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Fama Approach to Stock Picking Skills of Mutual Fund Managers from India – A Study on Selected Large Cap Funds

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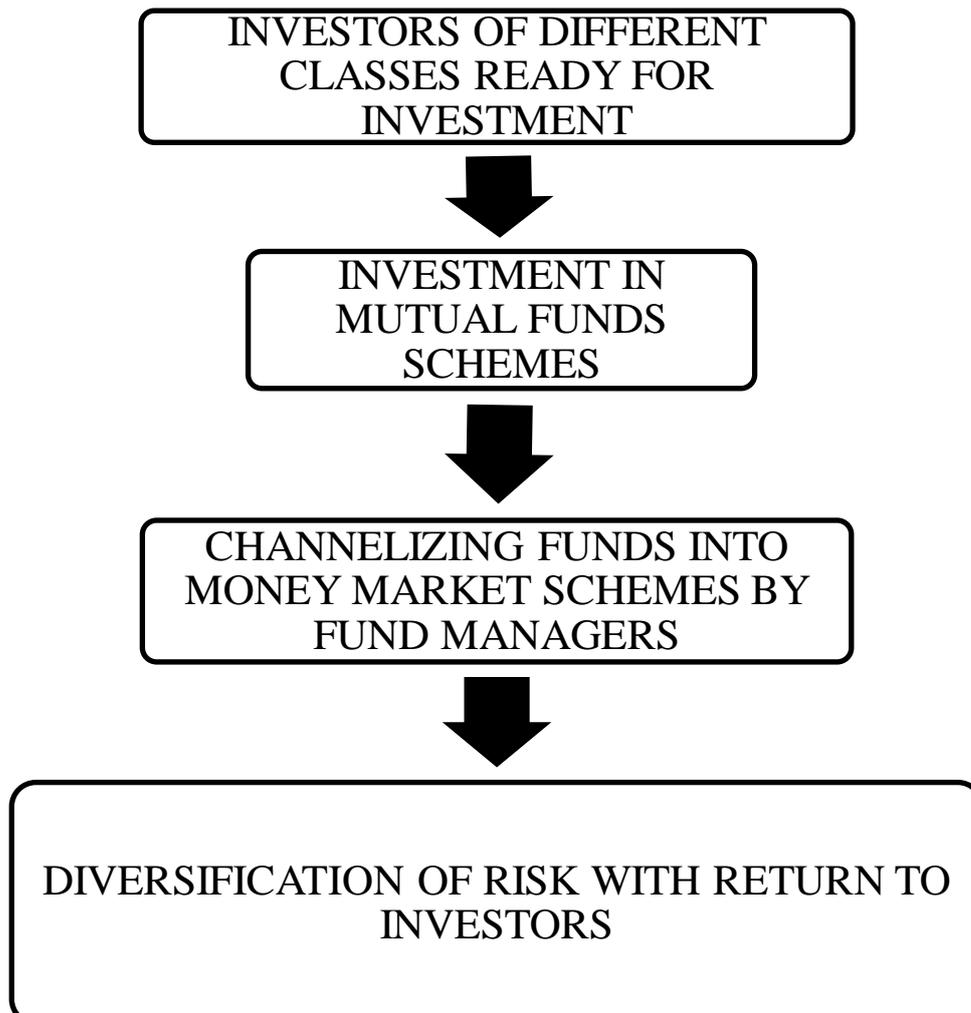
ABSTRACT

Mutual Fund is considered to be a key investment avenue in the present time. Mutual funds are always subject to market risk. But its performance depends on the performance of the fund managers along with certain other factors. One of the key parameter through which the performance of a mutual fund manager is judged is the stock picking proficiency of the fund manager. This paper looks forward to minutely analyze the performance of the fund managers of selected large cap funds from India by applying the Fama model. Analysis shows that the fund managers could not generate additional return even after bearing risk. Only 50 percent of the fund managers could generate additional return by diversifying diversifiable risk. Half of the selected fund managers could select proper mutual fund for investing as the Fama model indicates a positive net selectivity.

