ABSTRACT

During the recent period the growth of mutual fund industry is tremendous. Competition is increasing as more and more companies are entering this industry. Hence, it is very much important for the fund manager to have market timing skills in addition to stock selection skills. These skills help the fund manager to generate superior returns by careful micro security selection efforts, but also by engaging in successful macro market timing activities. This enables the fund managers of judging direction of the market correctly, whether bull or bear. This study is aimed at examining the market timing abilities of Indian mutual fund managers of 137 selected open-ended mutual fund schemes on the basis of the monthly returns from January 2000 to December 2009 by using Jensen & Mazuy Model and Henriksson and Merton model. BSE30 has been used as benchmark proxy and 91 days T-bills rate has been used as a proxy to risk free return. The study finds that the Indian fund managers do not seriously engaged in correct market timing activities at all and are relying on stock selection skills and they have not been successful in earning returns in excess of the market, rather they are timing the market in the wrong direction.

Keywords: Mutual Funds, Market timing abilities, Jensen & Mazuy Model, Henriksson and Merton model.

An Empirical
Investigation

Market Timing Abilities of Indian Mutual Fund Managers

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INTRODUCTION

The Mutual Fund industry has been prevalent in the world since the 18th century; however, India's MF industry took birth in 1963. Government of India (GOI) and Reserve Bank of India (RBI) took initiative and laid the foundation of Unit Trust of India (UTI) in 1963. The initial growth of this industry was slow, but the same accelerated when public sector banks and other public sector insurance corporations entered the market since 1987. Later, in 1993, in the wake of the policies of liberalization and globalization, the Government also permitted the private sector to enter into the mutual fund business. This phase actually gave Indian investors variety and a complete family to select the correct MF for them. The Indian MF industry has faced its ups and down like various other industries in the country but still looks promising and holds a bright future ahead. During the recent period the growth of mutual fund industry is tremendous. Competition is increasing as more and more companies are entering this industry. Hence, it is very much important for the fund manager to have market timing skills in addition to stock selection skills. These skills can thus help the fund manager to generate superior returns by careful micro security selection efforts, but also engaging in successful macro market timing activities. This would mean that fund managers are capable of judging correctly the direction of the market, whether bull or bear.

This paper is aimed at examining the market timing abilities of the Indian mutual fund managers with respect to Treynor & Mazuy model and Henriksson & Merton model and also to examine the parameter stationary of results obtained from both the models.

LITERATURE REVIEW

There has been an excellent study conducted on the market timing abilities of the fund manager. This section, therefore, reviewed major studies relating to market timing abilities of the fund manager carried out both in India and foreign countries.

Treynor and Mazuy (1966)[1] developed a model for testing the market timing abilities of the fund managers. They examined the performance of 57 open-ended mutual fund schemes during the 10 year period from 1953 to 1962. The study noted the absence of statistical evidence that, investment managers had successfully outguessed the market. Of the 57 funds examined by them, only one fund revealed a positive and significant value. **Roy D. Henriksson and Robert C. Merton (1981)**[2] developed the statistical framework for both parametric and nonparametric tests of market-timing ability. If the manager's forecasts were observable, then the nonparametric test could be used without further assumptions about the distribution of security returns. If the manager's forecasts were not observed, then the parametric test could be used under the assumption of either a capital asset pricing model or a multifactor return structure. This specification permitted the identification and separation of

the gains of market-timing skills from the gains of micro stock-selection skills. **J. Fletcher (1995)**[3] examined the selectivity and timing abilities of 120 the UK trusts with Growth, General or Income Objectives as detailed in the Unit Trust Year Book for 1980. He applied a variety of indices and methods including Chen and Stockum and Hendriksson and Merton's measures of timing ability. He reported that, the selectivity skills on average are positive, but the timing performance was negative in his sample period from 1980 to 1989. **Amitabh Gupta (2000)**[4] had examined the market timing abilities of the Indian fund managers using weekly NAV data for 73 mutual fund schemes during the period of 1994 to 1999. He found that managers of closed ended schemes can time the market easily. **Nicolas P. B. Bollen et al. (2001)**[5] estimated parameters of standard stock selection and market timing models using daily returns of 230 mutual funds during the period from January 2, 1985 through December 29, 1995 and quarterly measurement periods. They ranked funds quarterly by abnormal return and measured the performance of each fund the following quarter. They found that, the average abnormal return of the top fund in the post-ranking quarter was 39 basis points. The post-ranking abnormal return disappeared when funds were evaluated over longer periods. These results suggested that superior performance was a short-lived phenomenon that was observable only when funds were evaluated several times a year. **Nalini Prava Tripathy (2006)**[6] evaluated the market timing abilities of the Indian fund managers of thirty-one tax planning schemes in India, over the period from December, 1995 to January, 2004 by using Treynor & Mazuy Model and Henriksson and Merton model.

The study indicated that the fund manager had not been successful in reaping returns in excess of the market; rather they were timing the market in the wrong direction. **Deb, Banerjee and Chakrabarti (2007)**[7] attempted to find the stock selection and market timing abilities of the Indian mutual fund managers using unconditional as well as conditional approaches. The study used a sample of 96 Indian mutual fund schemes with monthly as well as weekly data during the period of January 2000 to June 2005. The study results showed strong evidence of lack of market timing and weak evidence of positive stock selection across all categories of fund with monthly data frequency. And the weekly data frequency analysis showed strong evidence of positive stock selection and negative market timing. **Raju and Rao (2009)**[8] used Treynor and Mazuy & Henriksson and Merton with the BSE Sensex and NSE Nifty as market proxies to measure the market timing ability of the fund managers. The results indicated that a majority of the selected mutual fund scheme managers was not seriously engaged in any market timing activities and were relying mainly on stock selection skills. They also found that the fund managers of private sector exhibited better market timing according to Henriksson and Merton model.

After reviewing the empirical studies, testing market timing abilities of the fund managers both in foreign countries and in India, it is found that the majority of them argue that Fund managers were unable to successfully time the markets. While some argue that at the individual fund level there was some

evidence of superior micro- and macro forecasting ability on the part of the fund manager. And some argue that the measured timing ability could not be explained as a spurious statistical phenomenon and reported that observation frequency matters when judging fund performance.

DATA SOURCE AND SAMPLE

In case of mutual fund schemes there are various schemes being launched as well as matured over a period of time. As of 1st January 2000, total 325 schemes were in operation. But during the period January 2000 to December 2009, total 188 schemes were matured, out of 325 schemes which were launched before 1st January 2000. For the purpose of our study ten year period is selected. Hence out of all the available schemes, the schemes for which data were available for the entire span of study period are selected. For 137 schemes such data were available from January 2000 to December 2009 and hence they are selected as sample for the study, to analyze the performance of the mutual fund schemes. These schemes are from public as well as private sectors.

For the purpose of the research, the closing value of the NAV, on the last working day of the month, for each fund is considered. NAVs per unit have been adjusted for dividends, bonus and rights for appropriate comparison assuming dividends are reinvested at the ex-dividend NAV. The information on the monthly NAV, of sampled mutual fund schemes was collected from different websites viz., www.indiainfoline.com, www.amfiindia.com, www.mutualfundsindia.com and www.valueresearchonline.com. The study used BSE 30 as a surrogate for market portfolio and the information in this regard has been compiled from www.bseindia.com and information on 91 days T-Bills rate as surrogate for the risk free rate of return has been compiled from www.rbi.org.

In respect of the market timing abilities of the fund managers following hypotheses have been framed for the purpose of examination:

H_{01}: Mutual Fund managers do not display distinct Market timing abilities.

H_{02}: The Market timing abilities of the Fund Managers of Growth schemes do not differ from those of other schemes.

H_{03}: The Market timing abilities of the Fund Managers of the bank sponsored mutual fund schemes do not differ from those of Private sector sponsored mutual funds and Institution sponsored mutual fund schemes.

