Amity Journal of Management Research
3 (1), (27-39)

An Experiential Study of Stock Selection Abilities of Mutual Fund Managers in India

Anju B Nandrajog

Dev Samaj College for Women, Ferozepur, Punjab, India

Abstract

The Mutual fund industry of India has developed a significant growth in terms of AMCs starting from Rs. 246.7 million in 1965 to Rs. 1006 billion in 2002; from 7599.95 billion in 2012 and 8252 billion INR in 2014 to 10827.57 billion INR in 2016. As a result of this large investment interest, the extent of skills of selection of stocks used by the fund managers to earn superior returns always merits for continuous assessment. For this, the present study made an endeavour to evaluate the performance of stock selection of the equity growth schemes of mutual funds by managers of funds in India for the duration from January 2006-July 2016 using Jensen (1968) and Fama (1972) models. The study has found insignificant evidence for superior returns due to stock selectivity of the fund managers in India. It has also been found that the schemes of mutual funds, on an average basis, have failed to perform better for the market and bearing low risk than market. In the diversification front, majority of the schemes have performed moderately well. As a result, compensation for the inadequate diversification, on an average, has not impacted selectivity performance.

Key Words: Diversification, Mutual Fund, Net Selectivity Risk, Selectivity

JEL Classification: G10, G11

Paper Classification: Research Paper

Introduction

Mutual funds are working as a cheap, quick and transparent investment tool in today's volatile and gloomy market environment. Mutual fund attracts small investor's concentration helping encourage the growth of the economy. Over time, comprehensive development across the financial sector seems to have taken centre-spot, activities involving around this sole objective and re-designing all business strategies. The mutual fund industry being no different, various channels are being taken by Asset Management Companies (AMC's), distributors and numerous fund houses to spread a reach and access to the potential investors of the society. Knowingly the manager's performance broadly depends on three activities: Strategic allocation of the fund's money to broaden asset categories, selection of Securities and Market timings. Among them, selection of securities by the fund managers is perhaps the most desired for an evaluation. And hence, has been chosen to be the subject of the present study.

Review of Literature

Treynor and Mazuy (1966) found that no managers of the investment of the 57 selected funds had successfully predicted the market and suggested that an investor is completely dependent on general market fluctuations. Jensen (1968) studied 115 mutual funds for 1954-64 and concluded that the selected funds are unable to estimate prices of security, well sufficient to perform better. Fama (1972) advised substitute methods for the selection of stock and fund manager's market timing abilities and diversification for performance evaluation. He suggested to separate the manager's ability to choose the securities at certain risk level from return for general outguess about the market. Henriksson (1984) evaluated the performance of 116 open-ended investment schemes for 1968-80 to know the market timing abilities and found unsatisfactory timing skills of the fund managers. Chang, et al. (1984) examined stock selectivity and market timing abilities of 67 mutual funds for 1971-1979 and found that the fund managers were non-successful in performing a better passive investment strategy. Barua et al. (1991) studied the performance of the Master Share Scheme of UTI from the investor point of view which was India's first 7 year close end equity fund and concluded that funds have performed better in systematic risk, but not in terms of total risk. Overall it was found that the performance of the selected fund schemes in terms of return is satisfactory for larger investors. Grinblatt and Titman (1994) concluded that performance of mutual fund evaluation provides similar yield results with the same benchmark and the results vary with different benchmarks using the same measure. A significant positive relationship between turnover and fund manager's abilities to earn anomalous returns was also found. Shah and Thomas (1994) studied the 11 mutual fund schemes performance using weekly returns since their launch in April 1994 on market price basis data. They concluded that none of the schemes earned better return than market except UGS 2000 of UTI. The risk of these schemes is very high, and funds might be inadequately diversified. Jayadeve (1996) found that Mastergain mutual fund had performed better rendering to Jensen and Treynor measures, but not on Sharpe measure up to the benchmark; whereas Magnum Express underperformed in all these three measures. It was also found that Magnum Express had succeeded to reduce unique risk because of diversification whereas Mastergain did not. Gupta and Gupta (2004) examined the selected 57 Indian mutual funds for the duration of 1999-2003 on the basis of weekly returns of NAV. The study revealed that fund managers have not succeeded to outperform the related benchmark and risk-free return for the study period. Tripathy (2004) studied 31 mutual fund schemes based on tax planning for the duration of 1994-2001 and found that the fund managers failed to reap additional returns in the market. Chander and Singh (2004) evaluated particular funds from Nov 1993 to March 2003 and revealed that ICICI Prudential Mutual fund schemes and Alliance Mutual Fund have performed better than other funds whereas Pioneer ITI had an average performance and Templeton India Mutual Fund had a poor performance. Ananda and Murugaiah (2006) reported that the selected mutual funds are unable to compensate additional risk to investors. Sehgal and Jhanwar (2008) also found improvement, as evidence of selectively by use of high frequency of data as daily return with return based on monthly returns of 59 mutual funds schemes for the duration of 2000-04. Usha et. (2014) found that during the study period around two-third of sample fund managers had superior stock selection abilities and the rest lacked selection skills.

Out of the studies consulted, though a few have confirmed the superior stock selection performance overall, the review indicates that fund managers in India are insubstantial and inconsistent in stock selectivity.

