

## Stock Selectivity and Market Timing Skills of Indian Mutual Fund Managers – A Study on Multi Cap Funds

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### Abstract

Stock selectivity and market timing are two very important qualities of a successful fund manager, which ensure excess risk adjusted return on a long-term basis. However, not every fund manager possesses the same. The present study attempts to look for the above qualities in Indian multi-cap mutual fund managers by employing four popular models in this respect, namely, Jensen's Alpha, Fama's Decomposition of Return, Treynor-Mazuy (Unconditional) Model and Henriksson-Merton (Unconditional) Model. Based on the analysis of monthly returns of selected multi-cap funds with BSE 500 as the market portfolio and Public Provident Fund rate as the risk-free rate of return, the study found that the managers of selected multi-cap funds have failed to exhibit any superior stock selection or market timing skills.

**Key Words:** Stock selectivity, market timing, multi-cap funds, excess risk adjusted return.

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### 1. Introduction

The concept of mutual fund is associated with both risk and return. It is risky as being subject to market movements, and for the same reason it has the potential to provide high returns to the investors. However, ensuring high returns requires the fund managers to invest in a proper way keeping in view the objective of the concerned scheme.

Higher returns require healthy operational practices and efficient investment management on the part of the fund managers. Though, this systematic investment management

involves a variety of activities, the investment management process can be dichotomized into the activities of stock selection (or selectivity) and market timing (Kon, 1983).

Stock selection is the act of making necessary predictions regarding the flow of market prices based on professional knowledge and skills. Whereas, market timing is the activity which involves studying a market and stating its nature in regard to bullishness or bearishness in future, so that the mutual fund portfolios can be placed accordingly. Both these factors are very much essential in order to ensure high return from mutual fund schemes.

Hence, an analysis of existence and magnitude of these two skills among Indian mutual fund managers may be considered imperative in order to identify the fund(s) that can overcome the ups and downs of the market and still outperform the same. This article is a humble attempt to investigate such abilities among the Indian mutual fund managers.

## **2. Stock Selectivity and Market Timing Skills – Conceptual Overview**

Stock selection ability (or Stock Selectivity) can be defined as the application of knowledge and professional skills to make necessary predictions in regard to the movement of prices of stocks and classification of the stock whose prices are overrated and underrated. It can also be stated as the management work which aims at choosing individual stock which is in profitable situation than choosing an entire set of stocks. Thus, stock selection helps to narrow down the available options and find the best stock which may deliver higher systematic risk adjusted returns. Stock selection is based on company specific events.

Market timing is the act of the mutual fund managers to foresee the market and make necessary predictions regarding the future progress of market based on which the portfolios can be prepared and placed. In other words, it is the act of moving your funds in and out of the market or switching among the various asset classes to earn higher return than a portfolio which remains invested in the market. This is done based on the predictions about bullish and bearish phases of the market using either technical indicators or available economic data.

Thus, while stock selection involves micro forecasting (company specific), market timing essentially requires a macro forecasting (economy specific) (Drew et al. 2005). However,

both these skills are equally important in generating positive or excess risk adjusted returns.

### **3. Literature Review**

A considerable number of research studies have been undertaken over the years in both international and national context on these two issues with some interesting outcomes.

#### ***3.1 International Context***

**Jensen (1967)** studied 115 mutual fund schemes from 1945-1964 by applying Sharpe, Lintner and Treynor models. Analysis found very little evidences where individual funds were able to perform better than expected from mere random chance.

**Guimond et al. (2006)** studied 8385 samples of US funds belonging to the time period June 2003 to June 2004. Using the Black - Litterman model, he found that mutual funds are inclined towards the stocks outside the composition of their corresponding investment objective.

**Mansor and Bhatti (2011)** used Sharpe, Treynor and Jensen ratios to analyze 128 Islamic mutual funds of Malaysia between the periods January 1990 to April 2009. Analysis revealed that there is positive stock selectivity skill and market timing ability of the fund managers in Malaysia.

**Cuthbertson and Nitzsche (2012)** used CAPM Model (one factor), SMB factor, Fama-French three factor (3F) model, Hendriksson-Merton model and Treynor-Mazuy model to analyse 555 German equity mutual funds from 1990 to 2009. They found that market timing models pointed out a significant improved outlook of the overall level of skill in security selection (alphas) for the actively managed fund industry than does the 3F model.

