities with the fear of loss according to the market movement. Here, Treynor & Mazuy model has been applied to guess the

market-timing ability of the open-ended gilt type of mutual fund schemes. The model as under:

$$R_i - R_f = \alpha_i + \beta_i(R_m - R_f) + \gamma_i(R_m - Rf)^2 + e_i$$

Where, $(R_i - R_f)$ is the excess return over the risk-free rate of ith scheme, γ_i is the gamma coefficient (a measure of market-timing ability) of the mutual fund managers. It is generally assumed that a statistically significant gamma value indicates superior market-timing ability of the fund managers and a negative gamma value represents inferior market-timing ability of the fund managers. Finally, the returns (R_i) of the open-ended mutual fund schemes have been computed by applying this following formula:

$$R_i = \frac{\text{NAV}_t - \text{NAV}_{t-1}}{\text{NAV}_{t-1}} \times 10$$

Where, NAV_t is the net asset value of the current month of the ith scheme and $\text{NAV}_{T\text{-}1}$ is the net asset value of the previous month of the ith scheme.

Similarly, the monthly market return (R_m) has been computed as under:

$$R_m = \frac{\text{Market Index}_t - \text{Market Index}_{t-1}}{\text{Market Index}_{t-1}} \times 100$$

Where, market Index_t is the monthly market return of the current month and Market $\text{Index}_{t\text{-}1}$ is the monthly market return of the previous month.

6. Result and Analysis

At first, the risk-adjusted performances of the open-ended gilt schemes of public, Indian private as well as foreign private sector Mutual Fund companies have been examined during the recession period. To accomplish this objective, two well accepted models have been used namely Sharpe model and Treynor model. Thereafter, the computed risk-adjusted performance of the open-ended gilt schemes has been presented in Table1. The computed Sharpe ratios and Treynor ratios of the open- ended gilt schemes of three types of companies (public, Indian private & foreign private sector) have been presented in Table 1. According to the Sharpe and Treynor ratios, ranks have been given to the open-ended gilt schemes of public sector (UTI), Indian private sector (Birla Sun Life) and foreign private sector (Franklin Templeton) mutual funds in descending order. It has been observed that the risk-premiums of public sector mutual fund schemes (UTI) are found to be positive as compared to the Indian private sector and foreign private sector mutual fund companies during the recession period. However, the risk-premiums of three Indian private sector mutual fund schemes are found to be negative. Similarly, the risk-premiums of foreign private sector gilt schemes are better than the Indian private sector. Similarly, in case of risk-exposure, the public sector mutual fund company (UTI) is risky (3.8487) than Indian private sector (Birla Sun Life Templeton Mutual Fund) and foreign private sector mutual fund companies (Franklin Templeton Mutual Fund Company). If we look into the Sharpe ratios it has been observed that the Sharpe ratios of public sector mutual fund company (UTI) are positive and the schemes also outperformed the market index. According, to the Sharpe ratio, the first rank (Public Sector Mutual Fund Company) has been given to UTI-Gilt Advantage long term PF-Dividend whose Sharpe ratio is found to be 0.6270 and the lowest rank has been given to UTI-G Sec Fund-STP income (0.3066) and so on. Finally, the average Sharpe ratio of the public sector Mutual Fund Company (UTI) is found to be 0.4420. Similarly, Sharpe ratios of 10 schemes of Indian private sector Mutual Fund Company (Birla Sun Life Mutual Fund) out of 13 schemes are found to be positive. According to the Sharpe ratio, the first rank has been given to Birla Sun Life Government securities short-term Fund Retail plan A (Dividend) whose Sharpe ratio is 5.3114 and the lowest rank has been given to Birla Sun Life Gilt plus-Liquid plan (Annual Dividend; -1.1779) and so on. However, the average Sharpe ratio of Indian private sector Mutual Fund Company (Birla Sun Life Mutual Fund Company) is found to be 0.5464. Finally, the Sharpe ratios of 7 foreign private sector Mutual Fund schemes (Franklin Templeton Mutual Fund Company) out of 8 schemes are found to be positive. According to the Sharpe ratio, the first rank has been given to Templeton Indian Government Sec Fund-PF plan-Dividend whose R/V ratio (Sharpe ratio) is found to be 0.8049 and the lowest rank has been given to Templeton India Government Sec Fund-Treasury plan (Dividend option; -1.4165) and so on. Although, the average R/V ratio of the open-ended gilt schemes of foreign private sector Mutual Fund Company (Franklin Templeton Mutual Fund Company) is found to be 0.1464. Finally, it has been noticed that 7 schemes out of 8 schemes outperformed the market index. Now, it may be said that the average Sharpe ratio of Indian private Sector Mutual Fund Company (Birla Sun Life) is higher than the public sector (UTI) and foreign private sector Mutual Fund Companies (Franklin Templeton) during the recession period. But, it has also been noticed that returns of the open-ended gilt schemes of public sector Mutual