Research Methodology

Objectives of the Study

Based on above discussion, it would be interesting to find out the new extent of the fund manager's ability in the recent times to outperform the market by identifying and exploiting the opportunities. Hence;

- To evaluate the schemes in the context of return, risk and diversification.
- To assess the stock picking performance of the mutual fund managers.
- To trace out the extent of difference in the rankings of the schemes across these selectivity measures.

The present study is empirical in nature and is employed on 13 Asset Management Companies of India (List attached in Annexure-1) which are purely related to open ended (growth category) private sector and never declared dividend in their lifetime. A total of 68 open ended mutual fund samples from January 2006 to July 2016 have been taken on the basis of daily NAV of selected schemes. The data of selected schemes is collected from www.bluechipindia.co.in. Convenience sampling is taken as, during study, it was found that only these schemes had data from 2006-16 under private sector funds in growth category. The suitable data of benchmark regarding the S&P CNX Nifty, known as NSE-Nifty, have been drawn from website www.nseindia.com. Further, the annual return on 91-day treasury bills (T-Bills) which is available on weekly basis is used as a substitute for the riskless return rate in the study taken from www.rbi.org.

Return and Risk Measure

The following equations have been used to work out the NAV based scheme return and market price based scheme return on daily basis.

(a) NAV based scheme return

$$R_P \text{ (Scheme return)} = \frac{(NAV_t - NAV_{t-1})}{NAV_{t-1}}$$

Where,
R_P = Annual return on a scheme
NAV_t = NAV for current day.
NAV_{t-1} = NAV for preceding day.

(b) Scheme Return on the basis of Market Price:

$$R_P = \frac{(MP_t - MP_{t-1})}{MP_{t-1}}$$

Where,
MP_t is the market price of a scheme for current day and MP_{t-1} is the market price of a scheme for the preceding day.

Measurement of Risk: Total risk is calculated through standard deviation of annual returns both for the mutual fund schemes ($_p$) and the market return ($_m$). Mathematically, the following formulae are used to compute mutual fund scheme risk and the market total risk:

Total risk of the scheme (σ_p) = $\sqrt{\dfrac{(S(Rp - AvgRp)2)}{(N-1)}}$

Market Portfolio (Total risk) (σ_m) = $\sqrt{\dfrac{(S(Rm - AvgRm)2)}{(N-1)}}$

(c) Risk free rate of Return (R_f):

$$R_f = \frac{(Rf_t - Rf_{t-1})}{Rf_{t-1}}$$

Where,
Rf_t is the market price of a T-bill for current day and Rf_{t-1} is the market price of the T-bill for the preceding day.

During calculation it was found that Rp, Rm and Rf varied from scheme to scheme when these all are co-related.

Jensen Measure

During 60s, Jensen (1968) provided another widely quoted performance measure of the portfolio performance, i.e., returns due to the abilities of fund managers to predict stock prices and selecting them for their portfolio (selectivity measure). The computation of Jensen's alpha is based on the equation of CAPM. Jensen's stock selectivity measure is represented by alpha parameter.

$$a_p = R_p - E(R_p)$$

$$E(R_p) = R_f + B_p(R_m - R_f)$$

Where:
a_p = Alpha Return
R_p = Actual Return of mutual funds
$E(R_p)$ = Expected Return of mutual funds
R_f = Risk free rate of return of mutual funds
R_m = Market rate of return of mutual funds

Thus a_p represents the difference between actual return and expected return $E(R_p)$. The positive value of (a_p) indicates the superior return that is acquired due to superior skills of fund managers. Whereas a_p =0 expresses the performance of the fund is indifferent.

Performance Evaluation with 'Stock Selectivity' Model

Eugene F Fama (1972), developed a distinguished model for portfolio performance with some refined breakdown of fund performance. As per Fama model the total return on a portfolio can be disintegrated into four different components. These are:-

Return on mutual fund = Risk Free Rate + Return from Market Risk + Return from Diversifiable Risk + Return from Pure Selectivity

It can be expressed as:

$$Rp = R_f + R_1 + R_2 + R_3$$

$$R_f = \text{Risk free rate of return of mutual fund}$$

(1) The return from market risk (R_1) is explained as:

$$R_1 = B_p(R_m - R_f)$$

(2) The return from diversifiable risk (R_2) is explained as:

$$R_2 = [(\sigma_p/\sigma_m) - B_p](R_m - R_f)$$

(3) The return from net selectivity (R_3) can be calculated as the variation between the actual return and the sum of the rest of three components as

$$R_3 = R_p - (R_f + R_1 + R_2)$$

The return from pure (net) selectivity (R_3) is actually the supplementary return obtained by a manager of the portfolio due to his superior stock selection abilities. It is the additional return earned from the return mandated by the total risk of the portfolio which is measured by standard deviation of the portfolio.