**Hasan et al. (2016)** used average return, Sharpe ratio, Treynor ratio, Information ratio, Jensen's alpha and M square to analyze 25 mutual funds of Bangladesh from 16<sup>th</sup> May, 2010 to 28<sup>th</sup> April, 2016. Based on their analysis they concluded that there existed no selectivity skills of the fund managers along with the wrong selection of funds in the portfolios. It was also acknowledged that the fund managers in Bangladesh could not outperform the market.

**Chen et al. (2018)** analyzed 330 samples from Chinese mutual fund industry from 2003 to 2016. Their analysis found evidence in support of market timing skills and stock picking skills among Chinese mutual fund managers.

### ***3.2 Indian Context***

**Jayadev (1996)** studied the performance of UTI Mastergain 1991 and SBI Magnum Express from 1992-94 by considering monthly returns. He applied Jensen's Measure, Reward to Volatility Ratio and Reward to Variability to study whether the growth oriented Mutual Fund were earning higher risk adjusted returns. They concluded that both the funds did not earn superior returns because of lack of selectivity on the part of the fund managers.

**Guha et al. (2007)** analyzed 96 equity linked schemes from January 2000 to June 2005 using conditional and unconditional Treynor – Mazuy and Henriksson – Merton Model. They found that the conditional models did not demonstrate very strong evidence of positive stock selection ability.

**Bantwa and Bhuva (2012)** studied 20 diversified equity schemes June 2007 to May 2012 using Sharpe Ratio, Treynor's Measure, Jensen's Alpha, Fama Model. Analysis showed that the sample schemes performed better than the market and 80 percent of the schemes reported lower risk. In regard to stock selection abilities, it was found that 60 percent of the schemes were able to beat the market with the help of better stock selection skill of fund managers.

**Padmasani and Muruganandan (2012)** analyzed 40 open ended funds from April, 2004 to March, 2011 using Treynor-Mazuy model. Based on the analysis, they concluded that fund managers didn't possess the ability to time the market.

**Dhar (2013)** studied 80 mutual funds from May 31, 2000 to March 31, 2012 using Jensen's model and found that some of the fund managers possessed superior selectivity skills based on both unconditional and conditional Jensen model.

**Pandow et al. (2016)** analyzed 40 schemes during the study period April, 2007 to March, 2011 using Jensen's Alpha and Fama's net selectivity measures. The findings showed that there were no persistent selectivity skills.

#### **4. Research Gap**

After a detail survey of the existing literature, the following observations are noteworthy:

- Though there are a large number of studies in the same field in the international scenario, the number of similar studies on the stock picking and market timing ability of the mutual fund managers in India is really limited.
- Without caring about the fund style, the studies considered schemes of different types into a single sample. This limits the possibility of identifying the stock picking and market timing ability of fund managers of different categories of fund.
- Not a single study has been conducted on multi cap funds separately though they have the highest potential of being managed actively by the fund managers, the pre-requisite for positive risk adjusted returns due to stock selectivity and market timing abilities.

Thus, there is ample scope to study the stock selectivity and market timing abilities of managers of multi cap mutual funds in India, which may provide us important insight about the superior skills, if any, of such managers and can help us to decide the better investment opportunities within this fund category.

#### **5. Objectives of the Study**

Keeping in mind the above research gap, the study attempts to address the following two objectives:

- To study the stock selectivity skills of managers of select multi cap funds using alternative models.
- To study the market timing skills of managers of select multi cap funds using alternative models.

#### **6. Research Methodology**

##### ***6.1 Type of Research***

The study is strictly empirical in nature as it attempts to analyze the stock picking (i.e., selectivity) and market timing skills of Indian mutual fund managers based on statistical techniques using fund return, risk free return and market return.

##### ***6.2 The Sample***

For the present research work, primarily 33 diversified open ended equity mutual fund schemes of multi-cap category have been selected covering all the fund houses with a multi

cap scheme. However, after the data screening process with the sample period being the key constraint, the final sample size is reduced to 24 funds. Moreover, we have considered only the growth plans of the selected schemes to avoid adjustments for dividend.