METHODOLOGY ADOPTED TO EXAMINE THE MARKET TIMING ABILITIES OF THE FUND MANAGERS

To calculate monthly return of the scheme, following formula is used:

$$R_{jt} = [(NAV_t - NAV_{t-1} + D_{jt}) / NAV_{t-1}] * 100 \qquad (1)$$

The monthly returns so computed for a single period by using formulae (1) have been compounded to get compounded monthly rates of return of the mutual fund scheme. The following formulae (2) have been used to compute monthly compounded rates of return, R_p, for fund "j":

$$R_p = (Rj1 * R_{j2} * R_{j3} * \ldots \ldots * R_{jn})^{1/n} - 1 \qquad (2)$$

Analogously, the monthly return of the market index BSE 30 has been computed. The 91 days T-Bills rate has been used as a surrogate for the risk free rate of return. The return on the risk free asset i.e. the monthly yields on 91 days T-Bill is given on an annualized basis on the RBI website, which is converted into monthly basis using the following formula.

$$(1+r)^j = (1+R) \qquad (3)$$

Where, r is Monthly risk-free rate, R is Annualized risk-free rate and j is 12 (because r is the monthly return).

The total risk of the sample scheme has been measured by standard deviation (σ) of the return distribution and market risk of the sample scheme has been measured by beta (β).

The Market timing ability of the fund managers has a great impact on the performance of the mutual funds. It refers to the ability of the managers to anticipate the major moves in the stock market prices and accordingly adjust the composition of their portfolios. Keeping this important determinant of the mutual fund performance into consideration, two major market timing ability models, the Treynor and Mazuy Model (1966) and Henriksson and Merton Model (1981) have been employed in order to identify, if the fund managers really have the ability to speculate the market returns or not.. These are also referred to as, the "squared regression model". A brief description of these two models is given below:

1) **Treynor and Mazuy Model:** There are several procedures that have been proposed to correct the effect of timing ability on the estimate of beta. The first is a quadratic regression proposed by Treynor and Mazuy in order to detect the market timing abilities of fund managers. This regression is

$$R_P - R_F = \alpha + \beta (R_M - R_F) + \gamma (R_M - R_F)^2 + \varepsilon_{PT} \qquad (4)$$

Where, R_P is the actual return of the portfolio; R_F is the return on the risk-free asset; R_M is the return of the Market; ε_{PT} is random error term and α, β and γ are parameters of the model.

The parameters in the above model can be estimated by using standard regression methodology. Treynor and Mazuy have argued that estimated value of parameter γ in the above formula act as a measure of market timing skill of the fund manager. If fund managers could able to select the time correctly, the estimated value of γ would be significantly positive. On the contrary, if the estimated value of γ should not

be significantly different from zero, the fund managers are not be able to select the market timing correctly.

2) **Henriksson and Merton Model:** Another return-based approach for estimating timing performance is the option approach developed by Henriksson and Merton. The regression used is similar to the Treynor Mazuy regression. In contrast to the linear beta, adjustment of the Treynor and Mazuy framework, the portfolio beta in the Henriksson and Merton study is assumed to switch between two betas. A large value if the market is expected to do well i.e. when $R_M > R_F$ (up market) and a small value otherwise i.e. when $R_M < R_F$ (down market). Therefore, it is argued that a successful market timer would select a high up market beta and a low down-market beta. Thus, such a relationship can be estimated by an equation using a dummy variable.

$$R_P - R_F = \alpha + \beta (R_M - R_F) + \gamma [D (R_M - R_F)] + \varepsilon_{PT} \quad (5)$$

Where, D is Dummy variable that equals 0 for $R_M > R_F$ and -1 otherwise; R_P is the actual return of the portfolio; R_F is the return on the risk-free asset; R_M is the return of the Market; ε_{PT} is a random error term and α, β and γ are parameters of the model.

So that beta of the portfolio is β in a bull or up-market and $(\beta - \gamma)$ in a bear or down market. Parameter γ indicates the difference between the two betas and significant value of γ would indicate a market timing ability of the fund managers.

It may be noted here, that in both these models, the intercept term α represents the stock selection ability of the fund managers.

E MPIRICAL RESULTS

This section discusses the empirical results pertaining to market timing abilities of fund managers and other related issues in terms of the above two formulations. The order of discussion is as follows:

A. Empirical results pertaining to market timing abilities

B. Market timing and fund objectives

C. Market timing and sponsorship

E EMPIRICAL RESULTS PERTAINING TO MARKET TIMING ABILITIESRESULTS OF TREYNOR AND MAZUY MEASURE (1966)

Table 1 shows the empirical results of Treynor and Mazuy model with respect to BSE 30 benchmark proxy. It is found that out of 137 mutual fund schemes, investment manager of only one scheme, viz., ICICI Prudential Gilt Fund (Investment Plan) (G) appears to be a successful market timer. This is evident from the observed t-values for their gamma coefficients, which is found to be significant and positive at the five percent level. ICICI Prudential Gilt Fund (Investment Plan) (G) is an **Open-ended**

Income Private Sector scheme. There are other ten schemes for which the t-values are significant but are negative. These schemes are Birla Sun Life M N C Fund (G), Franklin FMCG Fund (G), Franklin Pharma Fund (G), ICICI Prudential Balanced Fund (G), ICICI Prudential FMCG Fund (G), ICICI Prudential Growth Plan (G), Kotak Mahindra 30 Unit Scheme (G), Kotak Mahindra Balance (G), LIC Mf Balance Fund (G) and Principal Tax Savings Fund (G). Out of these ten wrong market timers, six are **growth schemes**, three are **balanced schemes** and one is **tax-planning scheme**. Hence, fund managers for these schemes appear to undertake timing activities but were, indeed, unsuccessful, as they were timed in the wrong direction. Out of ten schemes, nine are from **Private sector** and one is from **Institutions (LIC).** So in terms of Treynor and Mazuy model, the results reported here support the hypothesis that Indian mutual fund managers do not display distinct market timing abilities. However, there is evidence that some of the funds are timing the market in the wrong direction.

Results of Henriksson And Merton Measure (1981)

Table 2 presents the empirical results of Henriksson and Merton model with respect to BSE30 benchmark proxy. It is found that out of 137 mutual fund schemes, investment manager of only one scheme viz., Birla Sun Life Cash Plus-Ret (G) is found to be a successful market timer. The t-value for gamma was found to be statistically significant and positive at 5 per cent level. Birla Sun Life Cash Plus-Ret (G) is an **open-ended Income Private Sector scheme**. There are sixteen other schemes for which the t-values are significant but are negative. These schemes are Kotak Mahindra Balance (G), ICICI Prudential Balanced Fund (G), Tata Tax Saving Fund (G), LIC Mf Balance Fund (G), Kotak Mahindra 30 Unit Scheme (G), ICICI Prudential Growth Plan (G), Principal Tax Savings Fund (G), LIC Mf Balance Fund (D), Principal Personal Tax Saver Fund (G), DSP Blackrock Balanced Fund (G), LIC M F Growth Fund (G), Birla Sun Life M N C Fund (G), Franklin India Prima Fund (G), JM Equity Fund (G), JM Balanced Fund (D) and Franklin India Prima Plus (G). Out of these sixteen wrong market timers, seven are **growth schemes**, six are **balanced schemes** and three are **tax-planning schemes**. Fund managers for these schemes appear to undertake timing activities but were, indeed, unsuccessful, as they were timed in the wrong direction. Out of sixteen schemes, thirteen are from **Private sector** and three are from **Institution (LIC).** In terms of Henriksson and Merton model, the results reported here support the hypothesis that Indian mutual fund managers do not display distinct market timing abilities; however, there is evidence that, some of the funds are timing the market in the wrong direction.