(4) Selectivity = Diversification + Net Selectivity

Mathematically, this can be expressed as the variation between the actual return earned on a portfolio and the return mandated by its total risk. This equation is also known as Fama's Net selectivity measure. The following formula may be used for calculation of net selectivity.

$$\text{Fama's net selectivity of the portfolio} = Rp - [R_f + (\sigma_p/\sigma_m)(R_m - R_f)]$$

Where:

Rp = Portfolio Rate of Retrun

R_f = Risk Free Rate of Return

R_m = Market Rate of Return

σ_p = Standard Deviation of Portfolio

σ_m = Standard Deviation of Market

The return from net selectivity may be negative. This occurs when the actual return realized on a portfolio is less than the return mandated by its total risk. This indicates that, due to poor stock selection, the portfolio has not earned the return expected from it commensurate with its total risk. The decomposition of total return is always helpful to find out the different skills involved by portfolio managers as active portfolio management. A portfolio manager who attempts to earn more return than the market return assumes higher risk and depends on his superior stock selection to achieve the higher return. If he is successful, the return due to pure selectivity would be positive and vice-versa.

Data Analysis and Interpretation

Return & Risk and Diversification

For the overall study period, it was found that there were only 12 schemes out of 68 schemes which were providing above 8% return and only 26 schemes out of 68 (38%) schemes provided higher return than market return. This better performance may be a result of active fund management approach taking advantage of every opportunity provided by the capital market, i.e. investment in new technology stock, selecting undervalued stock etc. This class of equity mutual fund schemes seem to have monitored a superior fund management approach supported by well researched stock selection and timing skills of fund managers. But rest of the 62% schemes failed to provide higher return than market return. So, it explained that the long term prospective in mutual funds is not beneficial for investor because it does not deliver a return equivalent to risk free return like Fixed Deposits etc. It was also found that on overall basis, average returns (0.06) of selected scheme are equal to the average of market return (0.06). It means that selected funds did not succeed to beat the benchmark. It was found that out of 68 schemes, 60 (88.2 percent) are providing more returns than T-bills. On the overall average basis, it was found that average of portfolio return (0.06) is more than the average of risk-free return (0.03) which means that schemes average return outperformed than the risk-free returns. It is important to explain that one-half of the sample mutual funds managers have followed a defensive low risk-low return approach by comparing the risk return trade off with the market risk and return. They believe in the "Play safe" strategy. But when they get low risk-high returns that may be due to their good stock selection strategies and abilities to choose the securities, there may be many external forces that affect the market returns or it may be due to chance.

Table A1: Risk and Return Analysis of Selected Schemes and Benchmark

Sr. No	Name of Schemes	Rp	Rm	Rf	(Rp-Rf)	SDp	SDm	R_1^2	β1
1	DWS Alpha Equity Fund Regular Plan-Growth	0.07	0.06	0.03	0.04	1.48	1.62	0.97	0.87
2	DWS Alpha Equity Fund Wealth Plan-Growth	0.07	0.07	0.07	0.00	1.12	1.26	0.96	0.86
3	DWS Investment Opportunity Fund Regular Plan-Growth	0.07	0.06	0.03	0.04	1.46	1.62	0.97	0.85
4	DWS Investment Opportunity Fund Wealth Plan-Growth	0.07	0.07	0.07	0.00	1.13	1.26	0.97	0.85
5	Escorts High Yield Equity Plan-Growth	0.05	0.05	0.02	0.03	1.15	1.60	0.82	0.54
6	Escorts Opportunities Funds-G	0.01	0.02	0.01	0.00	0.35	0.56	0.99	0.56
7	JM Arbitrage Advantage Fund-G	0.03	0.06	0.03	0.00	0.13	1.59	0.15	-0.02
8	JM Basic Fund-G	0.04	0.06	0.03	0.01	1.81	1.62	0.94	0.98
9	JM Emerging Leader Fund-G	0.04	0.06	0.04	0.00	2.76	1.82	0.67	0.85
10	JM Equity Fund-G	0.05	0.06	0.03	0.01	1.65	1.62	0.96	0.95
11	Kotak 50 Growth	0.07	0.06	0.03	0.04	1.42	1.60	0.97	0.86
12	Kotak Contra Scheme-G	0.06	0.06	0.03	0.03	1.36	1.63	0.98	0.77
13	Kotak Mid Cap Fund-G(Known as Kotak)	0.06	0.06	0.03	0.03	1.41	1.60	0.93	0.75
14	L&T Growth Fund cumulative	0.05	0.06	0.04	0.01	1.72	1.78	0.99	0.93
15	Quantum Long term Equity Fund-G	0.07	0.06	0.03	0.04	1.22	1.62	0.97	0.70
16	Reliance Banking Fund- Inst. Plan-G		0.05	0.04	-0.04	3.94	2.01	0.03	0.88
17	Reliance Banking Fund- Growth Plan-G	0.09	0.06	0.03	0.06	1.77	1.62	0.82	0.93
18	Reliance Diversified Power Sector Fund Inst. Plan G	0.01	0.03	0.02	-0.01	1.68	2.05	0.98	0.76
19	Reliance Diversified Power Sector Fund G	0.06	0.06	0.03	0.03	1.53	1.60	0.89	0.83
20	Kotak Opportunities - Growth	0.07	0.06	0.03	0.04	1.52	1.64	0.97	0.88
21	Reliance Equity Opportunities Fund Inst. Plan G	0.03	0.05	0.03	-0.01	2.16	1.71	0.01	0.73
22	Reliance Equity Opportunities Fund Retail Plan G	0.08	0.06	0.03	0.05	1.41	1.62	0.96	0.79
23	Reliance Growth Fund Inst. Plan G	0.06	0.05	0.03	0.02	1.47	1.67	0.99	0.77
24	Reliance Growth Fund Retail Plan G	0.07	0.06	0.03	0.04	1.43	1.63	0.97	0.79
25	Reliance Media and Entertainment Fund G	0.06	0.06	0.03	0.03	1.54	1.60	0.91	0.69
26	Reliance NRI Equity Fund-Growth Plan-G	0.07	0.06	0.03	0.04	1.50	1.60	0.99	0.88
27	Reliance Pharma Fund-Growth Plan-G	0.10	0.06	0.03	0.07	1.27	1.60	0.88	0.55
28	Reliance Regular Saving Fund- Equity Option- G	0.08	0.06	0.03	0.05	1.48	1.60	0.98	0.83
29	Reliance Vision Fund Inst. Plan Growth Plan-G	0.05	0.05	0.03	0.01	1.48	1.70	0.96	0.82