Fund Company (UTI) are positive than the Indian Private Sector (Birla Sun Life Mutual Fund) and foreign private sector (Franklin Templeton) Mutual Fund Companies. However, one of the schemes of Indian private sector Mutual Fund Company (Birla Sun Life Company) has offered highest Sharpe ratio (5.3114) than the public sector and foreign private sector Mutual Fund Companies during the recession period.

In the same way the Treynor ratios (reward to volatility ratio) of the open-ended gilt schemes of public sector (UTI), Indian private sector (Birla sun life) and foreign private sector Mutual Fund (Franklin Templeton) companies have been computed and presented. First of all, the Treynor ratio of the open ended gilt schemes of public sector (UTI), and then Indian private sector (Birla sun life) and finally foreign private sector (Franklin Templeton) Mutual Fund Companies have been examined. It has been observed that Treynor ratios (Reward volatility Ratio) of the open ended-gilt schemes of UTI (public sector) are found to be positive. According to the Treynor ratio, all the schemes have beat the market index positively. Then, rank has been given to the open ended gilt schemes in descending order. The first rank has been given to UTI Gilt advantage long term PF-Dividend schemes whose Reward to Volatility ratio is 2242.90 and then 2166.60 and the last one is 3.3744 of the open-ended gilt schemes of UTI (public sector). But, the market Treynor ratios of the open- ended gilt schemes of UTI have found to be negative (public). Finally, the average Treynor ratio of the open- ended gilt schemes of UTI (public sector MF) is 556.2647. Similarly, the Treynor ratios of the open-ended gilt schemes of Birla sun life Mutual Fund Company (Indian private sector) have been examined. It has been found that Treynor ratios of the 9 open-ended gilt schemes of Birla sun life Mutual Fund Company (Indian private sector) are positive. According to the Treynor ratio, all the open-ended schemes of Birla sun life Mutual Fund Company (Indian private sector) have beaten the market index. After that, rank has been given to the open-ended gilt schemes of Birla sun life Mutual Fund Company (Indian private sector) in descending order. According to the Reward to Volatility ratio, the first rank has been given to Birla sun life Government securities short term fund-Retail plan A (Dividend) whose Treynor is 267.25 and then Birla sun life Government securities long term fund-plan B (Growth) whose reward to volatility ratio is 80.16 and the last one is -95.21 (Birla sun life gilt plus-PF plan-annual Dividend). Finally, the average Treynor ratio is found to be 29.37. In a same fashion, the Treynor ratios of the open-ended gilt schemes of Franklin Templeton Mutual Fund Company (Foreign private sector) have been evaluated. It has been observed that the Treynor ratios of 4 schemes are positive and the remaining is negative. It has also been found that all the schemes have beaten the market index during the recession period. In the same way, rank has been given in descending order. As per Reward ratio the first rank has been given to Templeton Indian Government sec fund-Long-Term plan growth (16.77) and then Templeton India Government sec Fund-Treasury plan-growth option (9.87) and the last rank has been given to Templeton India Government sec Fund-PF plan-Dividend (-308.18). The average Treynor ratio of the open-ended gilt schemes of Franklin Templeton mutual fund company (Foreign Pvt. Sector) has been found -48.48. Therefore, it may be said that the average Treynor ratio of UTI (public sector) is higher than the Indian Pvt. Sector (Birla Sunlife MF) and Foreign Pvt. Sector (Franklin Templeton MF). However, the Treynor ratios of the open-ended schemes of UTI (public sector) are found to be positive during the recession period. But, in case of Birla Sun Life (Indian private Sector) and Franklin Templeton mutual fund companies (Foreign private. Sector), some of the open-ended gilt schemes have provided negative Treynor ratio. In a nutshell, the public sector mutual fund company (UTI) is better performer than Indian private Sector (Birla Sun Life MF) and foreign private Sector Mutual fund Companies (Franklin Templeton MF).