Thus in terms of both the model the results indicated that only one scheme ICICI Prudential Gilt Fund (Investment Plan) (G) was found to be reflect market timing abilities. While other seven schemes viz. Birla Sun Life MNC Fund (G), Franklin FMCG Fund (G), Franklin Pharma Fund (G), ICICI Prudential Balanced Fund (G), ICICI Prudential FMCG Fund (G), ICICI Prudential Growth Plan (G), Kotak Mahindra 30 Unit Scheme (G), Kotak Mahindra Balance (G), LIC Mf Balance Fund (G) and Principal Tax Savings Fund (G) were found to be the wrong market timer. Hence it can be concluded that, whether one use Treynor and Mazuy measure or Henriksson and Merton

measure, some of the results (fifty percent) are common for both the measures. These results are similar to those reported by other researchers utilizing data from Indian mutual funds viz. Amitabh Gupta (2000)[4], Bijan Roy and Saikat Sovan Deb (2003)[9], Ramesh Chander (2006)[10], Nalini Parva Tripathy (2006)[6], Soumya Guha Deb, Ashok Banerjee and B B Chakrabarti (2007)[7], B. Phaniswara Raju and K Mallikarjuna Rao (2009)[8] etc.

Summing up, it is to be said that none of the schemes rewarded the investors and the main constraint on the portfolio managers is that they cannot book the profits when the market is booming phase due to lack of depth in the market. At the same time there are no hedging instruments available for them to hedge the market uncertainties.

Market Timing And Fund Objective

It has been hypothesized that the market timing abilities of Fund Managers of growth schemes do not differ from those of other schemes. The growth schemes under investment objective are those which aim to achieve capital appreciation by investing in stocks. Such schemes focus on those companies that are experiencing significant earnings or revenue growth. Such Schemes invest the majority of funds in equities (shares). They promise attractive return on investments and are exposed to high risks depending upon the equity market situations, which are influenced by external factors like economic, social and political aspects of the economy. The balanced funds combine features of growth funds and income funds. These funds invest in companies having potential for capital appreciation and those known for issuing high dividends. The level of risks involved in these funds is lower than growth funds and higher than income funds. Funds that invest in medium to long-term debt instruments issued by private companies, banks, financial institutions, governments and other entities belonging to various sectors (like infrastructure companies etc.) are known as Income Funds. Income funds are low risk profile funds that seek to generate fixed current income (and not capital appreciation) to investors. In order to ensure regular income to investors, income funds distribute large fraction of their surplus to investors. Income funds are generally less risky than equities. To minimize the risk of default, income funds usually invest in securities from issuers who are rated by credit rating agencies. Tax-planning schemes are schemes that offer tax rebates to the investors under specific provisions of the Income Tax Act, 1961 as the Government offers tax incentives for investment in specified avenues - e.g. Equity Linked Savings Schemes (ELSS). Pension schemes launched by the mutual funds also offer tax benefits. These schemes are growth-oriented and invest pre-dominantly in equities. Their growth opportunities and risks associated are like any equity-oriented scheme. Thus, one would expect growth funds to show market timing more than funds with other objectives.

Table 3 presents the results pertaining to market timing and fund objectives in respect of Treynor & Mazuy model and Henriksson & Merton model.

Table 3 indicates that, in respect of Treynor & Mazuy model, there was only one scheme where some market timing was reflected. However, there was some evidence that fund

managers wrongly timed the market. 10 fund managers were found to be wrong market timers. Out of 10 schemes, 6 were Growth Fund Schemes, 3 were Balanced Fund Schemes and 1 was Tax-Planning Scheme. Thus, it could be concluded that the majority of the wrong market timers were fund managers of growth schemes.

In respect of Henriksson and Merton model, there was only one scheme where some market timing was reflected, as the t-values of gamma coefficient were positive and significant at the five percent level. However, there was some evidence that fund managers wrongly timed the market. 16 fund managers were found to be wrong market timers. Out of these 16 schemes, 7 were Growth Fund Schemes, 6 were Balanced Fund Schemes and 3 were Tax-Planning Schemes.

However, results are somewhat different in terms of both the models. As per the wrong market timers are concerned 6 (60 per cent) schemes out of 10 (100 per cent) schemes were from growth schemes with respect to Treynor and Mazuy model and 7 (44 per cent) schemes out of 16 (100 per cent) schemes were from growth schemes with respect to Henriksson and Merton model.

Therefore, overall results support the hypothesis that market timing abilities of Fund Managers of growth schemes do not differ from those of other schemes. There is no scheme found to be the correct market timer with respect to both the models except income scheme. And evidence is found that, fund manager of balanced schemes, growth schemes and tax-planning schemes are the wrong timers on the market.

Market Timing and Sponsorship

It has been hypothesized that, the market timing abilities of Fund managers of the bank sponsored mutual fund schemes do not differ from those of private sector sponsored mutual funds and Institution sponsored mutual fund schemes. Table 4 presents the results pertaining to market timing and sponsorship in respect of Treynor & Mazuy model and Henriksson & Merton model.

Table 4 indicates that, in respect of Treynor & Mazuy model there was only one scheme where some market timing was reflected. The scheme was sponsored by the private sector mutual fund. However, there was some evidence that fund managers wrongly timed the market. 10 fund managers were found to be wrong market timers. Out of 10 schemes, 1 was from Institution sponsored and 9 were from Private Sector sponsored mutual fund. In respect of Henriksson and Merton model there was only one scheme where some market timing was reflected. This scheme was sponsored by the private sector mutual fund only. However, there was some evidence that fund managers wrongly timed the market. 16 schemes were found to be wrong market timers. Out of 16 schemes only 3 were Institution sponsored while remaining 13 schemes were sponsored by the private sector.

Hence, as per Treynor & Mazuy model and Henriksson & Merton model, results do not support the hypothesis that the market timing abilities of Fund managers of the bank sponsored mutual fund schemes do not differ from those of private sector and Institution sponsored mutual fund schemes. And there is no scheme found to be the correct

market timer with respect to both the models except PS-JV-PI schemes. But it is found that, the majority of the wrong market timers were sponsored by the private sector mutual funds. There is no bank sponsored mutual fund schemes which found to be wrong market timers.

SUMMARY AND CONCLUSIONS

This paper has empirically analyzed the market timing abilities of the Indian mutual fund manager in the form of two models, Treynor & Mazuy model and Henriksson & Merton model. Based on the results found, it may be concluded that Indian fund managers does not seriously engaged in correct market timing activities at all and are relying only on stock selection skills. The market timing abilities of Fund Managers of growth schemes do not differ from those of other schemes. The market timing abilities of Fund managers of the bank sponsored mutual fund schemes do not differ from those of private sector and Institution sponsored mutual fund schemes.

Summing up, it is to be said that none of the schemes satisfied the investors and the main limitation on the portfolio managers is that they cannot book the profits when the market is booming phase due to lack of depth in the market. At the same time there are no hedging instruments available for them to hedge the market uncertainties.

CONTRIBUTION OF THE STUDY

This study would help the existing and prospective AMCs, institutional and individual investors, researchers and policy makers.

This will have broader implications for institutional and individual investors to select an appropriate scheme for investment, to existing and prospective AMCs for developing competitive strategies, becoming more investor oriented, and developing appropriate policies encouraging the healthy growth of Indian Mutual Funds. From an academic perspective, the objective of identifying superior fund manager is interesting as it encourages the development and application of new models and theories thus making a significant contribution to the body of knowledge of investment management.

SCOPE FOR FUTURE RESEARCH

The present study is an attempt to mainly study market timing ability of Indian Mutual Fund Managers during the period January 2000 to December 2009. The scope for further research is summarized below:

- The performance may be examined by taking an enlarged sample.

- The study period may go beyond 10 years. Testing of fund performance in the long run can be done.

- One can use daily or weekly data for evaluating the market timing abilities of fund managers as against month-end data used in this study.

- The study used only two characteristics viz., scheme category and sponsorship of the scheme. The Future study can be done including variants such as Fund Market capitalization, Fund size, NAV, Risk, P/E ratio, Expense ratio, Turnover, Management tenure, Fund age , Diversification level, Number of holdings, Education level of fund managers, Age of fund manager etc. to see whether these variables are affecting the fund performance or whether it best indicates the future performance.