KEYWORDS- Fama Model, Large Cap Funds, Mutual Fund Managers, Stock Picking Skills

I. INTRODUCTION

The Indian mutual fund industry started its journey since 1963 with the inception of Unit Trust of India (UTI) by the Government of India with the mutual fund scheme of Unit Scheme (1964). It is the act of pooling funds from different short, medium and large investors by well known managers and further channelizing those funds and investing them into different money market schemes which are linked with market risks. Mutual Fund is a trust that pools the savings of a number of investors who share a common financial goal. (Sharma & Verma, 2018) It is referred to as keeping all eggs in different baskets. The Indian mutual fund industry is a four-tier system starting with the sponsors at tier 1, followed by trustee at tier 2, the asset management company (AMC) at tier 3 and the custodian at tier 4. The sponsor makes necessary planning work to start a mutual fund on approval from SEBI with a conditioning factor that it has to be in business for at least 5 years. The trustee performs the act of appointing the asset management company. The AMC should have a minimum worth of Rs 10 billion along with a body of well knowledge and trained experts from the field. The custodian maintains the security of AMC and receives financial dividends on behalf of their clients. The performance of a mutual fund is measured by net asset value (NAV). NAV is defined as the present market value of all the securities held by a scheme. (Bhattacharyya, 2017) Mutual fund can be classified into different types based on objectives of investment and structure which shall be studied further. This paper delves with analyzing the stock selection ability of the mutual fund managers in India at the recent times. The term stock selection means the ability of a fund manager to select a stock on the basis of their professional and practical knowledge on the basis of flow of market prices. Hence, the fund managers need to apply their skills to predict the prospective investors in mutual fund classes that can provide them with higher amount of returns.



(Fig 1: Flowchart showing working of mutual fund)
(Source: Compiled from information available about mutual fund)

II. LITERATURE REVIEW

Following research works have been surveyed from national and international context:

2.1 National Context

- **Sharma & Verma (2018)** in their paper titled “Performance Evaluation of Selectivity Skills of Fund Managers in India: An Analysis of Index Funds” collected data from April, 2008 to March, 2017 to evaluate the risk adjusted performance of index mutual fund schemes. They applied Sharpe Ratio, Treynor Ratio, Jensen Measure and Fama Measures to find out whether sample index mutual fund schemes provide stock selection abilities to provide extra compensation. Sharpe Ratio shows 27.27 per cent of sample schemes and Treynor Ratio shows 72.72 per cent of sample schemes are able to beat the benchmark index. Jensen Measure shows 81.81 per cent of the samples are positive and significant. Fama Measure shows 27.27 per cent of sample schemes are able to provide positive net selectivity.
- **Pandow, B. A. (2016)** in his paper titled “Selection Abilities of Select Indian Mutual Fund Managers” collected data of 40 schemes during the study period April, 2007 to March, 2011 from database of AMFI for Net Asset Value (NAV), National Stock Exchange (NSE) for S&P CNX Nifty and RBI for risk free rate and applied convenient sampling method in the form of adequate and representative sample. 33 belonged to private sector whereas public sector comprised of 7 schemes. These schemes belonged to 19 fund houses. 37 schemes are open-ended and 3 are close-ended in nature. On the basis of aim, it is further bifurcated into 28 Growth related schemes, 3 income related schemes, 3 balanced funds and 6 tax-saving schemes. He used the yields on 91-day treasury bills issued by Reserve Bank of India (RBI) as the proxy for risk-free return and S&P CNX Nifty is used as proxy for the market portfolio/return as well as for bench-mark variability. The daily return so obtained has been annualized using geometric averaging to obtain average annual fund return. The selectivity skills of sample fund managers were tested using Jensen’s Alpha and

Fama's net selectivity measures model. The findings shows that in the long run i.e. for the entire time series (2006 - 2011) no persistence in selectivity performance has been observed for the sample funds on the basis of Jensen alpha whereas in the short run, majority funds reported persistence in selectivity performance.

- **Butt & Pandow (2013)** in their paper titled “An analysis into the Stock Selectivity skill of Indian Fund Managers” collected data from April 1, 2007 and March 31, 2012 to study the market timing and stock selectivity abilities of fund managers. They applied stratified random proportionate sampling technique covering public, private and foreign sector mutual funds on the basis of nature, size, investment objectives and sponsorship of the funds. Analysis showed that majority of the managers suffered from insignificant stock selection skills to their market movements. They did not possess sufficient knowledge about the different macro economic variables and hence they concluded that the Indian mutual fund managers must improve their skills relating to internal activities as well as external market related information.