Table 1 **Risk-Adjusted Performance of the Open-ended Gilt Schemes Unit Trust of India (UTI)**

Sl.No	*Scheme Name*	*Si*	*Rank*	*Ti*	*Rank*
1	UTI-G-sec Fund-Growth	0.454	4	45.251	7
2	UTI-G-sec Fund-Income	0.355	9	55.742	5
3	UTI-G-sec Fund-STP-Growth	0.501	2	765.10	3
4	UTI-G-sec Fund-STP-Income	0.306	10	3.3744	10
5	Uti-gilt Advantage-long term PF	0.434	6	51.726	6

Sl.No	*Scheme Name*	*Si*	*Rank*	*Ti*	*Rank*
6	Uti-gilt Adv-long term PF-Dividend	0.627	1	2242.9	1
7	Uti-gilt Adv-long term PF-Growth	0.430	7	184.93	4
8	Uti-gilt Adv-long term PF-auto reduced	0.374	8	22.198	9
9	Uti-gilt advantage-long term-Dividend	0.447	5	24.820	8
10	Uti-gilt advantage-long term-Growth	0.487	3	2166.6	2
	Birla Sun Life Mutual Fund Company (Indian Pvt. Sector)				
1	Birla sunlife gilt plus-liquid plan	-1.177	13	36.42	6
2	Birla sunlife gilt plus-liquid plan-Div	-0.721	11	-42.89	12
3	Birla sunlife gilt plus-liquid plan-Grow	-1.009	12	42.73	4
4	Birla sunlife gilt plus-PF plan	0.437	7	-95.21	13
5	Birla sunlife gilt plus-PF plan-Dividend	0.256	9	12.69	8
6	Birla sunlife gilt plus-PF plan-Growth	0.336	8	52.81	3
7	Birla sunlife gilt plus-Regular plan	0.635	5	28.42	7
8	Birla sunlife gilt plus-Regular plan-Dividend	0.672	3	41.50	5
9	Birla sunlife gilt plus-Regular plan-Growth	0.568	6	-31.33	11
10	Birla sunlife gov. Sec long term fund-plan-A (D)	0.670	4	-13.15	10
11	Birla sunlife govt. Sec long term fund-plan B-G	1.063	2	80.16	2
12	Birla sunlife gov. Sec long term fund-ret pl A-D	5.311	1	267.25	1
13	Birla sunlife gov. Sec long term fund-ret pl B-G	0.060	10	2.37	9
	Foreign Private sector (Franklin Templeton MF Company)				
1	Templeton India gov. Sec fund-com pl-D	0.068	7	-249.04	4
2	Templeton India gov. Sec fund-com pl-G	0.680	2	138.33	6
3	Templeton India gov. Sec fund-LTP-Bonus	0.168	5	-49.315	3
4	Templeton India gov. Sec fund-LTP-D	0.205	4	1660.3	7
5	Templeton India gov. Sec fund-LTP-G	0.555	3	-48.832	1
6	Templeton India gov. Sec fund-PF plan-D	0.804	1	830.15	8
7	Templeton India gov. Sec fund-Treasury plan-D Op	-1.416	8	-226.40	5
8	Templeton India gov. Sec fund-Treasury plan-G.Op	0.105	6	-1660.3	2

In this study, the stock-selection performance of the open-ended gilt schemes of public sector (UTI), Indian private sector (Birla Sun Life MF) and foreign sector (Franklin Templeton MF) have been examined. It has been examined whether the managers of the open-ended gilt schemes of all types (Public, Indian private & Foreign private) of companies have got success or not in respect of stock-selection performance during the recession period. At first, the stock-selection performance of the open-ended gilt schemes of public sector mutual fund company (UTI) has been examined and presented in Table 2. It has been observed that the alpha values (Jensen Alpha) of the open-ended gilt schemes of UTI (Public sector MF) are positive. Therefore, it may be said that the managers of UTI are well in stock-picking activities. It is generally believed that higher return sometime depends on the efficiency in stock-selection activities of the managers. Similarly, the abnormal return can be understood if the managers provide statistically significant alpha. It has been observed that only three (3) schemes of UTI (public sector MF) out of ten (10) provided statistically significant alpha values. Therefore, it may be said that the investors have got abnormal return by investing those three schemes. Finally, the average alpha value of the open-ended gilt schemes of UTI (public sector MF company) is 2.3966. After that, the stock-selection performance of the open-ended gilt schemes of Indian private sector (Birla Sun Life) mutual fund company has been examined. It has been found that the alpha values of the open-ended gilt schemes of Indian private sector mutual fund company (Birla Sun Life) are positive. Therefore, it may be said that the managers of Indian private sector mutual fund company (Birla Sun Life) are well in stock-selection activities and provided to the investors a satisfactory return. But, a question