Table 1 : Results of Treynor and Mazuy Model : BSE 30

Balanced								
Sr. No.	Scheme Name	Beta	Standard Error Beta	t-beta	Gamma	Standard Error Gamma	t-Gamma	R^2
1	Birla Sun Life'95 Fund (G)	0.748912	0.037063	20.206686	-0.001493	0.002794	-0.534454	0.778984
2	Birla Sun Life'95 Fund (D)	0.749437	0.044804	16.727060	-0.002199	0.003377	-0.651166	0.707411
3	DSP Blackrock Balanced Fund (G)	0.695275	0.024114	28.832286	-0.001907	0.001818	-1.049061	0.877776
4	Templeton India Pension Plan (G)	0.351217	0.013866	25.328748	-0.001599	0.001045	-1.529455	0.847511
5	Templeton India Pension Plan (D)	0.369894	0.031338	11.803340	0.001585	0.002362	0.671047	0.546213
6	HDFC Prudence Fund (D)	0.703291	0.054141	12.989980	-0.001035	0.004081	-0.253530	0.592818
7	HDFC Prudence Fund (G)	0.705666	0.032811	21.507244	-0.000523	0.002473	-0.211657	0.799565
8	ICICI Prudential Balanced Fund (G)	0.688453	0.030750	22.388373	-0.006997	0.002318	**-3.018883***	0.815209
9	JM Balanced Fund (G)	0.667686	0.073271	9.112502	-0.004809	0.005523	-0.870830	0.419886
10	JM Balanced Fund (D)	0.767701	0.040654	18.883613	-0.003138	0.003064	-1.024059	0.755303
11	Kotak Mahindra Balance (G)	0.628389	0.040240	15.616008	-0.008061	0.003033	**-2.657753***	0.684582

12	LIC Mf Balance Fund (D)	0.678899	0.041497	16.360192	-0.005510	0.003128	-1.761728	0.700533
13	LIC Mf Balance Fund (G)	0.663994	0.035144	18.893475	-0.005886	0.002649	**-2.222044***	0.757709
14	LIC MF Unit Linked Insurance Scheme (D)	0.539650	0.054066	9.981270	-0.005268	0.004075	-1.292704	0.466817
15	Principal Balanced Fund (D)	0.598812	0.150766	3.971785	0.007852	0.011364	0.690968	0.122541
16	Principal Balanced Fund (G)	0.768666	0.149101	5.155335	0.015398	0.011238	1.370113	0.196220
17	SBI Magnum Balanced Fund (G)	0.818534	0.070517	11.607673	-0.001015	0.005315	-0.190880	0.537538
18	Tata Balanced Fund (G)	0.750057	0.035812	20.944051	-0.001837	0.002699	-0.680564	0.791157
19	UTI Balanced Fund (D)	0.581002	0.049197	11.809745	-0.004357	0.003708	-1.174938	0.548880
20	UTI Balanced Fund (G)	0.625438	0.034186	18.295148	-0.000998	0.002577	-0.387120	0.742813
21	UTI Ulip (G)	0.353864	0.033448	10.579439	-0.001533	0.002521	-0.607862	0.492190
Growth								
22	Baroda Pioneer Diversified fund (G)	1.029915	0.041142	25.033463	-0.001636	0.003101	-0.527527	0.843934
23	Birla Sun Life Advantage Fund (G)	1.052305	0.042239	24.913129	0.001398	0.003184	0.439085	0.842541
24	Birla Sun Life Equity (G)	1.066579	0.048264	22.098789	-0.002337	0.003638	-0.642302	0.808295
25	Birla Sun Life India Opportunities Fund (D)	1.082205	0.095546	11.326559	-0.006115	0.007202	-0.849155	0.526944
26	Birla Sun Life India Opportunities Fund (G)	1.031034	0.068195	15.119008	-0.004858	0.005140	-0.945211	0.664529
27	Birla Sun Life M N C Fund (G)	0.718217	0.040865	17.575399	-0.006211	0.003080	**-2.016570***	0.730038
28	Birla Sun Life M N C Fund (D)	0.732905	0.059283	12.362847	-0.003643	0.004468	-0.815212	0.569922
29	DSP Blackrock Equity Fund (G)	0.969169	0.097523	9.937814	0.000540	0.007351	0.073411	0.459864
30	Franklin Fmcg Fund (G)	0.547784	0.044162	12.403969	-0.006748	0.003329	**-2.027251***	0.577382
31	Franklin India Bluechip Fund (G)	0.952332	0.025841	36.853107	-0.002099	0.001948	-1.077821	0.921421
32	Franklin India Bluechip Fund (D)	0.946025	0.061715	15.328840	0.000995	0.004652	0.213862	0.669494
33	Franklin India Prima Fund (G)	1.013814	0.061143	16.580970	-0.005659	0.004609	-1.227809	0.704733
34	Franklin India Prima Fund (D)	1.000577	0.071022	14.088324	-0.002190	0.005353	-0.409095	0.631490
35	Franklin India Prima Plus (G)	0.933854	0.031830	29.338768	-0.001628	0.002399	-0.678689	0.881354
36	Franklin India Prima Plus (D)	0.902910	0.059798	15.099323	0.001149	0.004507	0.254884	0.662791
37	Franklin Infotech Fund (D)	0.957400	0.094789	10.100328	-0.007933	0.007145	-1.110327	0.471480
38	Franklin Infotech Fund (G)	0.933142	0.088585	10.533843	-0.009984	0.006677	-1.495321	0.494596
39	Franklin Pharma Fund (G)	0.595928	0.056731	10.504459	-0.009161	0.004276	**-2.142327***	0.498678
40	Templeton India Growth Fund (G)	0.969609	0.030977	31.301381	0.000859	0.002335	0.367837	0.894139
41	HDFC Capital Builder	0.828821	0.068744	12.056627	-0.003541	0.005182	-0.683435	0.557262

	Fund (D)							
42	HDFC Capital Builder Fund (G)	0.855284	0.044253	19.327166	-0.003778	0.003336	-1.132639	0.763887
43	HDFC Equity Fund (G)	0.966668	0.033308	29.022119	-0.000862	0.002511	-0.343185	0.879000
44	HDFC Equity Fund (D)	0.864957	0.065115	13.283601	-0.003103	0.004908	-0.632290	0.604145
45	HDFC Top 200 Fund (D)	0.967376	0.059433	16.276683	-0.001650	0.004480	-0.368236	0.695706
46	HDFC Top 200 Fund (G)	0.973214	0.035959	27.064867	-0.001084	0.002710	-0.399979	0.863361
47	ICICI Prudential FMCG Fund (G)	0.625833	0.055493	11.277604	-0.011543	0.004183	**-2.759679***	0.538634
48	ICICI Prudential Growth Plan (G)	0.934569	0.033384	27.994139	-0.007158	0.002516	**-2.844651***	0.872445
49	ICICI Prudential Growth Plan (D)	0.910320	0.064695	14.071037	-0.006913	0.004876	-1.417745	0.633395
50	ICICI Prudential Power (G)	0.332972	0.558187	0.596524	-0.026439	0.042073	-0.628405	0.006494
51	JM Basic Fund (G)	1.204684	0.102567	11.745396	0.003298	0.007731	0.426627	0.543399
52	JM Equity Fund (D)	1.031905	0.054911	18.792377	-0.002782	0.004139	-0.672249	0.753133
53	JM Equity Fund (G)	1.085862	0.040892	26.554708	-0.002671	0.003082	-0.866588	0.858954
54	Kotak Mahindra 30 Unit Scheme (G)	0.979351	0.034689	28.232494	-0.006218	0.002615	**-2.378225***	0.873931
55	LIC M F Growth Fund (G)	0.974682	0.053052	18.372080	-0.004388	0.003999	-1.097253	0.745149
56	LIC MF Equity Fund (G)	1.065478	0.036447	29.233446	-0.001128	0.002747	-0.410645	0.880546
57	Principal Index Fund (G)	0.987294	0.013456	73.374073	-0.001385	0.001014	-1.365467	0.978925
58	Reliance Growth Fund (D)	0.909232	0.076855	11.830522	0.001226	0.005793	0.211624	0.546822
59	Reliance Growth Fund (G)	0.978792	0.051939	18.844890	0.000118	0.003915	0.030158	0.753796
60	Reliance Vision Fund (G)	0.930599	0.045895	20.276590	-0.002283	0.003459	-0.660024	0.780253
61	SBI Magnum Contra Fund (G)	0.929546	0.077918	11.929727	-0.001669	0.005873	-0.284260	0.551222
62	SBI Magnum Equity Fund (G)	1.087310	0.066434	16.366732	-0.003491	0.005007	-0.697250	0.698394
63	SBI Magnum F M C G Fund (G)	0.603490	0.062623	9.636853	-0.009036	0.004720	-1.914347	0.455161
64	SBI Magnum Global Fund-1994 (G)	1.147506	0.066565	17.238985	0.003067	0.005017	0.611382	0.719385
65	SBI Magnum I T Fund (G)	1.064959	0.090212	11.805080	-0.005033	0.006800	-0.740115	0.547041
66	SBI Magnum Multiplier Plus-1993 (G)	1.103700	0.060372	18.281745	-0.002617	0.004550	-0.575168	0.742676
67	SBI Magnum Pharma Fund (G)	0.783726	0.071652	10.938001	-0.001378	0.005401	-0.255237	0.507999
68	Sundaram B N P Paribas Growth Fund (G)	1.035624	0.039067	26.509104	0.001474	0.002945	0.500488	0.858327
69	Tata Equity Opportunities Fund (D)	0.892580	0.058215	15.332589	0.001184	0.004388	0.269877	0.669612
70	Tata Growth Fund (G)	0.868086	0.046338	18.733613	0.001514	0.003493	0.433607	0.751611