### ***6.3 Sample Period***

The sample period considered for the present research work is a three years period starting from October 1, 2015 to September 30, 2018. The rationale behind selection of such a sample period is to sufficiently cover both upturn and downturn in the market. Moreover, non-availability of data for some schemes beyond such period also contributed to our decision behind selecting a three-year study period and still keeping the sample size representative. Accordingly, the final sample covered more than 72% of the schemes identified in the primary sample.

### ***6.4 Data and its Source***

The study is based on three return elements namely market rate of return  $R_m$ , risk free rate of return ( $R_f$ ) and rate of return on portfolio i.e., fund returns ( $R_p$ ). Accordingly, monthly return on BSE 500 has been taken as a proxy for  $R_m$  and interest rate on Public Provident Fund (PPF) has been taken as the proxy for  $R_f$ . The PPF rate is selected on the ground that here the fund is borrowed by the government. As a result, the deposit contains a sovereign guarantee and is, therefore, largely free from the default risk like other risk-free rates. In order to calculate the portfolio or fund returns we have considered the monthly closing NAV of each selected scheme. The NAV data have been collected from the website of AMFI and the data for BSE 500 have been collected from the official website of BSE India. The PPF rates have been collected from the official website of India-post.

### ***6.5 Tools Used***

The study has applied the following tools to determine the selectivity and market timing skills of mutual fund managers of selected schemes:

- (i) Jensen's Alpha
- (ii) Fama's Decomposition of Return Model
- (iii) Treynor - Mazuy (Unconditional) Model
- (iv) Henriksson - Merton (Unconditional) Model

Additionally, to determine the statistical significance of individual measures of the group (multi cap), it has used one sample t test. Further to determine the association between the

rankings given by alternative methods Spearman’s Rank Correlation and Kendall’s Coefficient of Concordance have been applied.

**6.6 Software Used**

The study has used MS Excel 2007/2013 and SPSS 19.0 for processing and analyzing the data.

**7. Analysis and Findings**

- **Composition of the Sample:** As mentioned earlier, our final sample comprises of 24 equity oriented multi-cap growth schemes. These are as follows:

**Table 1: List of Mutual Fund Schemes Included in the Final Sample**

Sr. No.	Name of the Scheme	Sr. No.	Name of the Scheme
1	Principal Multicap Growth Funds	13	Baroda Pioneer Multicap Fund
2	Canara Robeco Equity Diversified	14	Reliance Multicap Fund
3	Kotak Standard Multicap Fund	15	DHFL Pramerica Diversified equity plan
4	Mirae Asset India Equity Fund	16	Quant Focused Fund
5	Aditya Birla Sun Life Equity Fund	17	IDBI Diversified Equity Fund
6	ICICI Prudential Multicap Fund	18	Invesco India Multicap Fund
7	L&T Equity Fund	19	Parag Parikh Long Term Equity Fund
8	SBI Magnum Multicap Fund	20	UTI Equity Fund
9	BNP Paribas Multicap Fund	21	Taurus Starshare (Multi Cap) Fund
10	Franklin India Equity Fund	22	LIC MF Multicap Fund
11	HDFC Equity Fund	23	JM Multicap Fund (G)
12	IDFC Multicap Fund	24	Motilal Oswal Multicap 35 Fund

- **Descriptive Statistics:** The descriptive statistics of monthly returns during the three years’ study period are summarized in Table 2 as follows.

**Table 2: Descriptive Statistics of Monthly Returns on Multi Cap Funds**

	N	Minimum	Maximum	Mean	Std. Deviation
Principal Multicap Growth Funds	36	-.11	.12	.0105	.05091
Canara Robeco Equity Diversified	36	-.12	.11	.0082	.04543
Kotak Standard Multicap Fund	36	-.09	.10	.0100	.04100
Mirae Asset India Equity Fund	36	-.09	.11	.0111	.04226
Aditya Birla Sun Life Equity Fund	36	-.10	.12	.0097	.04489
ICICI Prudential Multicap Fund	36	-.07	.09	.0092	.04002
L&T Equity Fund	36	-.10	.11	.0076	.04218
SBI Magnum Multicap Fund	36	-.10	.12	.0092	.04330