sometime arises that the managers are efficient in stock-selection activities. The efficiency of the managers can be judged if the managers provide statistically significant alpha. It has been observed that seven (7) schemes of Indian private sector MF Company (Birla Sun Life) have provided statistically significant alpha values out of thirteen (13) schemes. Therefore, it may be said that the managers of those schemes have offered to the investors' abnormally higher return. Finally, it has been found that the average alpha value of the open-ended gilt schemes of Indian private sector mutual fund Company (Birla Sun life) is 1.3975. At last, the stock-selection performance of the open-ended gilt schemes of foreign private sector mutual fund company (Franklin Templeton) has been examined here. It has been observed that the alpha values of the foreign private sector mutual fund company (Franklin Templeton) are positive. However, it doesn't indicate that the positive alpha value is a good sign of superior stock-selection performance. The superiority can be understood only when the managers provide statistically significant alpha. Here, it has been observed that six (6) schemes provide statistically significant alpha out of eight (8) schemes and those schemes provided to the investors a higher return. Finally, a comparison has been made among different types of (public, Indian private and foreign private sector mutual fund) companies according to their ownership in respect of stock-selection performance. It has been observed that the average stock-selection performance of the public sector mutual fund Company (UTI) is higher than the Indian private sector (Birla Sun life) as well as foreign private sector mutual fund Companies (Franklin Templeton). However, it has also been found that the average stock-selection performance of Indian private sector mutual fund Company (Birla Sun Life) is better (1.3975) than the foreign private sector mutual fund (1.3058) company (Franklin Templeton). Even if, the stock-selection performance of a particular open-ended gilt scheme of UTI (Public sector mutual fund Company) is higher (3.291) than the Birla Sun Life Mutual Fund Company and Franklin Templeton mutual fund company (Indian private & foreign private sector mutual fund companies).

Table 2 **Selectivity Performance of the Open-ended Gilt Schemes UTI (Public Sector Mutual Fund)**

SL.No	*Scheme Name*	*Jα*	*t-Value*
1	UTI-G-sec Fund-Growth	0.708	1.677
2	UTI-G-sec Fund-Income	0.179	0.376
3	UTI-G-sec Fund-STP-Growth	-0.214	-0.468
4	UTI-G-sec Fund-STP-Income	0.021	0.046
5	Uti-gilt Advantage-long term PF	0.302	0.657
6	Uti-gilt Adv-long term PF-Dividend	0.021	0.043
7	Uti-gilt Adv-long term PF-Growth	0.241	0.521
8	Uti-gilt Adv-long term PF-auto reduced	0.331	0.725
9	Uti-gilt advantage-long term-Dividend	0.210	0.453
10	Uti-gilt advantage-long term-Growth	-0.049	-0.103
	Birla Sun Life Mutual Fund company (Indian private Sector Mutual Fund Company)		
1	Birla sunlife gilt plus-liquid plan	0.744	1.927
2	Birla sunlife gilt plus-liquid plan-Dividend	0.321	0.694
3	Birla sunlife gilt plus-liquid plan-Growth	0.316	0.689
4	Birla sunlife gilt plus-PF plan	0.336	0.718
5	Birla sunlife gilt plus-PF plan-Dividend	0.164	0.325
6	Birla sunlife gilt plus-PF plan-Growth	0.297	0.631
7	Birla sunlife gilt plus-Regular plan	-0.178	-0.383
8	Birla sunlife gilt plus-Regular plan-Dividend	0.414	0.910
9	Birla sunlife gilt plus-Regular plan-Growth	0.632	1.478
10	Birla sunlife gov. Securities long term fund-plan-A (D)	0.390	0.985

