

## OPEN-ENDED MUTUAL FUND SCHEMES IN INDIA BASED ON PERFORMANCE OF SELECTIVITY

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**ABSTRACT:** The task for identifying the right mutual fund schemes and deliver excess returns over the benchmark index is a central issue for the financial academics. Certainly, the financial academics have always been devoted to develop an objective and accurate measure, which is able to assess and compare the performance and judge the abilities of the fund managers. This need has emerged out of two different dimensions. On one hand, the investors are interested to find out if the fees and expenses incurred by them are justifiable and on the other hand, the fund managers would like to reveal their importance and justify the importance of actively managed over passively managed portfolios. Consistent with a steady growth of the mutual fund industry worldwide, there is a great deal of work conducted towards the development of more sophisticated measures on performance measurement. Thus, in this chapter, a popular risk-adjusted performance measure is presented, which is used to evaluate the performance of the selected open-ended mutual fund schemes and to identify if the fund managers have superior stock selection abilities.

**KEY WORDS:** Open Ended Mutual Fund Schemes, Selectivity, Mutual Fund.

### I.INTRODUCTION

Investors invest in mutual fund schemes with an expectation of earning higher rate of return than the risk-free rate at a minimum degree of expected risk. At present, a large number of mutual fund schemes are available in the Indian financial market, as the mutual fund industry is no longer confined to the Government sector only, the private sector has come up with large number of mutual fund schemes. At present in India 44 mutual fund companies are operating with 950 schemes [1] (open & close ended) with a view to provide varieties of objectives as per investors' need (AMFI report).

Therefore, it is very difficult to the investors to select right schemes from a large number of schemes. In this situation, due to the lack of sufficient knowledge and skills, investors are expected to become confused regarding selection of appropriate scheme (s) among the available schemes that would offer them higher acceptable rate of returns with a minimum degree of expected risk. Following this suggestion, in this chapter, it is examined the efficiency of the mutual fund managers relating to their stock selection ability [2].

In order to make appropriate selection, one needs to make appraisal of performances of the available schemes. The stock -selection performance of the mutual fund managers suggested by Jensen<sup>1</sup> may be used as an appropriate basis for evaluation. Before application of this measure in empirical analysis, it is very much needed to discuss about the genesis of this model. The important issue in finance is to evaluate portfolio performance in risky investments. Generally, the concept behind portfolio performance has two distinct proportions. One is to increase returns of the portfolios through successful prediction of security prices by the portfolio managers and other is to reduce the degree of unsystematic risk born by the investors through efficient diversification.

Large numbers of studies have evaluated the performance of portfolios mainly on mutual fund perspective. Almost all of those studies have focused on relative measures of

performance and mainly confined to ranking of portfolios [3]. Therefore, the past studies of investment performance cannot quantify the element of risk and its control. In that situation, M.C. Jensen in 1968 proposes an absolute measure of portfolio performance, which is able to evaluate the efficiency of the portfolio managers with respect to security selection and give adequate control over the risk.

Although, Jensen's portfolio performance evaluation model is derived from the direct application of the theoretical results of the capital asset pricing models developed independently by Sharpe (1967), Linter<sup>3</sup> (1965), Mosin<sup>4</sup> (1967) and Treynor<sup>5</sup>. The security can be any asset, such as stocks, bonds, or derivatives. A market model, most commonly known as capital asset pricing model (CAPM), predicts the theoretical return. The market model uses statistical methods to predict the appropriate risk-adjusted return of an asset [4]. The CAPM for instance uses beta as a multiplier. Alpha is defined by Michael Jensen (1968). He investigates the emerging efficient market hypothesis and wants to determine whether mutual fund managers' historical returns indicate ability to outperform the overall market. A simple approach is developed to compare mutual fund annual returns to the annual returns of the market portfolio, which might be represented by some broad index, such as the S&P 500. Such a comparison can be misleading because it does not take into account the risk [5].

