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The Performance of Mutual Funds Manager for Stock Selection Investment

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ABSTRACT
For a competent fund manager to ensure an extra risk-adjusted return over the long term, stock selection and market timing are essential skills. However, not all fund managers possess the same abilities. The current study attempts to identify the aforementioned traits in Indian multi-cap mutual fund managers by using four well-known models in this field: Jensen's Alpha, Fama's Decomposition of Return, the Treynor-Mazuy (unconditional) Model, and Henriksson-Merton (unconditional). Based on an analysis of the monthly returns of the chosen multi-cap funds using the BSE 500 as the market portfolio and the Public Provident Fund rate as the risk-free rate of return, the study came to the conclusion that the managers of the selected multi-cap funds did not exhibit any superior stock selection or market timing skills.

Keywords: *mutual fund, investment, Stock selection, scheme, monthly return, securities*

I. INTRODUCTION

Mutual fund concepts are linked to both risk and return. It is dangerous because it is susceptible to market fluctuations, but it also has the potential to offer investors huge returns. But to guarantee good returns, fund managers must make wise investments while keeping the scheme's goal in mind.

Healthy operating procedures and effective investment management on the part of the fund managers are necessary for higher returns. While there are many tasks involved in systematic investment management, they can be divided into two categories: stock selection (or selectivity) and market timing (Kon, 1983).

Source: https://www.fincash.com/l/mutual-funds-india

Stock selection is the process of using expert knowledge and skills to make appropriate forecasts about the direction of market prices. Market timing, on the other hand, involves researching a market and determining whether it will be bullish or negative in the future so that mutual fund portfolios can be adjusted accordingly. These two elements are crucial for ensuring excellent returns from mutual fund programmes.

Therefore, it may be necessary to analyse the presence and degree of these two abilities among Indian mutual fund managers in order to pinpoint the fund or funds that can outperform despite the market's ups and downs. This essay is a modest attempt to look into these skills among Indian mutual fund managers.

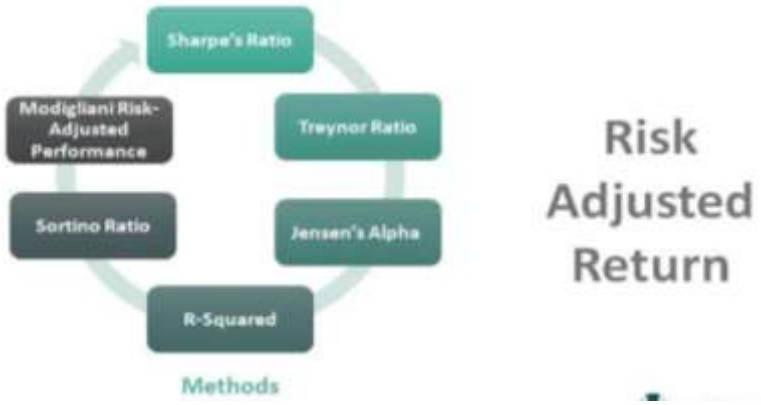
1.1 The Objectives of the Study

Considering the aforementioned research gap, the study makes an effort to solve the following two goals:

- Investigate; using alternative models, the stock selection abilities of selected multi-cap fund managers.
- Investigate; using alternative models, the market timing abilities of selected multi-cap fund managers.

II. STOCK SELECTIVITY AND MARKET TIMING SKILLS

The application of information and professional abilities to generate essential forecasts about the movement of stock prices and the classification of stocks whose prices are overrated and undervalued can be referred to as stock selection ability (or stock selectivity).



Source: https://www.wallstreetmojo.com/risk-adjusted-returns/

It can also be described as management work that focuses on selecting individual stocks that are in profitable situations rather than a whole group of stocks. Thus, stock selection aids in reducing the range of choices and locating the best stock that could produce greater systematic risk-adjusted returns. Events related to the company are used to choose stocks.

In order to develop and arrange portfolios, mutual fund managers must anticipate the market and make the required projections about its future trajectory. This process is known as market timing. In order to achieve a higher return than a portfolio that stays invested in the market, you must move your money between other asset classes or in and out of the market. This is based on forecasts of the market's bullish and bearish phases utilising either technical indicators or the data that is currently available on the economy.