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BNP Paribas Multicap Fund	36	-.08	.10	.0069	.04414
Franklin India Equity Fund	36	-.09	.10	.0073	.03896
HDFC Equity Fund	36	-.12	.14	.0088	.05332
IDFC Multicap Fund	36	-.10	.08	.0066	.04320
Baroda Pioneer Multicap Fund	36	-.12	.09	.0057	.04430
Reliance Multicap Fund	36	-.13	.10	.0053	.04862
DHFL Pramerica Diversified equity plan	36	-.10	.10	.0060	.04448
Quant Focused Fund	36	-.11	.09	.0093	.03817
IDBI Diversified Equity Fund	36	-.09	.08	.0055	.03778
Invesco India Multicap Fund	36	-.13	.09	.0074	.05066
Parag Parikh Long Term Equity Fund	36	-.07	.09	.0102	.03211
UTI Equity Fund	36	-.12	.10	.0083	.04210
Taurus Starshare (Multi Cap) Fund	36	-.12	.12	.0056	.04649
LIC MF Multicap Fund	36	-.11	.10	.0100	.04681
JM Multicap Fund (G)	36	-.09	.13	.0041	.04843
Motilal Oswal Multicap 35 Fund	36	-.10	.08	.0096	.04231
Valid N (listwise)	36				

The results show that minimum fund returns in all the 24 cases are negative and range between (-) 0.07 to (-) 0.13. On the other hand, the maximum monthly returns range between 0.08 and 0.14. The highest monthly return is 0.14 for HDFC Equity Fund. The average return is however maximum for Mirae Asset India Equity Fund (0.0111). The standard deviation figures show that volatility in returns is the maximum for HDFC Equity Fund while the same is the minimum for Parag Parikh Long Term Equity Fund.

- Analysis of Stock Selectivity by Jensen's Alpha:*** In 1968, Michael C. Jensen developed a model where the actual return from the invested fund and the expected return from the same at a given level of systematic risk is examined with the main assumption that the systematic risk of the funds ( $\beta_{p,t}$ ) are stationary across a time horizon. This measure generates the surplus return when deviating from the level. Thus, the surplus return indicates the premium towards stock selection. The measure is applied to homogeneous class of assets as here the performances are ascertained in absolute terms.

The formula given by Jensen is

$$R_{p,t} - R_{f,t} = \alpha + \beta_p (R_{m,t} - R_{f,t}) + \varepsilon_{p,t}$$

where,

$\alpha$  = portfolio alpha value

$R_{p,t}$  = mean return of the fund ‘p’ considered over the period ‘t’

$R_{m,t}$  = mean return on the market portfolio considered over period ‘t’

$R_{f,t}$  = proxy for the riskless rate for period ‘t’

$\beta_p$  = estimated sensitivity of the fund returns to the benchmark variations

$\varepsilon_{p,t}$  = random error term

The study has applied Jensen’s model on the selected schemes and the results are as follows:

**Table 3: Results for Jensen’s Alpha on Multi Cap Fund Returns**

Fund	Jensen's $\alpha$	t	p	Rank
Principal Multicap Growth Funds	0.00097	0.456621	0.650935	4
Canara Robeco Equity Diversified	-0.00102	-0.53601	0.595544	13
Kotak Standard Multicap Fund	0.001063	0.7504	0.458331	3
Mirae Asset India Equity Fund	0.002036	2.159396**	0.038185	1
Aditya Birla Sun Life Equity Fund	0.00055	0.241975	0.810297	8
ICICI Prudential Multicap Fund	0.00049	0.185985	0.853595	9
L&T Equity Fund	-0.00144	-1.02633	0.312199	14
SBI Magnum Multicap Fund	0.000151	0.083737	0.933771	10
BNP Paribas Multicap Fund	-0.00213	-0.85802	0.39707	17
Franklin India Equity Fund	-0.00154	-1.14727	0.259519	15
HDFC Equity Fund	-0.0009	-0.40868	0.685413	12
IDFC Multicap Fund	-0.00238	-0.83113	0.411876	18
Baroda Pioneer Multicap Fund	-0.00341	-1.59966	0.119206	21
Reliance Multicap Fund	-0.00407	-1.64157	0.110177	23
DHFL Pramerica Diversified equity plan	-0.00321	-1.9822***	0.055825	20
Quant Focused Fund	0.000801	0.228179	0.820915	5
IDBI Diversified Equity Fund	-0.00314	-1.19867	0.239194	19
Invesco India Multicap Fund	-0.00192	-0.5526	0.58426	16
Parag Parikh Long Term Equity Fund	0.001933	0.784102	0.438573	2
UTI Equity Fund	-0.00065	-0.26789	0.790453	11
Taurus Starshare (Multi Cap) Fund	-0.00374	-2.26452**	0.030236	22
LIC MF Multicap Fund	-0.00513	-1.50288	0.142381	24