30	Reliance Vision Fund Retail Plan -G	0.07	0.06	0.03	0.04	1.47	1.62	0.97	0.85
31	Sahara Growth Fund-Growth	0.06	0.06	0.03	0.03	1.39	1.60	0.97	0.82
32	Sahara Infrastructure Fund-Fixed Pricing Option-Growth	0.05	0.05	0.03	0.02	2.15	1.65	0.97	0.83
33	Sahara Infrastructure Fund-Variable Pricing Option-Growth	0.05	0.05	0.03	0.02	2.12	1.63	0.96	0.82
34	Sahara Mid cap Fund-Growth	0.07	0.06	0.03	0.04	1.48	1.62	0.95	0.75
35	Sahara Wealth Plus Fund-Fixed Pricing Option-Growth	0.06	0.06	0.03	0.03	1.22	1.62	0.97	0.65
36	Sahara Wealth Plus Fund-Variable Pricing Option-Growth	0.06	0.06	0.03	0.03	1.20	1.62	0.96	0.65
37	Sundaram Balanced Fund - Appreciation	0.06	0.07	0.05	0.01	1.38	1.83	0.99	0.71
38	Sundaram Growth Fund-G	0.05	0.06	0.03	0.02	1.58	1.63	0.99	0.92
39	Sundaram India Leadership Fund-G	0.05	0.06	0.04	0.01	1.77	1.82	0.99	0.92
40	Sundaram Rural India Fund-G	0.04	0.06	0.03	0.01	2.01	1.63	0.80	0.86
41	Sundaram SMILE Fund-G	0.08	0.06	0.03	0.05	1.61	1.63	0.89	0.85
42	Sundaram SMILE Fund-Inst. G	0.13	0.06	0.08	0.05	3.15	1.31	0.98	1.21
43	Sundaram Select Focus Fund-G	0.06	0.06	0.03	0.03	1.56	1.63	0.97	0.90
44	Sundaram Select Focus Fund- Inst. G	0.05	0.05	0.02	0.02	1.59	1.62	1.00	0.91
45	Sundaram Select Midcap-G	0.09	0.06	0.03	0.06	1.43	1.63	0.96	0.73
46	Sundaram Select Midcap-Inst. G	0.10	0.05	0.08	0.02	1.09	1.14	0.91	0.75
47	Tata Contra Fund-G	0.05	0.06	0.03	0.01	1.54	1.75	0.93	0.80
48	Tata Equity Management Fund-G	0.04	0.06	0.04	0.00	1.38	1.95	0.80	0.66
49	Tata Equity P/E Fund-G	0.08	0.06	0.03	0.05	1.44	1.62	0.94	0.79
50	Tata Ethical Fund-G	0.07	0.06	0.03	0.04	1.58	1.62	0.95	0.75
51	Tata Indo-Global Infrastructure Fund-G	0.01	0.06	0.03	-0.02	1.74	2.00	0.91	0.80
52	Tata Infrastructure Fund-G	0.06	0.06	0.03	0.03	1.61	1.62	0.94	0.93
53	Tata Mid cap Fund-G	0.13	0.06	0.04	0.09	4.09	1.82	0.26	0.61
54	Tata Pure Equity Fund-G	0.07	0.06	0.03	0.04	1.45	1.62	1.00	0.83
55	Taurus Discovery Fund-G	0.05	0.06	0.03	0.02	1.70	1.63	0.90	0.85
56	Taurus Starshare Growth Option	0.07	0.06	0.03	0.04	1.72	1.62	0.97	0.93
57	Quantum Tax Saving Fund-G	0.09	0.08	0.04	0.05	0.98	1.32	0.98	0.68
58	Axis Long Term Equity Fund-G	0.09	0.04	0.07	0.02	0.89	1.09	0.88	0.74
59	Reliance Tax Saver (ELSS) Fund-G	0.07	0.06	0.03	0.04	1.40	1.62	0.90	0.76
60	Sahara Tax Gain Fund- G	0.07	0.06	0.03	0.04	1.40	1.62	0.97	0.78
61	Sundaram Tax Saverr Fund-G	0.07	0.06	0.03	0.03	1.44	1.63	0.97	0.82
62	Edelweiss ELSS Fund-G	0.09	0.08	0.05	0.05	1.10	1.29	0.93	0.80
63	Kotak Tax Saver Fund-G	0.06	0.06	0.03	0.03	1.49	1.63	0.95	0.85
64	Kotak Emerging Equity Scheme - Growth	0.06	0.06	0.02	0.04	1.37	1.63	0.91	0.71
65	Taurus Tax Shield Fund-G	0.06	0.06	0.03	0.03	1.57	1.62	0.82	0.83
66	L&T Tax Saver Fund-G	0.05	0.06	0.03	0.02	1.55	1.62	0.96	0.90
67	JM Tax Gain Fund-G	0.02	0.04	0.02	0.00	1.60	1.55	0.94	0.92
68	Escorts Tax Plan Fund-G	0.04	0.06	0.03	0.01	1.41	1.63	0.92	0.69
	Average	0.06	0.06	0.03	0.03	1.57	1.61	0.89	0.79