As a result, market timing generally requires macro-forecasting (economy-specific), whereas stock picking entails micro-forecasting (business-specific) (Drew et al. 2005). But both of these abilities are crucial for producing positive or extra-risk-adjusted returns.

III. LITERATURE REVIEW

On these two concerns, a sizable number of research studies have been conducted throughout the years in both an international and national setting, with some intriguing results.

3.1 The Global Setting

Jensen (1967) used the Sharpe, Lintner, and Treynor models to examine 115 mutual fund schemes from 1945 to 1964. Analysis revealed extremely few instances where individual funds were able to outperform expectations due to pure luck.
Guimond and colleagues (2006) examined 8385 samples of US funds from June 2003 to June 2004. He discovered that mutual funds are oriented towards stocks outside the composition of their corresponding investing aim using the Black-Litterman model.

Sharpe, Treynor, and Jensen ratios were employed by Mansor and Bhatti (2011) to examine 128 Malaysian Islamic mutual funds from January 1990 to April 2009. Analysis showed that the Malaysian fund managers have good stock selection and market timing skills.

Cuthbertson and Nitzsche (2012) examined 555 German stock mutual funds from 1990 to 2009 using the CAPM model (one factor), SMB factor, Fama-French three factor (3F) model, Hendriksson-Merton model, and Treynor-Mazuy model. They discovered that, compared to the 3F model, market timing models provided a noticeably better perspective for the overall level of competence in security selection (alphas) for the actively managed fund sector.

Hasan et al. (2016) examined 25 Bangladeshi mutual funds from May 16, 2010 to April 28, 2016, using average return, Jensen's alpha, Sharpe, Treynor, information, and M square ratios. Based on their investigation, they came to the conclusion that the fund managers lacked selectivity abilities and made poor fund selections for their portfolios. Additionally, it was accepted that Bangladeshi fund managers were unable to outperform the market.

From 2003 to 2016, 330 samples from the Chinese mutual fund industry were examined by Chen et al. (2018). Their investigation supported the existence of stock selection and market timing expertise among Chinese mutual fund managers.

3.2 The Indian Setting

By taking into account monthly returns, Jayadev (1996) investigated the performance of UTI Mastergain in 1991 and SBI Magnum Express from 1992 to 1994. To determine whether the growth-oriented mutual fund was producing superior risk-adjusted returns, he employed Jensen's measure, the reward-to-volatility ratio, and the reward-to-variability ratio. They came to the conclusion that the lack of selectivity on the part of the fund managers was the reason why neither of the funds generated higher returns.

96 equity-linked schemes from January 2000 to June 2005 were examined by Guha et al. (2007), utilising the conditional and unconditional Treynor-Mazuy and Henriksson-Merton models. They discovered that the conditional models did not provide very compelling evidence of effective stock selection.

Using the Sharpe Ratio, Treynor's Measure, Jensen's Alpha, and Fama Model, Bantwa and Bhuva (2012) examined 20 diversified equity schemes from June 2007 to May 2012. Analysis revealed that the test schemes outperformed the market and that 80% of the schemes had lower risk. When it came to stock selection skills, it was discovered that 60 percent of the schemes were able to outperform the market thanks to fund managers' improved stock selection abilities.

Using the Treynor-Mazuy model, Padmasani and Muruganandan (2012) examined 40 open-ended funds between April 2004 and March 2011. They came to the conclusion that fund managers lacked the capacity to time the market based on their analysis.

Jensen's model was used by Dhar (2013) to analyse 80 mutual funds between May 31, 2000, and March 31, 2012, and the results showed that some of the fund managers had strong selectivity abilities based on both the unconditional and conditional Jensen models.

Using Jensen's Alpha and Fama's net selectivity measures, Pandow et al. (2016) examined 40 schemes from April 2007 to March 2011. The results demonstrated the absence of any enduring selective abilities.

IV. METHODOLOGY

4.1 Research Type

The study, which uses statistical methods based on fund return, risk-free return, and market return, aims to analyse the stock picking (i.e., selectivity) and market timing skills of Indian mutual fund managers.