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JM Multicap Fund (G)	0.000795	0.261625	0.795237	7
Motilal Oswal Multicap 35 Fund	0.000797	0.252594	0.802149	6

Note: \* Significant at 1% level; \*\* Significant at 5% level; \*\*\* Significant at 10% level.

The results show that only 10 multi cap funds have been successful in generating positive alpha. It means 42% (approximately) funds have positive risk adjusted excess return, the highest being 0.002036 for Mirae Asset India Equity Fund. Jensen's alpha is minimum for LIC MF Multicap Fund. The average alpha is -0.00105. However, a statistical significance test (t test) conducted on the result for each fund shows that the alpha value is statistically significant at 5% for 2 firms and at 10% level for another 1 firm. Thus, it appears that majority of the fund managers have failed to produce statistically significant alpha.

- ***Analysis of Stock Selectivity by Fama's Decomposition of Return Model:*** This model is an extended version of the model proposed by Jensen and was propounded in the year 1972 by Eugene Fama. The model puts stress on assessing the performance through advanced segregation of the components. Accordingly, the performance of the fund is further classified into three categories for the purpose of evaluation. These are risk free return, compensation for systematic risk and the return due to the selectivity of fund managers. Selectivity was further decomposed into net selectivity and compensation for inadequate diversification. This is because, a part of the excess return may be due to the fact that total risk of the portfolio ( $\sigma_p$ ) is not equal to the systematic risk ( $\beta_p$ ) which suggests that the portfolio is inadequately diversified. The other part, in such a case, measures the actual stock selection skill of the incumbent manager.

The statistical model as proposed is:

$$R_{p,t} = R_{f,t} + \beta(R_{m,t} - R_{f,t}) + (R_{m,t} - R_{f,t}) \left( \frac{\sigma_p}{\sigma_m} - \beta \right) + (R_{p,t} - R_{f,t}) - \left( \frac{\sigma_p}{\sigma_m} \right) (R_{m,t} - R_{f,t})$$

where,

$R_{p,t}$  = mean return of the fund 'p' at time 't'

$R_{f,t}$  = risk free rate of return at time 't'

$R_{m,t}$  = market rate of return

$\beta$  = coefficient of the systematic risk level

$$(R_{m,t} - R_{f,t}) \left( \frac{\sigma_p}{\sigma_m} - \beta \right) = \text{compensation for inadequate diversification}$$

$$(R_{p,t} - R_{f,t}) - \left( \frac{\sigma_p}{\sigma_m} \right) (R_{m,t} - R_{f,t}) = \text{net selectivity after adjusting risk factor}$$

The study has applied Fama’s Decomposition of Return Model on the selected schemes and the results are as follows:

**Table 4: Results of Fama’s Selectivity Model on Multi Cap Fund Returns**

Fund	Net Selectivity	Rank
Principal Multicap Growth Funds	0.000875	4
Canara Robeco Equity Diversified	-0.0011	13
Kotak Standard Multicap Fund	0.001011	3
Mirae Asset India Equity Fund	0.002013	1
Aditya Birla Sun Life Equity Fund	0.000426	8
ICICI Prudential Multicap Fund	0.000303	9
L&T Equity Fund	-0.00149	14
SBI Magnum Multicap Fund	6.98E-05	10
BNP Paribas Multicap Fund	-0.00228	17
Franklin India Equity Fund	-0.00159	15
HDFC Equity Fund	-0.00099	12
IDFC Multicap Fund	-0.00259	18
Baroda Pioneer Multicap Fund	-0.00352	21
Reliance Multicap Fund	-0.0042	23
DHFL Pramerica Diversified equity plan	-0.00327303	19
Quant Focused Fund	0.000436	7
IDBI Diversified Equity Fund	-0.00333	20
Invesco India Multicap Fund	-0.00218	16
Parag Parikh Long Term Equity Fund	0.001726	2
UTI Equity Fund	-0.0008	11
Taurus Starshare (Multi Cap) Fund	-0.00381	22
LIC MF Multicap Fund	-0.00539	24
JM Multicap Fund (G)	0.00058	5
Motilal Oswal Multicap 35 Fund	0.000538	6

The results show that net selectivity is the minimum for LIC MF Multicap Fund and maximum for Mirae Asset India Equity Fund. Most of the schemes have generated

negative net selectivity, which suggests that the fund managers are not successful in selecting the appropriate stock in the scheme portfolio.

- **Analysis of Stock Selectivity and Market Timing Skills by Treynor-Mazuy (TM) (Unconditional) Model:** This framework was propounded in the year 1966 by Jack Lawrence Treynor and Kay Knight Mazuy. It is an extended version of the Capital Asset Pricing Model (CAPM) in quadratic terms. It explains the surplus return earned by a fund manager that is not supported by the current risk position of the manager. The entire model is dependent on two factors, fund return and sensitivity of risk. The statistical model predicts the superiority of the fund manager in anticipating market variable evolutions. Based on the fund manager's ability, the intercept will fluctuate. If the prediction power of the manager is superior then the intercept value will be positive, if the power is not superior then the intercept will bear a negative result. A passive strategy will bear a zero value of the intercept. Moreover, the model also incorporates the estimation of market timing component by introducing a quadratic term  $(R_m - R_f)^2$  with coefficient  $\gamma$  (gamma). The gamma coefficient signifies the curvature of the regression graph. Accordingly, if the gamma coefficient is positive and significant, this implies that the manager can increase the market exposure when the market is going upwards, an evidence of successful market timing ability of the manager.

The statistical model as proposed is:

$$(R_p - R_f)_t = \alpha + \beta(R_m - R_f)_t + \gamma(R_m - R_f)_t^2 + \varepsilon_{pt}$$

where,

$R_p$  = return on the funds

$R_f$  = risk-free return

$R_m$  = return on market portfolio

$\varepsilon_{pt}$  = residual term

$\alpha, \beta, \gamma$  are the model parameters

The study has applied Treynor-Mazuy (TM) (Unconditional) Model on the selected schemes and the results are as follows:

**Table 5: Results of TM Unconditional Model on Multi Cap Fund Returns**

Fund	$\alpha$	$\beta$	$\gamma$
Principal Multicap Growth Funds	0.002243685	1.1736213	-0.712861415
Canara Robeco Equity Diversified	0.000715329	1.044281524	-0.971758254
Kotak Standard Multicap Fund	0.001496121	0.957651759	-0.242207876
Mirae Asset India Equity Fund	0.00276756**	0.997310068	-0.409596465
Aditya Birla Sun Life Equity Fund	0.00155084	1.020352281	-0.560351306
ICICI Prudential Multicap Fund	0.001806845	0.87819414	-0.73674779
L&T Equity Fund	-0.001484066	0.989336384	0.025382118**
SBI Magnum Multicap Fund	0.00073539	1.000929491	-0.327185002
BNP Paribas Multicap Fund	-0.003335736	1.00486896	0.676925219
Franklin India Equity Fund	-0.002613642	0.918237603	0.602099982
HDFC Equity Fund	-0.002296405	1.245720062	0.783395086
IDFC Multicap Fund	0.001851775	0.930401296	-2.368468915
Baroda Pioneer Multicap Fund	-0.001537504	1.006552555	-1.045738433
Reliance Multicap Fund	-0.000244684	1.089706493	-2.139812**
DHFL Pramerica Diversified Plan	-0.001117797	1.027337426	-1.171019129
Quant Focused Fund	0.005277662	0.7492926	-2.505172493
IDBI Diversified Equity Fund	-0.00187264	0.821283149	-0.707041543
Invesco India Multicap Fund	0.00413623	1.078931265	-3.387093**
Parag Parikh Long Term Eq.Fund	0.003977918	0.677853621	-1.144520551
UTI Equity Fund	0.001238788	0.938765058	-1.057763279
Taurus Starshare (Multi Cap) Fund	-0.002618835	1.081009681	-0.62918467
LIC MF Multicap Fund	-0.011594*	1.094756674	3.6191861**
JM Multicap Fund (G)	0.003544262	1.02212188	-1.538591113
Motilal Oswal Multicap 35 Fund	0.003561219	0.897848238	-1.546781522