Beta measures the stock volatility in relation to overall market and it was found that the mutual fund industry across the board has been very defensive in their investment approach. Most of the selected schemes come between 0 to 1 beta values throughout the study period, it means that these move in same direction of the market indicating holding of less risky portfolio than the market portfolio, but still, majority of the schemes are highly volatile as their betas are very close to 1. It implies that fund managers of these schemes hold those portfolios that seem less risky than the market portfolio.

Jenson Measure

Positive alpha implies that the scheme has performed better than the market index and negative alpha indicates just the opposite. On the overall study period basis, it was found that 60 schemes outperformed the market index. On the other side, 8 schemes are underperforming with negative alpha values which means poor performance in the stock selectivity front. It also implies that, these funds succeeded to use the superior management skills. Managers of Reliance Banking Fund- Inst. Plan-G (rank 68), Tata Indo-Global Infrastructure Fund-G (rank 67) and Escorts Opportunities Funds-G (rank 66) have exhibited abysmal performance in the stock selection game. Whereas, the managers of Reliance Pharma Fund-Growth Plan-G (rank 1), and Quantum Tax Savings fund-G (rank 2) and Edelweiss ELSS Fund-G (rank 3) have succeeded to leave at least some mark of their good stock selection skills. Their professionals are so skilled to reduce the scheme risk. It also explains that the return earned by the scheme is due to active management skills. Alpha values are positive in majority of the schemes across the study period.

Table A2: FAMA Decomposition of Selected Schemes

Sr. no	Name of Schemes	Rf	Alpha	Rank	T-Value	Unique Risk(R1)	Diversification Risk (R2)	Net Selectivity (R3)	Selectivity
1	DWS Alpha Equity Fund Regular Plan-Growth	0.03	0.03	19	-0.01	0.03	0.00	0.01	0.01
2	DWS Alpha Equity Fund Wealth Plan-Growth	0.07	0.00	61	-0.44	0.00	0.00	0.00	0.00
3	DWS Investment Opportunity Fund Regular Plan-Growth	0.03	0.03	22	-0.03	0.03	0.00	0.01	0.01
4	DWS Investment Opportunity Fund Wealth Plan-Growth	0.07	0.00	62	-0.49	0.00	0.00	0.00	0.00
5	Escorts High Yield Equity Plan-G	0.02	0.02	31	-0.03	0.01	0.00	0.01	0.01
6	Escorts Opportunities Funds-G	0.01	-0.01	66	0.31	0.00	0.00	-0.01	-0.01
7	JM Arbitrage Advantage Fund-G	0.03	0.02	27	-0.15	0.00	0.00	0.00	0.00
8	JM Basic Fund-G	0.03	0.00	57	-0.17	0.03	0.00	-0.03	-0.02
9	JM Emerging Leader Fund-G	0.04	0.00	63	-0.45	0.01	0.01	-0.03	-0.02
10	JM Equity Fund-G	0.03	0.01	49	-0.17	0.03	0.00	-0.02	-0.01
11	Kotak 50 Growth	0.03	0.03	21	-0.03	0.03	0.00	0.01	0.01
12	Kotak Contra Scheme-G	0.03	0.02	35	-0.05	0.02	0.00	0.00	0.00
13	Kotak Mid Cap Fund-G(Known as Kotak)	0.03	0.02	28	0.09	0.02	0.00	0.01	0.01
14	L&T Growth Fund cumulative	0.04	0.01	54	-0.59	0.02	0.00	-0.01	-0.01
15	Quantum Long term Equity Fund-G	0.03	0.03	8	0.14	0.02	0.00	0.02	0.02
16	Reliance Banking Fund- Inst. Plan-G	0.04	-0.02	68	1.17	0.02	0.02	-0.13	-0.11