71	Tata Life Sciences & Technology Fund (G)	0.930513	0.060434	15.397241	0.000126	0.004555	0.027768	0.671472
72	Tata Pure Equity Fund (G)	0.985402	0.034425	28.624616	-0.001640	0.002595	-0.631920	0.876095
73	Tata Select Equity Fund (G)	1.091280	0.059108	18.462503	-0.005790	0.004455	-1.299517	0.747309
74	Taurus Bonanza (G)	1.012667	0.057308	17.670579	-0.000126	0.004320	-0.029215	0.729156
75	Taurus Discovery (G)	1.120227	0.074317	15.073540	0.004325	0.005602	0.772033	0.662398
76	Taurus Starshare (G)	1.144160	0.065475	17.474734	0.004368	0.004935	0.885092	0.725037
77	UTI Master Value Fund (G)	0.885224	0.072181	12.263906	-0.001885	0.005441	-0.346390	0.564927
78	UTI Mastershare (G)	0.896687	0.032243	27.810367	-0.000616	0.002430	-0.253366	0.869618
Income								
79	Birla Sun Life Cash Manager-Ret (G)	0.001429	0.001111	1.286173	0.000068	0.000084	0.814143	0.019414
80	Birla Sun Life Cash Plus-Ret (G)	-0.000556	0.000762	-0.729622	0.000113	0.000057	1.963386	0.036672
81	Birla Sun Life Income Plus-Ret (G)	0.039600	0.021021	1.883789	-0.001434	0.001584	-0.904947	0.036558
82	Birla Sun Life Income Plus-Ret (QD)	0.045626	0.025620	1.780879	-0.000541	0.001931	-0.279963	0.027336
83	DBS Chola Triple Ace (G)	0.006397	0.015787	0.405164	0.001613	0.001190	1.355688	0.016878
84	DSP Blackrock Bond Fund (G)	0.027683	0.014432	1.918235	-0.001308	0.001088	-1.202452	0.042679
85	DSP Blackrock Bond Fund (QD)	0.025300	0.025988	0.973527	-0.000390	0.001959	-0.199129	0.008473
86	Templeton India Income Fund (G)	0.031220	0.012045	2.591978	-0.001287	0.000908	-1.417962	0.070530
87	Templeton India Income Fund (QD)	0.043451	0.017334	2.506656	-0.000836	0.001307	-0.639705	0.054796
88	Templeton India Treasury Management Account (G)	-0.000460	0.000961	-0.478947	0.000123	0.000072	1.703747	0.026425
89	Templeton India Treasury Management Account (WD)	0.003101	0.002771	1.119089	-0.000176	0.000209	-0.840926	0.016768
90	HDFC Cash Management Fund - Savings Plan (WD)	0.037065	0.037710	0.982899	-0.001830	0.002842	-0.643701	0.011867
91	HDFC Cash Management Fund - Savings Plan (G)	-0.022985	0.049074	-0.468380	0.001543	0.003699	0.417118	0.003413
92	HDFC High Interest Fund (QD)	0.048104	0.024249	1.983758	-0.000010	0.001828	-0.005544	0.032817
93	HDFC High Interest Fund (AD)	0.027261	0.028222	0.965953	-0.001584	0.002127	-0.744675	0.012782
94	HDFC High Interest Fund (HD)	0.030089	0.024363	1.235023	-0.003113	0.001836	-1.694929	0.036863
95	HDFC High Interest Fund (G)	-0.080575	0.089558	-0.899690	0.012175	0.006750	1.803601	0.034097
96	ING Vysya Income Fund-Ret (QD)	0.074885	0.023030	3.251628	-0.002388	0.001736	-1.375705	0.097663
97	ING Vysya Income Fund-Ret (G)	0.028721	0.015946	1.801113	-0.000935	0.001202	-0.777570	0.032338

98	ICICI Prudential Gilt Fund (Investment Plan) (G)	0.023456	0.026395	0.888629	0.004014	0.001990	**2.017571***	0.039937
99	ICICI Prudential Gilt Fund (Treasury Plan) (QD)	0.010680	0.038634	0.276432	0.000259	0.002912	0.088949	0.000722
100	ICICI Prudential Gilt Fund (Treasury Plan) (G)	0.006730	0.011575	0.581367	0.000576	0.000872	0.660052	0.006562
101	ICICI Prudential Income Plan (G)	0.035828	0.020567	1.741994	-0.000149	0.001550	-0.096014	0.025598
102	JM G-Sec Fund - Regular (D)	0.038454	0.026113	1.472579	0.003235	0.001968	1.643511	0.039913
103	JM High Liquidity Fund (G)	-0.000773	0.001341	-0.576244	0.000149	0.000101	1.471218	0.021209
104	JM High Liquidity Fund (WD)	-0.003212	0.018000	-0.178464	0.000392	0.001357	0.288996	0.001002
105	JM Income Fund (G)	0.027777	0.010033	2.768384	-0.001293	0.000756	-1.710225	0.084330
106	JM Income Fund (D)	0.053763	0.041623	1.291663	-0.000352	0.003137	-0.112299	0.014310
107	Kotak Mahindra Gilt-Savings (G)	0.003645	0.003649	0.998802	-0.000371	0.000275	-1.350057	0.023956
108	LIC Bond Fund (G)	0.017206	0.012676	1.357384	-0.001282	0.000955	-1.341514	0.030736
109	LIC Bond Fund (D)	0.022153	0.018291	1.211149	0.000734	0.001379	0.532119	0.014757
110	LIC Monthly Income Plan (MD)	0.147329	0.015361	9.591235	-0.000523	0.001158	-0.451880	0.443085
111	LIC Monthly Income Plan (G)	0.239154	0.107200	2.230912	-0.000289	0.008080	-0.035733	0.041166
112	LIC MF Govt. Securities Fund-Regular (G)	0.034687	0.021270	1.630782	0.000437	0.001603	0.272707	0.022955
113	LIC MF Govt. Securities Fund-Regular (D)	0.013740	0.028955	0.474529	0.001426	0.002182	0.653420	0.005539
114	SBI Magnum Income Fund-1998 (D)	0.048859	0.023846	2.048937	-0.000546	0.001797	-0.303810	0.035769
115	SBI Magnum Income Fund-1998 (G)	0.036942	0.014234	2.595332	-0.001367	0.001073	-1.273942	0.067709
116	SBI Magnum Insta Cash Fund (WD)	0.008205	0.015927	0.515155	0.000285	0.001201	0.237015	0.002744
117	SBI Magnum Insta Cash Fund (G)	-0.001515	0.007890	-0.191995	0.000201	0.000595	0.337626	0.001310
118	Sundaram B N P Paribas Bond Saver (G)	0.033129	0.012523	2.645458	-0.001111	0.000944	-1.177445	0.067877
119	Tata Gilt RIP (G)	0.043961	0.023439	1.875549	-0.000372	0.001767	-0.210663	0.029859
120	Tata Gilt RIP (D)	0.054721	0.024838	2.203135	-0.000253	0.001872	-0.134974	0.040358
121	Tata Income Fund (G)	0.013815	0.015507	0.890886	-0.000843	0.001169	-0.721216	0.011307
122	Tata Income Fund (HD)	0.029384	0.019488	1.507844	-0.002240	0.001469	-1.524953	0.038500
123	UTI Bond Fund (D)	0.076216	0.041056	1.856396	-0.000716	0.003095	-0.231281	0.029358
124	UTI Bond Fund (G)	0.023614	0.018419	1.282055	-0.000059	0.001388	-0.042186	0.013997
125	UTI Money Market Fund (WD)	-0.031966	0.073377	-0.435642	0.000437	0.005531	0.079029	0.001693
Tax-Planning								
126	Baroda Pioneer Elss 96	1.046483	0.061589	16.991319	-0.002389	0.004642	-0.514715	0.713701