## **II. OBJECTIVE OF THE STUDY**

The research study is designed to examine the selectivity performances of the open-ended mutual fund schemes in India over a period of ten years. In order to examine the stock selection performances of the open-ended mutual fund schemes, Jensen measure is applied. Based on Jensen alpha the objectives are specified as under:

- To examine the stock – selection performance of the open-ended mutual fund schemes in India.
- To investigate the strength of relationship between stock – selection performance and schemes' rate of return.
- To make a comparative analysis among the different types of schemes according to their stock – selection performance.
- To examine whether the mutual fund schemes are equal performers in respect of stock-selection performance.

## **III. DATA & THEIR SOURCES**

In respect of data and their sources, study period, risk-free rate and market index and this chapter deals with the evaluation of stock selection performance of the open-ended mutual fund schemes by using the same data. Therefore, in this chapter the data and their sources does not discussed again.

## **IV. METHODOLOGY**

The task for identifying the right mutual fund schemes and deliver excess returns over the benchmark index is a central issue for the financial academics. Certainly, the financial academics have always been devoted to develop an objective and accurate measure, which is able to assess and compare the performance and judge the abilities of the fund managers. This need has emerged out of two different dimensions. On one hand, the investors are interested to find out if the fees and expenses incurred by them are justifiable and on the other hand, the fund managers would like to reveal their importance and justify the importance of actively managed over passively managed portfolios.

Consistent with a steady growth of the mutual fund industry worldwide, there is a great deal of work conducted towards the development of more sophisticated measures on performance measurement. Thus, in this

chapter, a popular risk-adjusted performance measure is presented, which is used to evaluate the performance of the selected open-ended mutual fund schemes and to identify if the fund managers have superior stock selection abilities. In order to evaluate the stock selection performance of the open-ended mutual fund schemes over a period of 10 years a quantitative technique is used, which is proposed by Jensen. Thus, by applying this measure it became easier to identify the successful managers who have provided superior stock selection performances.

**Risk Measure:** The fundamental idea of the mutual fund schemes is nothing else but investing in the different securities in the financial market. It is renowned from the finance literature that these security prices and returns are subject to random fluctuations and hence, in the capital market these random fluctuations and thereby, uncertain returns is often termed as 'risk' of an investment, which is reproduced in the names of standard deviation and Beta.

**Standard Deviation:** Simply, standard deviation of a set of observations is the square-root of the arithmetic mean of squares of deviations from arithmetic mean. Alternatively, standard deviation is a mathematical expression that measures the range of probable outcomes from a particular set of data. Also, the greater the range of possible outcomes, the higher is the standard deviation of that particular asset class of securities' i.e. higher the standard deviation of the returns from a particular investments, higher is the risk content. It acts as a superior indicator of the volatility i.e. how dispersed are the values under the study are dispersed from their means.

**Beta:** Beta is essentially the sensitivity or the volatility of the stocks in relation to the

market portfolio. By definition, if the beta of a portfolio of securities is equal to one, this means that it moves with the market. If the beta is less than one, i.e. it is a low beta stock; this means that the stock or the portfolio moves less than proportionately to the market and vice-versa. Thus, "beta shows how much the share price movement correlated with the movement in the stock market". Beta is the key component of the

Capital Asset Pricing Model and thus, is referred to as the slope of the regression coefficient. In the context of beta application, it should be noted that for its calculation the selection of an appropriate benchmark (market index) is important. In this research BSE-Sensitive Index is used as a surrogate of market index. The beta of the BSE Sensex is assumed to be one. For its computation, simple regression is run using SPSS. This is done by running regression equation on the monthly returns of the individual returns of the mutual fund scheme with the monthly return of the market index.