17	Reliance Banking Fund- Growth Plan-G	0.03	0.03	7	-0.38	0.03	0.00	0.03	0.03
18	Reliance Diversified Power Sector Fund Inst. Plan G	0.02	0.00	65	-0.65	0.01	0.00	-0.01	-0.01
19	Reliance Diversified Power Sector Fund G	0.03	0.02	34	-0.65	0.02	0.00	0.00	0.01
20	Kotak Opportunities - Growth	0.03	0.03	15	-0.04	0.03	0.00	0.01	0.02
21	Reliance Equity Opportunities Fund Inst. Plan G	0.03	0.00	64	1.58	0.01	0.01	-0.03	-0.02
22	Reliance Equity Opportunities Fund Retail Plan G	0.03	0.04	5	0.12	0.02	0.00	0.03	0.03
23	Reliance Growth Fund Inst. Plan G	0.03	0.02	43	-0.41	0.01	0.00	0.01	0.01
24	Reliance Growth Fund Retail Plan G	0.03	0.03	12	-0.07	0.02	0.00	0.02	0.02
25	Reliance Media and Entertainment Fund G	0.03	0.02	36	-0.37	0.02	0.01	0.00	0.01
26	Reliance NRI Equity Fund-Growth Plan-G	0.03	0.03	14	-0.08	0.03	0.00	0.02	0.02
27	Reliance Pharma Fund-Growth Plan-G	0.03	0.05	1	0.17	0.02	0.01	0.04	0.05
28	Reliance Regular Saving Fund- Equity Option- G	0.03	0.04	6	-0.14	0.03	0.00	0.03	0.03
29	Reliance Vision Fund Inst. Plan Growth Plan-G	0.03	0.01	50	-0.27	0.01	0.00	0.00	0.00
30	Reliance Vision Fund Retail Plan -G	0.03	0.02	23	-0.13	0.03	0.00	0.01	0.01
31	Sahara Growth Fund-Growth	0.03	0.02	30	-0.43	0.02	0.00	0.01	0.01
32	Sahara Infrastructure Fund-Fixed Pricing Option-Growth	0.03	0.01	51	-0.39	0.02	0.01	-0.01	0.00
33	Sahara Infrastructure Fund-Variable Pricing Option-Growth	0.03	0.01	48	-0.64	0.02	0.01	-0.01	0.00
34	Sahara Mid cap Fund-Growth	0.03	0.02	26	-0.37	0.02	0.01	0.01	0.01
35	Sahara Wealth Plus Fund-Fixed Pricing Option-Growth	0.03	0.02	29	-0.04	0.02	0.00	0.01	0.01
36	Sahara Wealth Plus Fund-Variable Pricing Option-Growth	0.03	0.03	18	0.03	0.02	0.00	0.01	0.01
37	Sundaram Balanced Fund - Appreciation	0.05	0.01	55	-0.58	0.02	0.00	-0.01	-0.01
38	Sundaram Growth Fund-G	0.03	0.02	45	-0.40	0.03	0.00	-0.01	0.00
39	Sundaram India Leadership Fund-G	0.04	0.01	53	-0.78	0.01	0.00	0.00	0.00
40	Sundaram Rural India Fund-G	0.03	0.00	58	0.03	0.03	0.01	-0.03	-0.02
41	Sundaram SMILE Fund-G	0.03	0.03	10	-0.18	0.03	0.00	0.02	0.03
42	Sundaram SMILE Fund-Inst. G	0.08	0.02	42	-1.08	-0.03	-0.03	0.10	0.08
43	Sundaram Select Focus Fund-G	0.03	0.02	38	-0.41	0.03	0.00	0.00	0.00
44	Sundaram Select Focus Fund- Inst. G	0.02	0.02	44	-0.41	0.02	0.00	0.00	0.00
45	Sundaram Select Midcap-G	0.03	0.04	4	-0.14	0.02	0.00	0.03	0.04
46	Sundaram Select Midcap-Inst. G	0.08	0.02	37	-0.48	-0.02	0.00	0.04	0.04
47	Tata Contra Fund-G	0.03	0.01	52	-0.45	0.02	0.00	-0.01	-0.01
48	Tata Equity Management Fund-G	0.04	0.00	59	-1.34	0.02	0.00	-0.01	-0.01
49	Tata Equity P/E Fund-G	0.03	0.03	9	-0.17	0.02	0.00	0.02	0.02
50	Tata Ethical Fund-G	0.03	0.03	16	0.28	0.02	0.01	0.01	0.02
51	Tata Indo-Global Infrastructure Fund-G	0.03	-0.01	67	-0.25	0.02	0.00	-0.04	-0.04
52	Tata Infrastructure Fund-G	0.03	0.02	40	-0.37	0.03	0.00	0.00	0.00
53	Tata Mid cap Fund-G	0.04	0.02	33	-1.41	0.01	0.02	0.06	0.08

54	Tata Pure Equity Fund-G	0.03	0.03	17	-0.01	0.03	0.00	0.01	0.01
55	Taurus Discovery Fund-G	0.03	0.01	47	-0.13	0.03	0.01	-0.01	-0.01
56	Taurus Starshare Growth Option	0.03	0.02	32	-0.14	0.03	0.00	0.00	0.01
57	Quantum Tax Saving Fund-G	0.04	0.05	2	0.01	0.02	0.00	0.02	0.03
58	Axis Long Term Equity Fund-G	0.07	0.02	24	0.05	-0.02	0.00	0.04	0.04
59	Reliance Tax Saver (ELSS) Fund-G	0.03	0.03	11	-0.01	0.02	0.00	0.02	0.02
60	Sahara Tax Gain Fund- G	0.03	0.03	20	-0.36	0.02	0.00	0.01	0.01
61	Sundaram Tax Saverr Fund-G	0.03	0.02	25	-0.19	0.03	0.00	0.01	0.01
62	Edelweiss ELSS Fund-G	0.05	0.04	3	-0.07	0.03	0.00	0.02	0.02
63	Kotak Tax Saver Fund-G	0.03	0.02	39	0.03	0.03	0.00	0.00	0.00
64	Kotak Emerging Equity Scheme - Growth	0.02	0.03	13	0.48	0.03	0.00	0.01	0.01
65	Taurus Tax Shield Fund-G	0.03	0.02	41	-0.26	0.03	0.00	0.00	0.00
66	L&T Tax Saver Fund-G	0.03	0.01	46	-0.26	0.03	0.00	-0.01	-0.01
67	JM Tax Gain Fund-G	0.02	0.00	60	0.13	0.02	0.00	-0.02	-0.02
68	Escorts Tax Plan Fund-G	0.03	0.00	56	-0.26	0.02	0.01	-0.02	-0.01
	Average	0.03	0.02			0.02	0.00	0.00	0.01