	(G)							
127	Canara Robeco Equity Tax Saver (G)	1.054949	0.070026	15.065127	0.001168	0.005278	0.221373	0.661771
128	HDFC Tax Saver (D)	0.886900	0.076329	11.619418	-0.001112	0.005753	-0.193250	0.538043
129	HDFC Tax Saver (G)	0.971513	0.062825	15.463844	-0.002141	0.004735	-0.452059	0.673695
130	ICICI Prudential Tax Plan (G)	1.045225	0.056778	18.409063	-0.004001	0.004280	-0.934993	0.745692
131	LIC MF Tax Plan (G)	0.973095	0.055485	17.538101	0.000442	0.004182	0.105596	0.726150
132	Principal Personal Tax Saver Fund (G)	1.008841	0.079224	12.734117	-0.010383	0.005971	-1.738708	0.588117
133	Principal Tax Savings Fund (G)	0.998069	0.051081	19.538884	-0.009036	0.003850	**-2.346927***	0.769941
134	SBI Magnum Tax Gain'93 (G)	1.059177	0.083411	12.698263	-0.003737	0.006287	-0.594353	0.582379
135	Sahara Tax Gain Fund (G)	1.067449	0.104494	10.215392	0.003900	0.007876	0.495115	0.473946
136	Tata Tax Saving Fund (G)	1.008285	0.056033	17.994361	-0.006723	0.004223	-1.591769	0.738106
137	Taurus Tax shield (G)	1.089163	0.086088	12.651677	0.001889	0.006489	0.291073	0.579851

Note: * Significant at 5% level

<center>Table 2 : Results of Henriksson and Merton Model : BSE 30</center>

Sr. No.	Scheme Name	Beta	Standard Error Beta	t-beta	Gamma	Standard Error Gamma	t-Gamma	R^2
Balanced								
1	Birla Sun Life'95 Fund (G)	0.673829	0.070936	9.499059	-0.149597	0.120441	-1.242079	0.781348
2	Birla Sun Life'95 Fund (D)	0.651028	0.085704	7.596233	-0.196135	0.145514	-1.347872	0.710870
3	DSP Blackrock Balanced Fund (G)	0.605960	0.045595	13.289975	-0.177987	0.077415	**-2.299128***	0.881994
4	Templeton India Pension Plan (G)	0.315939	0.026673	11.844890	-0.070520	0.045287	-1.557176	0.847621
5	Templeton India Pension Plan (D)	0.419147	0.060181	6.964812	0.098290	0.102179	0.961940	0.548057
6	HDFC Prudence Fund (D)	0.634970	0.103945	6.108680	-0.136040	0.176486	-0.770828	0.594669
7	HDFC Prudence Fund (G)	0.651168	0.062870	10.357382	-0.108436	0.106745	-1.015845	0.801256
8	ICICI Prudential Balanced Fund (G)	0.536740	0.059172	9.070796	-0.303311	0.100467	**-3.019012***	0.815210
9	JM Balanced Fund (G)	0.512308	0.140435	3.648000	-0.310027	0.238441	-1.300225	0.424481
10	JM Balanced Fund (D)	0.628021	0.077094	8.146120	-0.278398	0.130896	**-2.126854***	0.762358
11	Kotak Mahindra Balance (G)	0.387929	0.075314	5.150849	-0.479950	0.127873	**-3.753340***	0.701613
12	LIC Mf Balance Fund (D)	0.515956	0.078934	6.536536	-0.325243	0.134020	**-2.426826***	0.707377
13	LIC Mf Balance Fund (G)	0.513319	0.067061	7.654467	-0.300960	0.113862	**-2.643213***	0.761746

14	LIC MF Unit Linked Insurance Scheme (D)	0.393468	0.103563	3.799325	-0.291870	0.175836	-1.659900	0.471684
15	Principal Balanced Fund (D)	0.797978	0.289898	2.752615	0.397835	0.492210	0.808264	0.123864
16	Principal Balanced Fund (G)	1.182633	0.285670	4.139862	0.826663	0.485030	1.704353	0.203167
17	SBI Magnum Balanced Fund (G)	0.753605	0.135531	5.560401	-0.129293	0.230114	-0.561867	0.538648
18	Tata Balanced Fund (G)	0.651410	0.068209	9.550169	-0.196516	0.115810	-1.696872	0.795401
19	UTI Balanced Fund (D)	0.468490	0.094434	4.961034	-0.224723	0.160337	-1.401572	0.551113
20	UTI Balanced Fund (G)	0.569966	0.065548	8.695401	-0.110496	0.111292	-0.992844	0.744651
21	UTI Ulip (G)	0.348933	0.064464	5.412843	-0.010198	0.109451	-0.093173	0.490610
Growth								
22	Baroda Pioneer Diversified fund (G)	0.965818	0.078954	12.232657	-0.127803	0.134054	-0.953373	0.844776
23	Birla Sun Life Advantage Fund (G)	0.998890	0.081141	12.310515	-0.105786	0.137767	-0.767860	0.843077
24	Birla Sun Life Equity (G)	0.935118	0.091930	10.172046	-0.261854	0.156086	-1.677629	0.812170
25	Birla Sun Life India Opportunities Fund (D)	0.836000	0.182463	4.581736	-0.490862	0.309799	-1.584452	0.534087
26	Birla Sun Life India Opportunities Fund (G)	0.820499	0.129716	6.325371	-0.419651	0.220240	-1.905423	0.672204
27	Birla Sun Life M N C Fund (G)	0.571446	0.078378	7.290905	-0.293287	0.133076	**-2.203913***	0.731805
28	Birla Sun Life M N C Fund (D)	0.642640	0.113977	5.638315	-0.180326	0.193519	-0.931826	0.570671
29	DSP Blackrock Equity Fund (G)	1.009838	0.187614	5.382519	0.080960	0.318545	0.254157	0.460140
30	Franklin Fmcg Fund (G)	0.464709	0.085990	5.404243	-0.166846	0.145999	-1.142785	0.567281
31	Franklin India Bluechip Fund (G)	0.876578	0.049287	17.785342	-0.151088	0.083682	-1.805501	0.922804
32	Franklin India Bluechip Fund (D)	0.964846	0.118763	8.124113	0.037661	0.201645	0.186767	0.669463
33	Franklin India Prima Fund (G)	0.801121	0.116125	6.898778	-0.424147	0.197165	**-2.151222***	0.712370
34	Franklin India Prima Fund (D)	0.854879	0.135841	6.293235	-0.290107	0.230640	-1.257835	0.635924
35	Franklin India Prima Plus (G)	0.830064	0.060322	13.760616	-0.206682	0.102418	**-2.018011***	0.884923
36	Franklin India Prima Plus (D)	0.845972	0.114935	7.360446	-0.112852	0.195145	-0.578300	0.663573
37	Franklin Infotech Fund (D)	0.739588	0.181818	4.067728	-0.434910	0.308704	-1.408826	0.474848
38	Franklin Infotech Fund (G)	0.657138	0.169439	3.878326	-0.551086	0.287685	-1.915589	0.500650
39	Franklin Pharma Fund (G)	0.436845	0.109934	3.973718	-0.318520	0.186653	-1.706483	0.491606
40	Templeton India	0.955876	0.059624	16.031750	-0.027067	0.101234	-0.267368	0.894081