4.2 The Sample

To cover all fund houses with a multi-cap scheme, 33 diversified open-ended equity mutual fund schemes have been chosen for the current study project. The ultimate sample size is, however, decreased to 24 funds after the data screening process, with the sample time acting as the main restriction. Moreover, in order to prevent dividend changes, we simply took into account the growth objectives of the chosen schemes.

4.3 Sample Period

Three years, from October 1, 2015, to September 30, 2018, comprise the sample period taken into account for this study project. The purpose of choosing such a sample period is to adequately capture both market upswings and downturns. Furthermore, the non-availability of data for some schemes beyond such a period also influenced our choice of a three-year study period while maintaining a representative sample size. As a result, more than 72% of the schemes found in the original sample were included in the final sample.

4.4 Information and Source

The three return components that make up the study's foundation are the market rate of return (R_m), the risk-free rate of return (R_f), and the rate of return on portfolio, or fund returns (R_p). Consequently, monthly
The return on the BSE 500 was used as a stand-in for R_m, while the interest rate on the Public Provident Fund (PPF) was used as a stand-in for Rf. Because the government is borrowing the fund in this case, the PPF rate was used. As a result, unlike other risk-free rates, the deposit has a sovereign guarantee and is hence substantially free from default risk. We took into account the monthly closing NAV of each chosen scheme when calculating the portfolio or fund returns. The NAV statistics were gathered from the AMFI website, and the BSE 500 data were gathered from the BSE India official website. The PPF rates were obtained from India Post's official website.

4.5 Tools Used

The study used the following instruments to evaluate the mutual fund managers of particular schemes for their market timing and selectivity:

(i) Jensen's Alpha
(ii) Fama's Return Decomposition Model: Model of Treynor-Mazuy (Unconditional)
(iii) Model of Henriksson and Merton (unconditional)
(iv) It has also employed a one-sample t test to examine the statistical significance of the group's individual metrics (multi-cap). The correlation between the ranks provided by different methodologies, such as Spearman's rank correlation and Kendall's applying the coefficient of concordance.

4.6 Programmes Used

SPSS 19.0 and MS Excel 2007/2013 were used in the study to handle and analyse the data.

V. ANALYSIS AND RESULTS

- **Sample Makeup**

As previously noted, our final sample is made up of 24 equity-oriented multi-cap growth schemes. These are listed below:

Table 1: Shows a list of the mutual fund plans that made up the final sample.

Sr. No.	Scheme's Name	Sr. No.	Scheme's Name
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**

Table 2 provides a summary of the descriptive statistics for monthly returns over the course of the three-year study period.

Table 2: Monthly Returns on Multi-Cap Funds: Descriptive Statistics

	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
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	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				

According to the findings, all 24 of the minimum fund returns were negative and ranged from (-) 0.07 to (-) 0.13. The highest monthly returns, however, range from 0.08 to 0.14. The HDFC Equity Fund had the highest monthly return of 0.14. Mirae Asset India Equity Fund, however, has the highest average return (0.0111). According to the standard deviation numbers, HDFC Equity Fund has the highest return volatility, while Parag Parikh Long Term Equity Fund has the lowest.

Jensen's Alpha Stock Selectivity Analysis: In 1968, Michael C. Jensen created a model in which the systematic risk of the invested funds ($\beta_{p,\,t}$) is assumed to be stationary over the time horizon, and the actual return from the fund and the projected return from the same are compared. When deviating from the level, this measure creates an excess return. The surplus return therefore represents the premium for stock selection. Since the performances are determined in absolute terms in this context, the metric is applied to a homogeneous class of assets.

The Jensen-provided equation is:

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

where,
α = portfolio alpha value
$R_{p,t}$ = mean return of the fund 'p' considered over the period 't' t p R ,
$R_{m,t}$ = mean return on the market portfolio considered over period 't' t m R ,
$R_{f,t}$ = proxy for the riskless rate for period 't' t f R ,
β_p = estimated sensitivity of the fund returns to the benchmark variations p
$\varepsilon_{p,t}$ = random error term t p,

The study's application of Jensen's model to the chosen schemes yielded the following results:

Table 3: Shows the outcomes of Jensen's Alpha on Multi Cap Fund Returns.