Note: \* Significant at 1% level; \*\* Significant at 5% level.

The results show that alpha value is positive in 14 out of the 24 funds. It is negative for the rest of the 10 funds. Alpha value is the maximum for Quant Focused Fund followed by Invesco India Multicap Fund. The results are, however, significant for only 1 firm at 1% level and another for 5% level. Gamma ( $\gamma$ ) value is positive for only 5 of the sample multi cap funds. In other words, only five fund managers could ensure a positive market timing effect. Gamma ( $\gamma$ ) value is significant only for 4 firms at 5% level, of which only 1 has

positive gamma, thus indicating that other three firms could not generate positive returns due to market timing. So, most of the fund managers have failed to exhibit stock selectivity skills as well as market timing skills.

- **Analysis of Stock Selectivity and Market Timing Skills by Henriksson – Merton (HM) (Unconditional) Model:** This model was framed by Robert C. Merton and Roy D. Henriksson in the year 1981 with a more qualitative outlook towards market timing. In the model suggested by Hendriksson and Merton, alpha ( $\alpha$ ) signifies excess return due to stock selectivity skill of the fund managers,  $\beta (R_m - R_f)$  denotes reward for systematic risk and the third term  $\gamma [D (R_m - R_f)]$  signifies excess return due to market timing abilities. Unlike TM model, Hendriksson and Merton used a dummy ‘D’ to express the market timing ability of the fund manager where D=1 in up-market (i.e.,  $R_m > R_f$ ) and D=0 in down-market situation (i.e.,  $R_m < R_f$ ). A positive and significant  $\gamma$  indicates that the manager can successfully generate excess return when he can correctly guess the market conditions.

The statistical model is:

$$(R_p - R_f)_t = \alpha + \beta(R_m - R_f)_t + \gamma[D(R_m - R_f)_t] + \varepsilon_{pt}$$

where,

D is the dummy variable which is 1 in up market and 0 in down market.

$R_p$  = return on the funds

$R_f$  = risk-free return

$R_m$  = return on market portfolio

$\varepsilon_{pt}$  = residual term

$\alpha, \beta, \gamma$  are the model parameters

The study has applied Hendriksson-Merton (HM) (Unconditional) Model on the selected schemes and the results are as follows:

**Table 6: Results of HM Unconditional Model on Multi Cap Fund Returns**

Fund	$\alpha$	$\beta$	$\gamma$
Principal Multicap Growth Funds	0.00417	1.266634436	-0.185861271
Canara Robeco Equity Diversified	0.00137	1.118184417	-0.138842629

Kotak Standard Multicap Fund	0.00146	0.970855271	-0.023311141
Mirae Asset India Equity Fund	0.00414**	1.057903755	-0.122273862
Aditya Birla Sun Life Equity Fund	0.00302	1.092268295	-0.143504433
ICICI Prudential Multicap Fund	0.00251	0.939929872	-0.117618592
L&T Equity Fund	-0.00159	0.984853869	0.009152568
SBI Magnum Multicap Fund	0.00220	1.059308753	-0.119274755
BNP Paribas Multicap Fund	-0.00335	0.965267976	0.070995577
Franklin India Equity Fund	-0.00316	0.868679757	0.09418461
HDFC Equity Fund	-0.00244	1.196518055	0.0894640
IDFC Multicap Fund	0.00535	1.161350448	-0.4484493***
Baroda Pioneer Multicap Fund	-0.00090	1.084152109	-0.145234793
Reliance Multicap Fund	0.00366	1.318284759	-0.4482979**
DHFL Pramerica Diversified plan	0.00010	1.127796148	-0.192000115
Quant Focused Fund	0.00982	1.016122486	-0.5231602***
IDBI Diversified Equity Fund	0.00031	0.92087189	-0.20022566
Invesco India Multicap Fund	0.00826	1.385522848	-0.5900373**
Parag Parikh Long Term Fund	0.00723***	0.831329049	-0.307369929
UTI Equity Fund	0.00187	1.016974873	-0.146294137
Taurus Starshare (Multi Cap) Fund	-0.00193	1.13587376	-0.105083607
LIC MF Multicap Fund	-0.01685*	0.744322074	0.679909949**
JM Multicap Fund (G)	0.00430	1.131629681	-0.203584567
Motilal Oswal Multicap 35 Fund	0.00492	1.024010517	-0.239466602