	Growth Fund (G)						
41	HDFC Capital Builder Fund (D)	0.721242	0.132028	5.462804	-0.214708	0.224166	-0.957807	0.558967
42	HDFC Capital Builder Fund (G)	0.724527	0.084428	8.581559	-0.260831	0.143348	-1.819563	0.767900
43	HDFC Equity Fund (G)	0.891645	0.063604	14.018599	-0.149313	0.107992	-1.382629	0.880841
44	HDFC Equity Fund (D)	0.693620	0.124119	5.588338	-0.341297	0.210738	-1.619531	0.611564
45	HDFC Top 200 Fund (D)	0.906781	0.114242	7.937364	-0.120847	0.193968	-0.623024	0.696366
46	HDFC Top 200 Fund (G)	0.906266	0.068857	13.161527	-0.133326	0.116911	-1.140410	0.864689
47	ICICI Prudential FMCG Fund (G)	0.443243	0.108404	4.088812	-0.365854	0.184056	-1.987732	0.524538
48	ICICI Prudential Growth Plan (G)	0.795298	0.064673	12.297144	-0.278629	0.109807	**-2.537443***	0.870722
49	ICICI Prudential Growth Plan (D)	0.761172	0.124501	6.113773	-0.298193	0.211387	-1.410652	0.633333
50	ICICI Prudential Power (G)	-0.451492	1.072522	-0.420963	-1.565804	1.821003	-0.859858	0.009425
51	JM Basic Fund (G)	1.112304	0.197269	5.638522	-0.182727	0.334937	-0.545557	0.543853
52	JM Equity Fund (D)	0.863129	0.104262	8.278494	-0.336124	0.177023	-1.898761	0.759642
53	JM Equity Fund (G)	0.945259	0.077441	12.206238	-0.280109	0.131484	**-2.130361***	0.863386
54	Kotak Mahindra 30 Unit Scheme (G)	0.832649	0.066453	12.529957	-0.293152	0.112828	**-2.598222***	0.875056
55	LIC M F Growth Fund (G)	0.785426	0.100521	7.813545	-0.377242	0.170672	**-2.210337***	0.752911
56	LIC MF Equity Fund (G)	0.985087	0.069638	14.145862	-0.160052	0.118236	-1.353667	0.882232
57	Principal Index Fund (G)	0.968703	0.026020	37.229449	-0.037305	0.044178	-0.844423	0.978717
58	Reliance Growth Fund (D)	0.835591	0.147703	5.657241	-0.146024	0.250781	-0.582279	0.547969
59	Reliance Growth Fund (G)	0.908742	0.099656	9.118777	-0.139176	0.169203	-0.822540	0.755222
60	Reliance Vision Fund (G)	0.827398	0.087763	9.427624	-0.205679	0.149011	-1.380301	0.782992
61	SBI Magnum Contra Fund (G)	0.835199	0.149637	5.581512	-0.187925	0.254064	-0.739678	0.553018
62	SBI Magnum Equity Fund (G)	0.932874	0.126995	7.345762	-0.307812	0.215621	-1.427559	0.702359
63	SBI Magnum F M C G Fund (G)	0.434531	0.120988	3.591504	-0.338114	0.205423	-1.645943	0.450775
64	SBI Magnum Global Fund-1994 (G)	1.121576	0.128265	8.744204	-0.050731	0.217778	-0.232947	0.718612
65	SBI Magnum I T Fund (G)	0.854258	0.172480	4.952799	-0.420026	0.292848	-1.434278	0.552832
66	SBI Magnum Multiplier Plus-1993 (G)	0.987007	0.115640	8.535147	-0.232579	0.196342	-1.184560	0.745026
67	SBI Magnum Pharma Fund (G)	0.704928	0.137649	5.121189	-0.156950	0.233711	-0.671557	0.509629
68	Sundaram B N P Paribas Growth Fund (G)	1.006297	0.075190	13.383415	-0.057898	0.127663	-0.453521	0.858273

69	Tata Equity Opportunities Fund (D)	0.863866	0.112013	7.712172	-0.056754	0.190184	-0.298416	0.669658
70	Tata Growth Fund (G)	0.834024	0.089164	9.353779	-0.067295	0.151390	-0.444517	0.751632
71	Tata Life Sciences & Technology Fund (G)	0.845135	0.115921	7.290595	-0.169635	0.196819	-0.861880	0.673560
72	Tata Pure Equity Fund (G)	0.908519	0.065826	13.801792	-0.153212	0.111764	-1.370846	0.877651
73	Tata Select Equity Fund (G)	0.916114	0.112959	8.110170	-0.349604	0.191789	-1.822856	0.750770
74	Taurus Bonanza (G)	0.929063	0.109902	8.453552	-0.166174	0.186600	-0.890536	0.730993
75	Taurus Discovery (G)	1.149905	0.143337	8.022392	0.060101	0.243368	0.246956	0.660842
76	Taurus Starshare (G)	1.121018	0.126393	8.869276	-0.044854	0.214600	-0.209012	0.723284
77	UTI Master Value Fund (G)	0.793664	0.138610	5.725872	-0.182443	0.235342	-0.775223	0.566721
78	UTI Mastershare (G)	0.877162	0.062025	14.142069	-0.038962	0.105310	-0.369977	0.869700
Income								
79	Birla Sun Life Cash Manager-Ret (G)	0.002417	0.002141	1.128992	0.001982	0.003636	0.545207	0.016332
80	Birla Sun Life Cash Plus-Ret (G)	0.002041	0.001463	1.394696	0.005189	0.002484	**2.088942***	0.040744
81	Birla Sun Life Income Plus-Ret (G)	0.035520	0.040591	0.875083	-0.008480	0.068918	-0.123039	0.029883
82	Birla Sun Life Income Plus-Ret (QD)	0.052684	0.049311	1.068404	0.013885	0.083723	0.165845	0.026909
83	DBS Chola Triple Ace (G)	0.025276	0.030549	0.827383	0.037937	0.051868	0.731414	0.005886
84	DSP Blackrock Bond Fund (G)	0.016167	0.027914	0.579173	-0.023226	0.047395	-0.490046	0.032749
85	DSP Blackrock Bond Fund (QD)	0.037437	0.049999	0.748746	0.024018	0.084893	0.282919	0.008819
86	Templeton India Income Fund (G)	0.019065	0.023339	0.816864	-0.024489	0.039627	-0.618004	0.057523
87	Templeton India Income Fund (QD)	0.041121	0.033414	1.230671	-0.004847	0.056732	-0.085438	0.051521
88	Templeton India Treasury Management Account (G)	0.001792	0.001855	0.965986	0.004507	0.003150	1.431080	0.019376
89	Templeton India Treasury Management Account (WD)	-0.000543	0.005334	-0.101860	-0.007288	0.009057	-0.804773	0.016267
90	HDFC Cash Management Fund - Savings Plan (WD)	-0.003807	0.072557	-0.052475	-0.081700	0.123193	-0.663192	0.012083
91	HDFC Cash Management Fund - Savings Plan (G)	0.006467	0.094449	0.068469	0.058930	0.160362	0.367484	0.003079
92	HDFC High Interest Fund (QD)	0.071057	0.046595	1.524989	0.045610	0.079112	0.576530	0.035580
93	HDFC High Interest Fund (AD)	0.008857	0.054400	0.162819	-0.036985	0.092363	-0.400434	0.009432
94	HDFC High Interest Fund (HD)	-0.029834	0.047004	-0.634720	-0.119893	0.079807	-1.502293	0.031847
95	HDFC High Interest Fund (G)	0.153522	0.172847	0.888195	0.468375	0.293472	1.595977	0.028346
96	ING Vysya Income Fund-Ret (QD)	0.032375	0.044433	0.728620	-0.085100	0.075442	-1.128011	0.092891