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

Only 10 multi-cap funds have produced positive alpha, according to the results. It indicates that 42% of funds (roughly) have positive risk-adjusted excess returns, with Mirae Asset India Equity Fund having the greatest excess return of 0.002036. The LIC MF Multicap Fund's minimal alpha is for Jensen. Alpha is typically -0.00105. The alpha value is statistically significant at 5% for two firms and at 10% for one more firm, according to a statistical significance test (t test) performed on the results for each fund. Therefore, it would seem that the bulk of fund managers have not generated statistically meaningful alpha.

Fama's Decomposition of Return Model Analysis of Stock Selectivity: In 1972, Eugene Fama proposed this model, which is an expanded version of Jensen's original model. The concept emphasizes performance evaluation through sophisticated component segmentation. For evaluation purposes, the performance of the fund is further divided into three categories. These include the return that is risk-free, the compensation for systematic risk, and the return that results from the fund managers' selection. Net selectivity and compensation for insufficient diversity were the additional divisions of selectivity. This is because a portion of the excess return may be attributable to the fact that the portfolio's overall risk (Ϭp) is greater than its systematic risk (βp), suggesting that the portfolio is not sufficiently diversified. In this situation, the other component evaluates the manager-in-charge's actual stock-picking abilities.

The proposed statistical model is:

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

where,
$R_{p,t}$ = mean return of the fund 'p' at time 't'
$R_{t,f}$ = risk free rate of return at time't'
$R_{t,m}$ = market rate of return
β= coefficient of the systematic risk level
$(R_{m,t} - R_{f,t}) = \left(\frac{\sigma_p}{\sigma_m} - \beta\right)$ = compensation for inadequate diversification R R)

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

The outcomes of the study's application of Fama's Decomposition of Return Model to the chosen schemes are as follows:

Table 4: Fama's Selectivity Model's Findings Regarding 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

According to the findings, net selectivity is at its lowest for the LIC MF Multicap Fund and at its highest for the Mirae Asset India Equity Fund. The majority of the schemes produced negative net selectivity, indicating that the fund managers were unsuccessful in choosing the right stock to include in the portfolio of the plan.

Treynor-Mazuy (TM) Model Analysis of Stock Selectivity and Market Timing Skills (Unconditional) In 1966, Jack Lawrence Treynor and Kay Knight Mazuy proposed this concept. It is a quadratic extension of the Capital Asset Pricing Model (CAPM). It describes the excess return received by fund management that is not justified by the manager's present level of risk. Fund return and risk sensitivity are the two variables that determine the entire model. The statistical model forecasts the fund manager's superiority in foreseeing changes in market variables. The intercept will change depending on the proficiency of the fund manager. The intercept value will be positive if the manager's predictive ability is higher; otherwise, the intercept will show a negative result. The intercept will be zero for a passive technique. A quadratic term (Rm + Rf)2 with the coefficient gamma is also included in the model to account for the estimation of the market timing component. The regression graph's arc is denoted by the gamma coefficient. The manager's ability to successfully time the market will be demonstrated if the gamma coefficient is positive and significant, which suggests that the management can enhance market exposure while the market is rising.

The proposed statistical model is:

$$(R_p\text{-}R_f)_t = \alpha + \beta (R_m - R_f)_t + \gamma (R_m - R_f)_t^2 + \varepsilon_{p,t}$$

where,
R_p = return on the funds p R
R_f = risk-free return f R
R_m = return on market portfolio m R

$\varepsilon_{p,t}$ = residual term Pt
α, β, γ are the model parameters

The Treynor-Mazuy (TM) (unconditional) Model was applied to the chosen schemes in the study, and the outcomes are as follows:

Table 5: The TM Unconditional Model's findings about multi-cap fund returns

Fund	**α**	**β**	**γ**
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

The findings indicate that 14 out of the 24 funds have positive alpha values. It is detrimental to the remaining 10 dollars. The Quant Focused Fund has the highest alpha value, followed by the Invesco India Multicap Fund. However, just one business at the 1% level and another at the 5% level show substantial results. Among the sample multi-cap funds, only 5 have positive gamma (γ) values. To put it another way, just five fund managers were able to guarantee a favorable market timing effect. Only one of the four firms at the 5% level has a positive gamma value, indicating that the other three firms were unable to achieve positive returns owing to market timing. As a result, the majority of fund managers have demonstrated poor stock selection and market timing abilities.