FAMA Decomposition

Table-A2 gives us information regarding Fama's components of performance for the selected equity schemes. It reveals that 62 sample schemes out of the 68 have ensured positive performance on account of risk bearing activity of their fund managers. This is the return due to systematic risk or market risk also known as unique risk. Only 6 schemes showed the negative performance in this respect. Regarding the fund manager's performance which is based on their diversification strategies it can be seen that out of the 68 schemes, 63 have ensured positive compensation for diversification. It shows that by using diversifiable portfolio strategies fund managers are succeeding to generate additional return than risk free rate of return (Rf).

The schemes which are providing negative returns by bearing unique risk and diversification risk are DWS alpha equity fund wealth plan (Growth), DWS investment opportunity fund wealth plan (Growth), Sundaram SMILE fund Inst plan (G), Sundaram select mid cap inst plan (G), Axis long term equity fund (G), and one more scheme which provided negative return added in the case of unique risk was that of JM arbitrage advantage fund-(G).

After accounting for diversification, net selectivity is calculated. It is the excess return earned apart from bearing total risk and indicates the additional return earned by portfolio manager for his superior stock selection abilities. Mathematically:

Net selectivity = actual return on a portfolio – return mandated by its total risk.

Sometimes, net selectivity is found adverse that means that the fund managers have taken diversifiable risk, but they failed to compensate with extra returns. In terms of net selectivity, there are 43 schemes which have positive values and 25 schemes have negative values that means fund managers of these 43 schemes have succeeded to get some additional compensation for their diversifiable activities. Rest of 25 schemes failed due to poor stock selection, the portfolio has not earned the return expected from it commensurate with its total risk. However, in case of rest of

25 schemes net selectivity is negative which means that the fund managers failed to get extra returns by bearing diversifiable risk.

Table A2 shows that within the 46 schemes, the selectivity measure is positive showing superior stock selection abilities of their fund managers whereas in the rest 22 schemes, the selectivity measure is negative reflecting inferior stock selection abilities. This shows that only 32 percent of the selected schemes failed to provide positive return due to their portfolio manager's skills. So, as far as these 22 poor schemes are concerned it is the need of the hour to work out their investment strategies again and reframe their investment structure accordingly.

Stock Selection Performance across the Criteria of Measurement

In order to find out, whether the manager's stock selection performance ranking followed various measurement criteria, differed largely from one another or not, the study attempts to calculate Spearman's Rank Coefficients of Correlation between the rank of measurement of selectivity criteria. The results as per Table A3 show that magnitude of association amongst the rankings under Jenson (1968) and Fama's (1972) Criterion of Selectivity (Rs.1,2) and amongst the rankings under Jenson (1968) and Fama's (1972) Criterion of Net Selectivity (Rs.1,3) and concerning the rankings under Fama's (1972) Selectivity Criterion and Fama's (1972) Criterion of Net Selectivity (Rs.2,3) are highly significant at 0.01 level. It indicates fund manager's uniform selection of stock performance across the different criteria of measurement, whereas at the same stretch the highly significant value (Rs.1,3) and (Rs. 2,3) implies that compensation for the insufficient diversification has not compressed selectivity performance anyway.

Table A3: Stock Selection Performance

Spearman's Rank Coefficients of Correlation		$r_s(i,j)$	P-value
Association Between Ranks under Jensen (1968) and Fama (1972) Criterion of Selectivity	rs(1,2)	0.865	.000
Association Between Ranks under Jensen (1968) and Fama (1972) Criterion of Net Selectivity	rs(1,3)	.858	.000
Association Between Ranks under Fama (1972) Selectivity and Fama (1972) Net Selectivity Criterion	rs(2,3)	.987	.000

• *Significance at 0.01 level of significance*

Findings and Conclusion

The study has assessed the performance of 68 growth-oriented equity schemes across the various private sector mutual funds over a period of January 2006- July 2016. It was found that, after taking the risk, for the studied duration mutual fund schemes on an ordinary have been unsuccessful to overtake the market. But the risk factor was found lower than the market risk. Around 64.8% sample schemes are found to make a mismatch in risk-return trade-off and have reported lower return after taking higher risk vis-a-vis the market risk and return. Though, in the diversification score, majority of the schemes have performed moderately well but are found to be highly volatile as their betas are very close to 1. Only one scheme found beta negative i.e. JM Arbitrage advantage fund (G).