**Application of Jensen measure:** Investors invest in mutual fund schemes with the expectation of earning at higher return than the risk-free rate of return with a minimum degree of expected risk. The returns of the schemes will be higher if the mutual fund managers are able to predict the price movement of the individual securities efficiently in the volatile market. This can be measured with the help of Jensen measure. This measure is applied to examine the stock-selection performance of the managers of various types of open-ended mutual fund schemes in India

**Hypothesis Formulation:** Hypotheses are statements characterized by guesses or assumptions. Normally, a hypothesis says much more than we can over, therefore, it

must be tested. A hypothesis can never be regarded as definitely proved or true. However, there are reasons for having higher confidence for a hypothesis subjected to rigid tests, which all have given positive results, than to a hypothesis never being tested. Popper stated that human knowledge is never definitive or absolute true. “Scientific truth” is only guesses or preliminary hypotheses, which have to be subject for rational criticism and rigorous tests. Yet, Popper meant that there are objective truths and meant that we can only be incorrect if there is something to be wrong about.

A hypothesis can only be wrong if there is an objective truth from which it diverges. Upon statistical tests a null hypothesis ( $H_0$ ) as well as an alternative for this ( $H_a$ ) is formulated. Statistical tests result in the null hypothesis being either rejected or accepted. A null hypothesis usually implies that nothing is changes; null means no change. The alternative hypothesis implies that a change is taken place. Generally, a one-sided alternative hypothesis is used, meaning that it only includes one of two alternatives – an increase or decrease. The boundary mark for rejecting the null hypothesis is set by the significance level, which is the risk of rejecting the null hypothesis when it is true. This risk shall be as little as possible. Usually the significance level in statistical tests is set to one or five percent.

These values, also called confidence level, are used in this study. In Microsoft Excel or similar statistical software package, the programmed delivers the significance value of the regression coefficients. The programmed performs a statistical test showing if the null hypothesis is zero. With this, as point of departure, the null hypothesis is either rejected or accepted.

Microsoft Excel delivers two measures. The first measure is the t-value. To understand this measure and finding the significance level a table of normal distribution is used. If the amount of observations is less than thirty (30) a table of t-distribution is used.

The second value delivered is the p-value of the null hypothesis. If the significance level is set to be five percent the p-value should be less than 0.05 to be able to reject the null hypothesis

## **V. RESULT & DISCUSSION**

One of the important tasks of mutual fund managers is the efficient prediction of security prices from the volatile stock market. It requires the capability of the managers for analyzing the undervalued or overvalued security prices correctly that ensure higher rate of return. Therefore, winner managers are those, who perform this work properly as a result, this, in turn, would offer higher rate of return to the investors. This objective can be performed with the help of Jensen measure. It is assumed that positive Jensen alpha sometime provides to the investors higher rate of return but statistically significant Jensen alpha provides to the investors abnormally higher rate of return, which may be regarded as the superior stock – selection performance of the mutual fund managers. The stock – selection performances of various types of the open-ended mutual fund schemes are presented in various tables throughout this chapter.