International Context

- **Chen, Y (2018)** in his paper titled “Individual Stock Picking Skills in active Mutual Funds” collected data from 1991 to 2015 to study the stock picking skills of the fund managers. He collected monthly data of after-fees fund returns and further computed before-fees returns for conducting the study. The entire dataset was collected from Thomson Reuters Mutual Fund Holdings database. He collected data of US equity funds which are open ended in nature and are actively managed by fund managers. He performed FSD test which portrayed a group of fund managers who successfully outperformed the benchmark of Carhart. He further classified them on the basis of Carhart four factor alphas which showed that the funds on the top quintiles outperformed the benchmark. Hence, he concluded that the fund managers were potentially capable at stock picking.
- **Rostadstuen, M (2016)** in his paper titled “An analysis of mutual fund performance in Norway” collected data from January, 2006 to 2016 to examine the performance of 19 active Norwegian mutual funds by investigating the stock picking abilities of the fund managers and comparing their returns against four passive index funds. Jensen's alpha, Fama-French three factor model, t test, Sharpe, Sortino Information and Treynor ratio is computed to see whether the managers acquire stock picking skills. Results demonstrated that there are a few fund managers who possess the capability of outperforming the market. He further concluded that after payment of necessary fees to the managers, there remains a negligible scope for the investors to churn out benefit from manager's stock picking.
- **Rekha, U (2014)** in her paper titled “Portfolio Diversification and Selectivity Performance of Fund managers in India – A study of select Equity Funds” collected data of equity large cap, small cap and mid cap funds to assess the stock selectivity of fund managers. Jensen's Alpha and Fama decomposition method was applied which shows that 67.67 percent sample fund managers could have superior stock selectivity.

III. RESEARCH GAP

After minutely studying the existing literatures, following research gaps have been identified:

- Very few works have been conducted in Indian perspective
- When mutual funds are turning out to be a preferable investment avenue, it needs to be researched minutely about the stock picking capabilities of the managers in the recent times.

IV. OBJECTIVE OF THE STUDY

- Analyzing the stock selection capabilities of fund managers in India in regard to large cap funds considering on the basis of risk premium, diversification and net selectivity.

V. RESEARCH METHODOLOGY

Type of Research : The study is empirical in nature with secondary data using fund return, risk free return and market return.

Sample and Period of the Study

Our study period is from April, 2018 to Dec, 2019 with ten large cap funds with monthly data.

Name of the Fund	Fund House i.e. AMC	Date of Inception of the Scheme
Aditya Birla Sun Life Frontline Equity Fund	Birla Sun Life Mutual Fund	30/08/2002
Axis blue chip Fund	Axis Mutual Fund	05/01/2010
HSBC large cap equity Fund	HSBC Mutual Fund	03/12/2002

ICICI Prudential Blue chip Fund	ICICI Prudential Mutual Fund	07/05/2008
Kotak Bluechip Fund	Kotak Mahindra Mutual Fund	06/02/2003
SBI blue chip fund	SBI Mutual Fund	14/02/2006
Franklin India Blue chip Fund	Franklin Templeton Mutual Fund	01/12/1993
JM Large Cap Fund	JM Financial Mutual Fund	12/12/1994
Tata Large Cap Fund	Tata Mutual Fund	07/05/1998
IDBI India Top 100 Equity Fund	IDBI Mutual Fund	15/05/2012

Table 1: List of Large Cap Funds in the Sample

5.3 Sources of Data

In the present research work, BSE 100 has been taken as a proxy for R_m in large cap fund collected from BSE India website, Public Provident Fund rate (PPF) is taken as the proxy for R_f collected from the websites of India-post and the monthly returns based on monthly closing NAV are taken as the proxy for R_p collected from the website of AMFI.

5.4 Tools Used

- Fama Model (1972)

5.5 Fama Model

The statistical model as proposed is: (Fama, 1972)

$$R_{pt} = R_{ft} + \beta(R_{mt} - R_{ft}) + (R_{mt} - R_{ft})\left(\frac{\sigma_p}{\sigma_m} - \beta\right) + (R_{pt} - R_{ft}) - \left(\frac{\sigma_p}{\sigma_m}\right)(R_{mt} - R_{ft})$$

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

β = coefficient of the systematic risk level

$\beta(R_m - R_f)$ = risk premium

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

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

VI. NEED FOR THE STUDY

With the ever growing market of mutual fund, it is relevant to make an in depth study to analyze the total return reaped by the fund managers in compare to the investments made by the investors. The study will also provide necessary insights into the risk premium generated by the fund managers, return on account of diversification and stock selection potentiality of the mutual fund managers in Indian stock market in respect to large cap funds during the study period.