97	ING Vysya Income Fund-Ret (G)	0.027943	0.030765	0.908285	-0.001789	0.052235	-0.034244	0.027305
98	ICICI Prudential Gilt Fund (Investment Plan) (G)	0.104877	0.050902	2.060372	0.162849	0.086425	1.884281	0.035760
99	ICICI Prudential Gilt Fund (Treasury Plan) (QD)	0.003790	0.074341	0.050976	-0.013625	0.126222	-0.107945	0.000755
100	ICICI Prudential Gilt Fund (Treasury Plan) (G)	0.019345	0.022274	0.868519	0.025220	0.037818	0.666879	0.006639
101	ICICI Prudential Income Plan (G)	0.053020	0.039535	1.341097	0.034126	0.067126	0.508395	0.027687
102	JM G-Sec Fund - Regular (D)	0.114667	0.050144	2.286761	0.152296	0.085138	1.788822	0.043930
103	JM High Liquidity Fund (G)	0.002211	0.002585	0.855316	0.005968	0.004388	1.359940	0.018592
104	JM High Liquidity Fund (WD)	-0.001637	0.034648	-0.047237	0.003233	0.058828	0.054957	0.000309
105	JM Income Fund (G)	0.009203	0.019443	0.473336	-0.037247	0.033011	-1.128304	0.071433
106	JM Income Fund (D)	0.030005	0.080057	0.374794	-0.047305	0.135926	-0.348018	0.015231
107	Kotak Mahindra Gilt-Savings (G)	-0.000213	0.007064	-0.030155	-0.007763	0.011994	-0.647233	0.012187
108	LIC Bond Fund (G)	0.009258	0.024564	0.376897	-0.016127	0.041707	-0.386678	0.016966
109	LIC Bond Fund (D)	0.062787	0.034960	1.795960	0.080942	0.059358	1.363621	0.027934
110	LIC Monthly Income Plan (MD)	0.134356	0.029551	4.546651	-0.025917	0.050173	-0.516551	0.443385
111	LIC Monthly Income Plan (G)	0.270801	0.206256	1.312939	0.062816	0.350195	0.179374	0.041422
112	LIC MF Govt. Securities Fund-Regular (G)	0.062328	0.040832	1.526472	0.055045	0.069327	0.793990	0.027613
113	LIC MF Govt. Securities Fund-Regular (D)	0.061959	0.055571	1.114949	0.096194	0.094352	1.019521	0.010743
114	SBI Magnum Income Fund-1998 (D)	0.056568	0.045897	1.232492	0.015178	0.077928	0.194766	0.035317
115	SBI Magnum Income Fund-1998 (G)	0.026916	0.027559	0.976676	-0.020279	0.046791	-0.433400	0.056194
116	SBI Magnum Insta Cash Fund (WD)	0.012319	0.030653	0.401879	0.008249	0.052044	0.158496	0.002477
117	SBI Magnum Insta Cash Fund (G)	0.003324	0.015181	0.218957	0.009668	0.025775	0.375095	0.001540
118	Sundaram B N P Paribas Bond Saver (G)	0.026403	0.024230	1.089668	-0.013656	0.041139	-0.331957	0.057632
119	Tata Gilt RIP (G)	0.055128	0.045096	1.222469	0.022095	0.076567	0.288573	0.030184
120	Tata Gilt RIP (D)	0.070029	0.047770	1.465968	0.030355	0.081107	0.374261	0.041364
121	Tata Income Fund (G)	0.015691	0.029907	0.524679	0.003509	0.050778	0.069108	0.006915
122	Tata Income Fund (HD)	0.007038	0.037794	0.186212	-0.044991	0.064169	-0.701133	0.023364
123	UTI Bond Fund (D)	0.058985	0.078998	0.746657	-0.034428	0.134129	-0.256679	0.029461
124	UTI Bond Fund (G)	0.040337	0.035397	1.139588	0.033219	0.060099	0.552739	0.016572
125	UTI Money Market Fund (WD)	-0.118980	0.140885	-0.844518	-0.172806	0.239205	-0.722416	0.006111
Tax-Planning								

126	Baroda Pioneer Elss 96 (G)	0.921237	0.117863	7.816160	-0.249517	0.200116	-1.246860	0.716842
127	Canara Robeco Equity Tax Saver (G)	1.004704	0.134668	7.460602	-0.099546	0.228649	-0.435366	0.662181
128	HDFC Tax Saver (D)	0.815942	0.146699	5.562020	-0.141300	0.249076	-0.567297	0.539173
129	HDFC Tax Saver (G)	0.873381	0.120525	7.246445	-0.195570	0.204637	-0.955694	0.675674
130	ICICI Prudential Tax Plan (G)	0.919165	0.108801	8.448124	-0.251554	0.184730	-1.361740	0.747807
131	LIC MF Tax Plan (G)	0.931603	0.106678	8.732838	-0.082341	0.181126	-0.454606	0.726611
132	Principal Personal Tax Saver Fund (G)	0.706508	0.150854	4.683389	-0.603513	0.256131	**-2.356269***	0.596687
133	Principal Tax Savings Fund (G)	0.793899	0.098095	8.093187	-0.408088	0.166552	**-2.450211***	0.770875
134	SBI Magnum Tax Gain'93 (G)	0.886830	0.159650	5.554854	-0.343468	0.271064	-1.267110	0.586826
135	Sahara Tax Gain Fund (G)	1.122463	0.201198	5.578897	0.110341	0.341608	0.323004	0.473308
136	Tata Tax Saving Fund (G)	0.766669	0.105761	7.249039	-0.481901	0.179569	**-2.683649***	0.748029
137	Taurus Tax shield (G)	1.032363	0.165605	6.233899	-0.112384	0.281175	-0.399695	0.580122
Note: * Significant at 5% level								

Table 3 : Summary Results : Market Timing and Fund Objectives .

Objectives	Sample Schemes	Treynor and Mazuy Model		Henriksson and Merton Model	
		Market Timers	**Wrong Timers**	**Market Timers**	**Wrong Timers**
Balanced	21	-	3	-	6
Growth	57	-	6	-	7
Income	47	1	-	1	-
Tax-Planning	12	-	1	-	3
Total	**137**	**1**	**10**	**1**	**16**

Table 4 : Summary Results : Market Timing and Fund Sponsorship

Sponsorship	Sample Schemes	Treynor and Mazuy Model		Henriksson and Merton Model	
		Market Timers	**Wrong Timers**	**Market Timers**	**Wrong Timers**
BS:JV-PF	2	-	-	-	-
BS:JV-PI	14	-	-	-	-
BS:O	8	-	-	-	-
INST.	12	-	1	-	3
PS:F	17	-	2	-	2
PS:I	33	-	2	-	5
PS:JV-PF	7	-	1	-	2
PS:JV-PI	44	1	4	1	4
Total	**137**	**1**	**10**	**1**	**16**
BS:JV-PF : Bank Sponsored: Joint Venture- Private Foreign, BS:JV-PF : Bank Sponsored: Joint Venture- Private Indian, BS:O : Bank Sponsored: Others, INST. : Institutions, PS:F : Private Sector : Foreign, PS:I : Private Sector : Indian, PS:JV-PF : Private Sector : Joint Venture- Private Foreign, PS:JV-PI : Private Sector : Joint Venture- Private Indian,					

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