**Table. 1: SELECTIVITY PERFORMANCE OF THE OPEN – ENDED INCOME SCHEMES**



No	Name of the Scheme	$J_\alpha$	t-value	D-W
1	Alliance short term fund-growth	-0.843	-1.519	1.9648
2	Alliance income fund-growth	0.294	0.584	1.9945
3	Alliance income fund-54EA-growth	0.294	0.578	1.8902
4	Alliance income fund-54EB-growth	0.009	0.023	2.0012
5	Alliance monthly income-growth	0.151	0.434	1.9123
6	Birla MIP-Plan C –growth	-0.105	-0.232	1.9723
7	Birla income plus-retail-growth	-0.036	-0.095	1.9865
8	FT India monthly income plan-growth	0.248	0.714	1.9904
9	Templeton monthly income plan-growth	0.074	0.220	2.1234
10	Templeton India inc build a/c-growth	-0.082	-0.212	2.6759
11	Templeton India income fund-growth	-0.060	-0.162	2.4557
12	Principal income fund-growth plan-G	0.136	0.323	1.9212
13	Principal deposit fund-plan 54EA/EB	-0.071	-0.186	1.9012
14	UTI senior citizen unit plan	0.450	0.887	1.9001
15	UTI-Mahila unit scheme(UMS)	0.645	1.363	1.9576
16	UTI-Bond fund-growth(rep. aft 6 months)	-0.071	-0.193	1.9043
17	UTI-retirement benefit pension fund.	-0.299	-0.582	2.1201
18	SBI magnum monthly income plan-G	-0.001	-0.004	2.1346
19	SBI magnum income fund-growth	-0.136	-0.364	2.0001
20	Reliance mtf-retail-growth plan growth op	-0.127	-0.364	2.1924
21	Reliance short term fund-growth	-0.779	-1.710	1.9876
22	Reliance inc fund retail pl-gr.pl-growth op	-0.143	-0.117	1.9912
23	Libra bond fund-dividend	-0.501	-1.152	1.9782
24	Libra bond fund-growth	-0.471	-1.079	1.9012
25	II & FS Bond fund-stp-growth	-0.220	-0.325	1.9991
26	II & FS Bond fund-bonus plan	-0.408	-0.765	1.9876
27	JM short term fund-growth	-0.503	-1.337	2.1435
28	JM income growth-bonus option	-0.077	-0.198	2.2012
29	Prudential ICICI fixed maturity plan-yearly	0.317	0.614	2.1023
30	Prudential ICICI fmp yearly series	0.993	<b>2.187*</b>	1.9123
31	Prudential ICICI fixed maturity pl-yr	0.981	1.553	1.8976
32	Prudential ICICI income pl-growth option	-0.045	-0.120	1.9456
33	Prudential ICICI mip-dividend-quart	-0.585	-1.822	1.9422
34	Prudential ICICI mip- cumulative	0.400	0.469	1.9991
35	GSSIF-ST-Growth	-0.129	-0.380	1.9345
36	GSSIF-Growth	-0.079	-0.207	1.9354
37	Sun F&C monthly income-growth	1.174	<b>2.323*</b>	1.9001
38	Sun F&C money value fund-bond op-growth	1.372	<b>2.679*</b>	2.1032
39	HDFC income fund-growth	-0.098	-0.241	2.2013
40	HDFC short term plan-growth	-0.481	-1.173	2.2567
41	BOB income fund-dividend. plan	-0.555	-1.490	1.9910
42	BOB income fund-growth	-0.561	-1.491	1.9245
43	Can income-growth plan	-0.723	-1.638	2.1235
44	Can cigo-growth plan	0.015	0.041	2.0123
45	Sahara income fund-growth	-0.608	-1.484	1.8965
46	Sahara short term plan-growth	-0.790	-1.488	1.9567
47	DBS chola triple ace-regular-cm	-0.196	-0.534	1.9930
48	Escorts income bond-dividend	1.014	1.590	1.9564
49	Escorts income bond-growth	1.289	1.519	2.0123
50	Escorts income plan-growth	0.003	0.009	2.1023
51	Kotak bond-deposit-growth	-0.040	-0.104	1.9567
52	Kotak bond-regular-growth	0.005	0.013	1.9823
53	LIC MF bond fund-growth	-0.048	-0.130	1.9234
54	Tata income fund-growth	0.011	0.028	2.1023
55	Sundaram bnp Paribas bond sa-growth	-0.118	-0.314	2.2657

Similarly, the outcomes of stock – selection performance of thirty (30) open – ended balanced schemes are presented in Table 2. It is observed from the table that twenty-one schemes (21) out of thirty (30) schemes have offered positive stock – selection performances and the remaining nine schemes (9) have offered negative stock – selection performances. The evidences of positive stock-selection performances are similar to the studies of Jensen<sup>61</sup>, Kon et al<sup>69</sup>, Chang et al<sup>21</sup>, Lee & Rahman<sup>74</sup>, Joydev<sup>60</sup> etc. It is also observed that four (4) schemes out of twenty-one (21) schemes have offered to the investor's statistically

significant stock – selection performances and the alpha values of those schemes are statistically significant at 5% level.