Henriksson-Merton (HM) (unconditional) Model Analysis of Stock Selectivity and Market Timing Skills With a more qualitative perspective on market timing, Robert C. Merton and Roy D. Henriksson created this model in 1981. According to Hendriksson and Merton's model, alpha (α) stands for excess return attributable to stock selection expertise on the part of fund managers, β (R_m-R_f) stands for reward for systematic risk, and the third term, γ [D (R_m-R_f)], stands for excess return attributable to market timing skills. Hendriksson and Merton, in contrast to the TM model, utilized a dummy "D" to represent the fund manager's ability to time the market, where D = 1 in an up-market scenario (i.e., Rm > Rf) and D = 0 in a down-market scenario (i.e., Rm< Rf). When the manager can accurately predict market conditions, he can successfully generate excess return, as shown by a positive and significant

This is the statistical model:

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

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
$\varepsilon_{p,t}$ = residual term
α, β, γ are the model parameters

The study's application of the Hendriksson-Merton (HM) (unconditional) model to the chosen schemes yielded the following results:

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

Fund	α	**β**	**γ**
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

The findings indicate that 17 out of the 24 funds' alpha values are positive. The rest are negatively impacted. The Quant Focused Fund has the highest alpha value, followed by the Invesco India Multicap Fund. However, only one firm is affected by the results at the 1%, 5%, and 10% levels. Only 5 of the sample multi-cap funds' gamma (γ) values are positive in this case. To put it another way, only five of the fund managers were able to guarantee a favorable market timing effect. Only 2 firms at the 5% level and 2 firms at the 10% level, however, have significant gamma (γ) values, and only 1 of these firms has a positive gamma, indicating that the other three firms were unable to create positive returns due to market timing. Therefore, similar to the TM model, most fund managers here have failed to demonstrate stock selection and market timing skills.

Overall Result for the Group

The study calculates Kendall's Coefficient of Concordance (for stock selectivity results) and Spearman's Rank Correlation Coefficient (for market timing results) and tests the same for statistical significance. This is done to determine whether the results are consistent across the various models used. As a result, ranks have been assigned for each of the four models of stock selectivity against alpha value as well as for each of the TM and HM models against gamma value. Higher magnitudes of the values have been given better ranks.

These are the test results:

Table 7: Results on the Multi Cap Fund Returns Kendal's Coefficient of Concordance

N	24
Kendall's W[a]	.033
Chi-Square	2.345
df	3
Asymp. Sig.	.504
N	24

Table 8: Result on Multi-Cap Fund Returns and the Spearman's Rank Correlation

		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	.

(p = 0.504) Kendall's W value is not significant. As a result, the ranks of the funds determined by stock selectivity are independent rather than linked. In other words, the outcomes of the various strategies are not comparable.

At the 1% level, Spearman's rho value is noteworthy. Therefore, there is a strong correlation between the ranks of the funds based on market timing. In other words, both the TM and HM models produce outcomes that are comparable.

VI. CONCLUSION

A successful fund manager must be adept at stock selection and market timing in order to guarantee an excess risk-adjusted return over the long run. But not every fund manager has the same skills.

The current study makes an effort to identify the aforementioned traits in Indian multi-cap mutual fund managers using four widely used models in this regard.

The findings demonstrate how poorly the managers have performed in terms of their selective skills. Most of the funds have not produced positive alpha (according to the models developed by Jensen, TM, and HM) or positive net selectivity (according to the model developed by Fama). Furthermore, there aren't many funds with statistically significant alpha values. The outcome is the same with regard to market timing. There is very little statistically meaningful gamma value among the sample firms.

Therefore, it would not be incorrect to draw the conclusion that, during the chosen study period, the majority of fund managers failed to consistently produce returns that were higher than the market, either by choosing the right stocks for their portfolios or by correctly timing the market. In other words, during the study period, the managers of multi-cap funds in the Indian mutual fund industry did not demonstrate stock selectivity or market timing skills.

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