Note: \* Significant at 1% level; \*\* Significant at 5% level; \*\*\* Significant at 10% level.

The results show that alpha value is positive in 17 out of the 24 funds. It is negative for the rest. Alpha value is the maximum for Quant Focused Fund followed by Invesco India Multicap Fund. The results are however significant for only 1 firm each at 1%, 5% and 10% level. Here also gamma ( $\gamma$ ) value is positive for only 5 of the sample multi cap funds. In other words, only five of the fund managers could ensure a positive market timing effect. However, gamma ( $\gamma$ ) value is significant for only 2 firms at 5% level and another 2 firms at 10% level, of which only 1 has positive gamma, thus indicating that other three firms could not generate positive returns due to market timing. So, similar to TM model,

here also most of the fund managers have failed to exhibit stock selectivity skills as well as market timing skills.

- **Overall Result for the Group:** In order to assess whether the results are consistent across different models applied, the study calculates Kendall's Coefficient of Concordance (for stock selectivity results) and Spearman's Rank Correlation Coefficient (for market timing) and tests the same for statistical significance. Accordingly, ranks have been allotted against alpha value under each of the four models for stock selectivity and against gamma value for each of TM and HM models. Better ranks have been allotted for higher magnitude of the values.

The test results are as follows:

**Table 7: Result on Kendal's coefficient of concordance for Multi Cap Fund Returns**

N	24
Kendall's W <sup>a</sup>	.033
Chi-Square	2.345
df	3
Asymp. Sig.	.504
a. Kendall's Coefficient of Concordance	

**Table 8: Result on Spearman's Rank Correlation for Multi Cap Fund Returns**

Particulars		TM	HM	
Spearman's rho	TM	Correlation Coefficient	1.000	.942**
		Sig. (2-tailed)	.	.000
		N	24	24
	HM	Correlation Coefficient	.942**	1.000
		Sig. (2-tailed)	.000	.
		N	24	24
**. Correlation is significant at the 0.01 level (2-tailed).				

Kendall's W value is not significant ( $p = 0.504$ ). Thus, the ranks of the funds based on stock selectivity are not associated but independent. In other words, the results are not similar across the methods.

However, Spearman's rho value is significant at 1% level. Thus, the ranks of the funds based on market timing are significantly associated. In other words, the results under both the TM and HM models are similar.

### **8. Conclusion**

Stock selectivity and market timing are two very important qualities of a successful fund manager, which ensure excess risk adjusted return on a long-term basis. However, not every fund manager possesses the same.

The present study attempts to look for the above qualities in Indian multi cap mutual fund managers employing four popular models in this respect.

The results show that, so far as the selectivity skills are concerned, the managers have performed very poorly. Majority of the funds has failed to generate positive alpha (under Jensen's model, TM and HM model) or positive net selectivity (under Fama's Model). Additionally, the number of funds having statistically significant alpha value is only a few. With respect to market timing, the result is no different. Only a negligible portion of the sample firms have statistically significant gamma value.

Thus, it will not be wrong to conclude that during the selected study period most of the fund managers are not successful in either selecting appropriate stocks for their portfolio or timing the market appropriately and hence have failed to deliver returns higher than the market on a consistent basis. In other words, the managers of multi-cap funds in Indian mutual funds Industry do not exhibit the stock selectivity skill or market timing skill during the study period.

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