Following the Jensen (1968) measure 88.2% samples have shown superior but statistically insignificant stock selection performance of their fund managers. And on the whole, the stock selection performance of the scheme though positive but is very low. Like, Jensen (1968), Fama

(1972) decomposition measure too finds positive selectivity for the 67.6% samples. But, in the net selectivity front, only 16 schemes, representing a little less 63.25% of the total samples, have reported positive net selectivity.

In fact, good stock selection performance indicates a holding of outperforming portfolio by the fund managers out of their quality investment in decision making and hence, generation of above normal return. This study using Jensen as well as Fama models, on an aggregate, finds no such significant and conclusive evidence in support of superior stock selection activity of the mutual fund managers in India during the period of recent stock market. This uniformity in the stock selection performance of the fund managers across the measurement criteria has also been statistically validated.

Analyzing the fund's performance attributes following Fama's (1972) measure, the impact of the expected risk premiums for the schemes is reported to be very high. This is mainly due to high betas reported by the select schemes. In fact, during the market upswings, funds are always selected to hold larger proportion for their investment in market portfolio and try to time the market by increasing the beta of their portfolio. Hence, high risk premiums as a phenomenon during the stock market boom and does not contribute to the poor performance of stock selection of the select schemes. At the same stretch, it is evident that the benefit for the insufficient diversification, on an average, has not compressed selectivity performance anyhow. So, it can be determined that the fund manager's however have prospered to some amount on the diversification end but failed to earn significant positive returns by selecting mis-valued securities in their portfolio. This can possibly be an outcome of the efficient market theory.

References

Ananda, S. & Murugaiah, V. (2007). *Analysis of Components of Investment Performance – an Empirical Study of Mutual Funds in India.* SSRN. https://doi.org/10.2139/ssrn.961999

Barua, S. K., & Varma, J. R. (2016). Mastershares: A Bonanza for Large Investors. *Vikalpa*, *16*(1), 29–34. https://doi.org/10.1177/0256090919910103

Chang, E. C., & Lewellen, W. G. (1984). Market Timing and Mutual Fund Investment Performance. *The Journal of Business*, *57*(1), 57–72. https://doi.org/10.1086/296224

Henriksson, R. D. (1984). Market Timing, Selectivity, and Mutual Fund Performance: An Empirical Investigation. *The Journal of Business*, *57*(1), 73–96. https://doi.org/10.1086/296505

Fama, F., & Eugene. (1972). Components of Investments Performance. *The Journal of Finance*, *27*(3), 551–567. https://doi.org/10.1111/j.1540-6261.1972.tb00984.x

Grinblatt, M., & Titman, S. (1994). A Study of Monthly Mutual Fund Returns and Performance Evaluation Techniques. *The Journal of Financial and Quantitative Analysis*, *29*(3), 419–444. https://doi.org/10.2307/2331338

Jensen, M. C. (1968). Problems In Selection of Security Portfolios : The Performance of Mutual Funds in the Period 1945-1964. *The Journal of Finance*, *23*(2), 389–416. https://doi.org/http://doi.org/10.1111/j.1540-6261.1968.tb00815.x

Jayadev, M. (1996). Mutual Fund Performance:An Analysis of Monthly Returns. *Finance India*, *10*(1), 73–84. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.467.4483&rep=rep1&type=pdf

Usha, R. & Kumar, R. (2014). Portfolio Evalio of Mutual Funds in India-An Empirical Study of Equity Growth

Schemes of Select Funds. *CLEAR International Journal of Research in Commerce & Management*, *4*(2), 164–169.

Sehgal, S. & Jhanvar,M. (2008). On Stock Selection Skills and Market Timing Abilities of Mutual Fund Managers in India. *International Research Journal of Finance and Economics*, *15*, 307–317.

Treynor, J. L., & Mazuy, K. K. (1966). Can Mutual Funds Outguess the Market? *Harvard Business Review*, *44*(4), 131–136.

Tripathy, N. (2004). An Empirical Analysis of Performance Evaluation of Mutual Funds in India-A study on Equity schemes. *ICFAI Journal of Applied Finance*, *10*(4), 36–55.

Annexure-1

List of Selected AMC (Asset Management Companies)

Sr. no	Name of Schemes
1	Deutsche Asset & Wealth Management
2	Escorts Asset Management Ltd.
3	J.M. Financial Asset Management
4	Kotak Mahindra Asset Management Co. Ltd.
5	Reliance Capital Asset Management Ltd.
6	Sahara Asset Management Co. Private Ltd.
7	Sundaram Asset Management Co. Ltd.
8	Tata Asset Management Ltd.
9	Taurus Asset Management Company Ltd.
10	L&T Investment Management Ltd.
11	Edelweiss Asset Management Ltd.
12	Quantum Asset Management Co. Pvt. Ltd
13	Axis Asset Management Co. Ltd.

Author's Profile

Anju B Nandrajog is a Ph.D in Finance from MDU Rohtak, Haryana, India and MBA (Finance) from Guru Jambheshwar University, Hisar, Haryana, India. She also holds M.Phil, M.Com, MA (Eco.), UGC-NET degrees. She is actively involved in the academic field and in teaching profession for over more than thirteen years. Currently she is working as an Assistant Professor at Dev Samaj College for Women, Ferozepur City, Punjab, India and handling advanced and basic courses in Finance and Accounting. She has contributed handful of publications in national and international journal in the area of her research. She has also presented various research papers in national and international conferences.