VII. DATA ANALYSIS AND FINDINGS

Descriptive Statistics

Descriptive Statistics					
Funds	N	Minimum	Maximum	Mean	Std. Deviation
Axis Bluechip Fund	20	-.08	.07	.0098	.03717

HSBC Largecap Equity Fund	20	-0.09	.08	.0044	.03637
ICICI Prudential Bluechip Fund	20	-0.07	.06	.0046	.03335
Aditya Birla Sun life Frontline Equity Fund	20	-0.09	.07	.0027	.03620
Kotak bluechip fund	20	-0.08	.07	.0057	.03943
SBI bluechip fund	20	-0.09	.08	.0027	.03958
Franklin India bluechip fund	20	-0.08	.07	.0015	.03669
JM Large Cap Fund	20	-0.02	.03	.0030	.01439
Tata Large Cap Fund	20	-0.10	.08	.0045	.04059
IDBI India Top 100 Equity Fund	20	-0.11	.07	.0037	.04089
Valid N (listwise)	20				

Table 2: Descriptive statistics on return on large cap funds

The descriptive statistics shows that minimum, maximum and average returns on large cap funds during the study period. The results show that minimum fund returns in all the 10 cases is negative and ranges between (-) 0.02 to (-) 0.11. On the other hand the maximum monthly return ranges between 0.03 and 0.08. The highest maximum return is 0.08 for HSBC Large cap Equity Fund, SBI blue chip fund and Tata Large Cap Fund. The average return is however maximum for Axis Blue chip Fund (0.0098).

Fama Model

FAMA MODEL				
LARGE CAP FUNDS				
FUNDS	RISK PREMIUM	DIVERSIFICATION	NET SELECTIVITY	RANK (BASED ON NET SELECTIVITY)
Axis Bluechip Fund	-0.074065	-0.000687201	0.005901	5
HSBC Largecap Equity Fund	-0.074065	0.00092239	-0.00111	6
ICICI Prudential Bluechip Fund	-0.074065	0.006991681	-0.007	9

Aditya Birla Sun life Frontline Equity Fund	-0.074065	0.001263425	-0.00324	7
Kotak bluechip fund	-0.074065	-0.005247732	0.006329	3
SBI bluechip fund	-0.074065	-0.005535917	0.006049	4
Franklin India bluechip fund	-0.074065	0.000265811	-0.00342	8
JM Large Cap Fund	-0.074065	0.04512855	-0.0468	10
Tata Large Cap Fund	-0.074065	-0.007570394	0.007471	1
IDBI India Top 100 Equity Fund	-0.074065	-0.008170635	0.007255	2

Table 3: Fama Model on large cap funds

The Fama Model measures the performances of portfolios along with the performance of investment based on risk premium, diversification and net selectivity. The extra return on account of risk taken by the fund manager is portrayed by risk premium, the additional return on account of diversifiable risk is explained by diversification and the concept of proper stock selection is judged by net selectivity measure. The results shows that risk premium is negative for all the funds indicating that the fund managers could not reap additional return on account of bearing risk. When we consider diversification, we find only 50 percent of the fund managers could generate positive returns for their schemes by diversifying the diversifiable risk. The results show that net selectivity is the minimum for JM Large Cap Fund and maximum for Tata Large Cap Fund. 50 percent of the funds have generated positive net selectivity showing that the fund managers were successful in selecting the appropriate stock in the scheme portfolio. The funds have been ranked based on the magnitude of net selectivity measure.

VIII. CONCLUDING OBSERVATION

This paper provides the clear concept on the stock selection skills of the mutual fund managers of large cap funds in India. Results portrays that the fund managers could not reap additional return for bearing risk and due to diversification only 50 percent of the fund managers could reap positive returns. The result also shows that for the large cap funds stock selectivity is evident in 50 percent of the funds. Fama's Selectivity model indicates that funds have positive net selectivity. Thus it is evident from the analysis that though some mutual fund managers have stock picking skills, some of them are not successful in picking the proper stock. The reason behind such results could be insufficient risk bearing attitude of fund managers, improper diversification by not considering all the securities in the basket and also lack of professionalism and training among the mutual fund managers.

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LIMITATIONS OF THE STUDY

- The study is confined to large cap funds only. There are other fund categories like mid cap funds, multi cap funds, debt funds and many more.
- We have considered monthly data in this study. Daily data could have given a better result.

FURTHER SCOPE OF STUDY

- Application of other models like Jensen's Alpha, Treynor-Mazuy and Henriksson-Merton also.
- Extending the time period of study considering the study during pandemic period.

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