SL.No	*Scheme Name*	*Jα*	*t-Value*
11	Birla sunlife govt. Securities long term fund-plan B-G	-0.560	-1.267
12	Birla sunlife gov. Securities long term fund-retai plan A-D	-0.172	-0.367
13	Birla sunlife gov. Securities long term fund-ret plan B-G	-0.469	-1.065
	Franklin Templeton (Foreign private Sector Mutual Fund Company)		
1	Templeton India gov. Sec fund-com plan-Dividend	0.295	0.659
2	Templeton India gov. Sec fund-com plan-Growth	0.110	0.233
3	Templeton India gov. Sec fund-Long Term Pl-Bon	0.154	0.350
4	Templeton India gov. Sec fund-Long Term Plan-D	0.417	0.904
5	Templeton India gov. Sec fund-Long Term Plan-G	0.226	0.505
6	Templeton India gov. Sec fund-PF plan-Dividend	0.329	0.702
7	Templeton India gov. Sec fund-Treasury plan-D.Option	0.071	0.176
8	Templeton India gov. Sec fund-Treasury plan-G.Option	-0.060	-0.126

In this study, the diversification performances of the open-ended gilt schemes of Public Sector (UTI), Indian private sector (Birla Sun Life MF) and foreign private sector mutual fund Companies (Franklin Templeton) have been examined and then comparative analysis has been made among the companies. First of all, the diversification performance of the open-ended gilt schemes of public sector mutual fund company (UTI) has been examined. The diversification performance has been measured by using r_2 value that has been derived from regression equation (coefficient of determination). It is a statistical measure of diversification performance. It is generally believed that the higher value of r_2 indicates satisfactory diversification performance and vice-versa. In this study it has been found that the r_2 values of the open-ended gilt schemes of UTI (public sector MF) are very poor. Here, the value of r_2 ranges between 0.000 and 0.127. It has been observed that the highest r_2 value is 0.127 which is very unsatisfactory which indicates that the managers of the open-ended gilt schemes of UTI (public sector MF) are unable to reduce unsystematic risk by applying the strategy of portfolio diversification. It means that the managers cannot make optimum portfolio by taking into consideration the prospective securities in the portfolio during the recession period. However, the average diversification performance has been found 0.0397 which is very poor.

Similarly, the diversification performance of the open-ended gilt schemes of Birla Sun Life mutual fund Company (Indian private sector) has been presented in Table 3. It has been found that the r_2 value ranges between 0.002 and 0.252. It has been observed that the highest r_2 value is 0.252 which is very unsatisfactory. It is well known that the superior diversification performance depends on higher value of r_2. The higher value of r_2 means the value which indicates superior quality of the managers' who can make optimum portfolio in a judicious manner that ultimately reduce unsystematic risk by way of investing in different prospective securities. But, in case of the open-ended gilt schemes of Birla Sun Life Mutual Fund Company (Indian private sector)' the diversification performance is very poor during the recession period. The average r_2 value of the open-ended gilt schemes of Birla Sun Life Mutual Fund Company is found to be 0.0391 which is unsatisfactory. Finally, the diversification performance of the open-ended gilt schemes of Franklin Templeton Mutual Fund Company (Foreign private sector) has been examined and the computed value of r_2 has been presented in the same table. It has been observed that the highest r_2 value is 0.290 which is not satisfactory. It is assumed that the diversification performance will be better if the value of r_2 is higher. In this case, the diversification performance of the open-ended gilt schemes of foreign private sector mutual fund Company (Franklin Templeton) is very poor during the recession period. Therefore, the managers can not reduce the quantum of unsystematic risk by way of investing in different securities in judicious manner. However, the average r_2 value has been found to be 0.0863. Now, a comparison has been made on the basis of diversification performance achieved by those companies (public, Indian private & Foreign private). It has been observed that the scheme of foreign private sector mutual fund Company (Franklin Templeton) has provided highest r_2 value than the Indian private sector (Birla Sun Life) and public sector mutual fund Companies (UTI). It has also been found that the average r_2 value of Franklin Templeton

MF Company (Foreign private sector) is higher (0.0863) than UTI (public sector MF; 0.0397) and Birla Sun Life Mutual Fund Company (Indian private sector; 0.0391). But in a nutshell, the diversification performance of all types of companies (public, Indian private & foreign private) is unsatisfactory.