The evidence of statistically significant stock-selection performance is consistent with the studies of Redman et al<sup>93</sup>, Artikis<sup>9</sup> and Dhar<sup>29</sup>. The names of the four schemes are DSP Merrill Lynch Balanced Fund, GIC Balanced Fund, Tata Balanced Fund and LIC Mutual Fund Balanced Fund respectively. It is also found that the correlation coefficient between Jensen alpha ( $J_\alpha$ ) and the schemes' rate of return ( $R_i$ ) is positive (0.892) and statistically significant, which is said to be satisfactory. The average stock-selection performance of the open – ended balanced type of mutual fund schemes is 0.448, which is moderately well.

**Table. 2: Selectivity performance of the open-ended balanced schemes**

No	Scheme Name	$J_\alpha$	t-value	D-W
1	Alliance 95 fund-dividend	-0.012	-0.019	1.9769
2	Alliance 95 fund-growth	0.828	1.431	1.9612
3	Birla balance-plan A (Dividend)	-0.082	-0.165	1.8784
4	Birla balance-plan B (Growth)	0.357	0.823	2.2112
5	DSP Merrill Lynch balance fund-dividend	0.070	0.133	1.9783
6	DSP Merrill Lynch balance fund-grow	0.976	<b>2.256*</b>	1.9543
7	Franklin India balance fund-dividend	0.729	1.628	1.9445
8	Franklin India balance fund-growth	0.870	<b>2.070*</b>	1.9199
9	Templeton India child asst pl-education pl	0.127	0.371	2.1245
10	Templeton India pension plan-dividend	-0.476	-1.091	2.6789
11	Templeton India pension plan-growth	0.495	1.393	2.4634
12	GIC Balanced fund	0.816	1.673	1.9782
13	Ing Vysya balance fund-div. option	-0.008	-0.009	1.9572
14	Ing Vysya balance fund-growth	0.439	0.382	1.9745
15	JM Balanced fund-dividend	-0.004	-0.007	1.9666
16	JM Balanced fund-growth	0.409	0.423	1.9133
17	Kotak Balance	0.499	0.994	2.1191
18	Pnb balance growth fund-growth	0.841	1.615	2.1906
19	Pnb balance growth fund-income	0.862	1.570	2.0111
20	Principal balance fund(old)-dividend plan	-0.035	-0.048	2.1784
21	Prudential icici balance plan-dividend	0.034	0.067	1.9676
22	Prudential icici balance plan-growth opt	0.939	1.179	1.9192
23	Sundaram bnp Paribas bal fund-appreciation	1.036	1.447	1.9772
24	HDFC Children gift fund-investment	0.364	0.475	1.9102
25	All g-sec fund-long term DFC Children gift fund-saving	-0.286	-0.507	1.9981
26	Tata balanced fund	2.103	<b>2.303*</b>	1.8784
27	Escorts balanced fund-div. option	-0.352	-0.507	2.1342
28	LIC MF Balanced fund-dividend	1.892	1.444	1.9910
29	LIC MF Balanced fund-dividend	-0.442	-0.480	1.9873
30	LIC MF Balanced fund-growth option	0.908	<b>4.413*</b>	1.9205

## VI. CONCLUSION

In this study, different aspects of mutual fund performance are empirically examined. The empirical results in respect of return and risk are consistent with most of the past studies, which are already cited in the previous discussion through out this study. In respect of stock-selection and market-timing performances, it is observed that the Indian mutual fund managers are inefficient

to select the under priced securities and outguess the market statistically. In case of risk reduction, the managers have failed to reduce diversifiable risk through proper diversification. However, the mutual fund schemes have provided satisfactory returns to the investors. This may be happened by applying the strategy of simple buy and hold policy. In this particular issue, further research is needed to examine whether the Indian mutual fund managers are really applied their expertise skills to increase return when they have failed to prove themselves as superior stock pickers, superior market timers and in efficient in risk reduction.

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