Table 3 Diversification Performance of the Open-ended Gilt Schemes UTI (Public Sector MF Company)

Sl.No	Scheme Name	r_2
1	UTI-G-sec Fund-Growth	0.010
2	UTI-G-sec Fund-Income	0.001
3	UTI-G-sec Fund-STP-Growth	0.071
4	UTI-G-sec Fund-STP-Income	0.127
5	Uti-gilt Advantage-long term PF	0.044
6	Uti-gilt Adv-long term PF-Dividend	0.001
7	Uti-gilt Adv-long term PF-Growth	0.051
8	Uti-gilt Adv-long term PF-auto reduce	0.046
9	Uti-gilt advantage-long term-Dividend	0.046
10	Uti-gilt advantage-long term-Growth	0.000
	Birla Sun Life Mutual Fund Company (Indian private sector)	
1	Birla sunlife gilt plus-liquid plan	0.113
2	Birla sunlife gilt plus-liquid plan-Dividend	0.027
3	Birla sunlife gilt plus-liquid plan-Growth	0.048
4	Birla sunlife gilt plus-PF plan	0.002
5	Birla sunlife gilt plus-PF plan-Dividend	0.040
6	Birla sunlife gilt plus-PF plan-Growth	0.004
7	Birla sunlife gilt plus-Regular plan	0.049
8	Birla sunlife gilt plus-Regular plan-Dividend	0.026
9	Birla sunlife gilt plus-Regular plan-Growth	0.033
10	Birla sunlf gov. Securities long term fund-plan-A (Dividend)	0.252
11	Birla sunlife govt. Securities long term fund-plan B-Growth	0.016
12	Birla snlife gov. Securities long term fund-retail plan A-Divide	0.034
13	Birla snlife gov. Securities long term fund-retail plan B-Growth	0.064
	Franklin Templeton (Foreign private sector Mutual fund company)	
1	Templeton India gov. Sec fund-com plan-Dividend	0.095
2	Templeton India gov. Sec fund-com plan-Growth	0.034
3	Templeton India gov. Sec fund-Long Term Plan-Bonus	0.149
4	Templeton India gov. Sec fund-Long Term Plan-Dividend	0.001
5	Templeton India gov. Sec fund-Long Term Plan-Growth	0.108
6	Templeton India gov. Sec fund-PF plan-Dividend	0.001
7	Templeton India gov. Sec fund-Treasury plan-Dividend Option	0.290
8	Templeton India gov. Sec fund-Treasury plan-Growth Option	0.012

Finally, the market-timing performances of the open-ended gilt schemes of public sector (UTI), Indian private sector (Birla Sun Life) and also foreign private sector mutual fund companies (Franklin Templeton) have been examined. It is generally accepted that the abnormal return of mutual fund schemes sometimes depends on the market-timing performances of the managers. If the managers are able to forecast the market volatility correctly then it is expected that the return of the mutual fund schemes will be increased. The market-timing performance of the UTI (public sector MF Company) has been examined. The market-timing performance has been indicated by the gamma value (a statistical measure of market-timing performance). The abnormal return sometimes arises only when the gamma (γ) value is statistically significant. It has been observed that the gamma values of eight (8) schemes out of ten (10) schemes are positive. It has also been found that the superior market-timing performance of the open-ended gilt schemes of public sector Mutual fund Company (UTI) is absent. Therefore, the managers cannot provide abnormal return to the investors during the recession period. However, the open-ended gilt schemes of UTI (public sector mutual fund Company) have provided positive return during the recession period. But, in overall sense, the market-timing performance of the managers of the open-ended gilt schemes (UTI) is not satisfactory.

Similarly, the market-timing performance of the open-ended gilt schemes of Indian private sector Mutual Fund Company (Birla Sun Life) has been examined and found that the gamma values of nine schemes (9) out of thirteen schemes (13) are positive. It has also been found that the statistically significant gamma value is absent. Therefore, it may be said that the superior market-timing performance

of the managers of the open-ended gilt schemes of Birla Sun Life Mutual fund Company (Indian private sector) is unsatisfactory.

Finally, the market-timing performance of the open-ended gilt schemes of foreign private sector Mutual Fund Company (Franklin Templeton) has been examined. It has been noticed that the gamma values of seven (7) schemes out of eight (8) are positive. But, the superior market-timing performance of the managers is absent. Therefore, the managers cannot provide abnormal return to the investors from the superior market-timing activities during the recession period.

Last of all, the comparisons of market-timing performances among different types of companies (Public sector, Indian private sector & foreign private sector) have been examined. It has been found that the superior market-timing performance of three types of companies (Public, Indian private & foreign private sector Mutual Fund companies) is absent during the recession period. However, the average gamma value of the open-ended gilt schemes of foreign private sector MF Company (Franklin Templeton) is higher (0.193) than the public sector MF (0.175) Company (UTI) and also Indian private sector MF Company (Birla Sun Life). But, in nutshell, the market-timing performance of the open-ended gilt schemes of different types of companies (According to the Ownership) is unsatisfactory during the recession period.

Table 4 Market-Timing performance of the Open-Ended Gilt Schemes UTI (Public Sector MF Company)

Sl.No	*Scheme Name*	γ_i	*t-Value*
1	UTI-G-sec Fund-Growth	0.708	1.677
2	UTI-G-sec Fund-Income	0.179	0.376
3	UTI-G-sec Fund-STP-Growth	-0.214	-0.468
4	UTI-G-sec Fund-STP-Income	0.021	0.046
5	Uti-gilt Advantage-long term PF	0.302	0.657
6	Uti-gilt Adv-long term PF-Dividend	0.021	0.043
7	Uti-gilt Adv-long term PF-Growth	0.241	0.521
8	Uti-gilt Adv-long term PF-auto reduced	0.331	0.725
9	Uti-gilt advantage-long term-Dividend	0.210	0.453
10	Uti-gilt advantage-long term-Growth	-0.049	-0.103
	Birla Sun Life MF Company (Indian private sector)		
1	Birla sunlife gilt plus-liquid plan	0.744	1.927
2	Birla sunlife gilt plus-liquid plan-Dividend	0.321	0.694
3	Birla sunlife gilt plus-liquid plan-Growth	0.316	0.689
4	Birla sunlife gilt plus-PF plan	0.336	0.718
5	Birla sunlife gilt plus-PF plan-Dividend	0.164	0.325
6	Birla sunlife gilt plus-PF plan-Growth	0.297	0.631
7	Birla sunlife gilt plus-Regular plan	-0.178	-0.383
8	Birla sunlife gilt plus-Regular plan-Dividend	0.414	0.910
9	Birla sunlife gilt plus-Regular plan-Growth	0.632	1.478
10	Birla sunlife gov. Securities long term fund-plan-A (D)	0.390	0.985
11	Birla sunlife govt. Securities long term fund-plan B-G	-0.560	-1.267
12	Birla sunlife gov. Securities long term fund-retail plan A-D	-0.172	-0.367
13	Birla sunlife gov. Securities long term fund-retail plan B-G		
	-0.469	-1.065	
	Franklin Templeton (Foreign Private Sector MF Company)		
1.	Templeton India gov. Sec fund-com plan-Dividend	0.295	
2.	Templeton India gov. Sec fund-com plan-Growth	0.110	0.233
3.	Templeton India gov. Sec fund-Long Term Plan-Bonus	0.154	0.350
4.	Templeton India gov. Sec fund-Long Term Plan-D	0.417	0.904
5	Templeton India gov. Sec fund-Long Term Plan-Growth	0.226	0.505
6	Templeton India gov. Sec fund-PF plan-Dividend	0.329	0.702
7	Templeton India gov. Sec fund-Treasury plan-D.Option	0.071	0.176

Sl.No	Scheme Name	γ_i	t-Value
8	Templeton India gov. Sec fund-Treasury plan-G.Option	-0.060	-0.126

7. Conclusion

This study is concerned with performance evaluation of the open-ended gilt mutual fund schemes during the financial recession occurred in 2008-2009. In this study, open-ended gilt schemes have been selected from three types of companies according to their ownership pattern (Public sector, Indian private sector & foreign private sector). In this study risk-adjusted performance, market-timing performance, selectivity performance and diversification performance have been examined. It has been observed that the performance of the open-ended gilt schemes of different types of companies is not satisfactory during the recession. However, a comparison has been made on mutual fund performance among the three types of companies. But, the performance of the open-ended gilt schemes of three types of companies is not remarkable. It has been observed that the statistically significant selectivity performance of the Indian private sector MF Company (Birla Sun Life) is better than the public sector (UTI) and also foreign private sector MF Company (Franklin Templeton). But in overall sense, it may be concluded that the performance of the open-ended gilt schemes of different types of companies is unsatisfactory. Therefore, it may not be said that a particular mutual fund company is the best performer from any point of view (risk-adjusted, selectivity, market-timing & diversification) during the recession period.

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