

Performance Evaluation of Actively Managed Equity Mutual Funds: A Study of Actively Managed Funds v/s Index Investing

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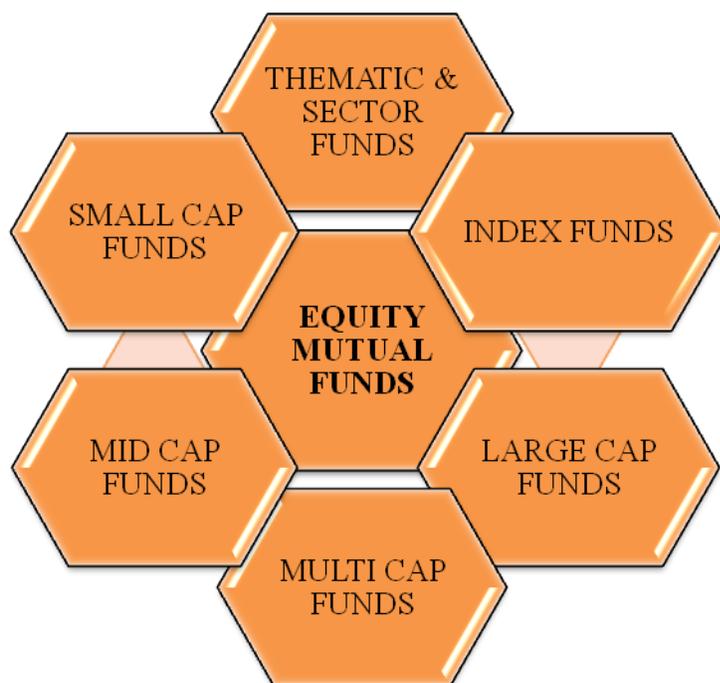
Abstract - There are several categories of equity mutual funds that are broadly classified as actively managed diversified funds and passively managed index funds. The debate whether to choose actively managed or passively managed funds has been the fulcrum of discussions across various industry stakeholders in the recent time. Investing in any asset class is to achieve superior return on investment and if the investment instrument is risky such risks should be compensated by way of higher returns. In developed countries index investing has been the flavor of investing from the time Jack C. Bogle (1999) familiarized low cost investing opportunities through index funds. India being a developing country the dynamics of mutual fund investing is quite different from the developed markets and what worked elsewhere may not work in Indian context. The objective of this paper is to statistically evaluate the performances of actively managed equity mutual funds and compare with Sensex as a passively managed index and arrive at the possibilities of understanding if actively managed funds are superior to passively managed index funds.

Keywords: Mutual Funds, Passively Managed Funds, Actively Managed Funds, Performance Evaluation, NAV, Return on Investment

I. INTRODUCTION

Mutual funds as an investing medium were introduced in India in 1963 by an Act of Parliament as UTI (Unit Trust of India) Act, 1963. The objective was part of “financial inclusion” initiative by the Government to bring people from across the stratum to participate in non-traditional investment opportunities such as equity markets and seek wealth creation possibilities. Professional fund management team was set-up by way of asset management companies to manage different types of debt, equity and hybrid portfolios that suit the risk and return objectives of different types of investors. The asset management companies were authorized to pool savings from common investors and invest based on research in debt and equity instruments by way of designing standardized portfolios. These portfolios first get categorized based on the market opportunities as perceived by professional fund managers who are entrusted with the fund management responsibilities. Under equity mutual fund portfolios the categories get broadly classified as displayed in Figure – 1:

Figure -1: Equity Mutual Fund Categories



Source: Self compiled from SEBI Mutual Fund Reclassification Circular dated 06.10.2017

From such categorization Index Funds are termed as “passive funds” that replicates the performance of the main indices such as Nifty and/or Sensex. Nifty 50 is the main benchmark index of The National Stock Exchange and Sensex 30 is the main benchmark index of The Bombay Stock Exchange commonly known as NSE and BSE. All other categories of funds are classified as “active funds” wherein the fund managers get free hand to pick and choose their choice of sectors and stocks and manage them actively. In case of passively managed index funds the performance directly reflects the performance of the index itself for a given period of time. On the contrary, the performance of actively managed equity funds gets benchmarked to the performance of the benchmark indices, Nifty or Sensex, and the returns are expected to be superior to the benchmark. In the latter case fund managers endeavor to outperform the index performance by actively managing the portfolio for the given period of time by utilizing their skills and expertise; the fund managers uses various tools and research aids to design and manage portfolios that are expected to outperform the index by a good margin. An illustration of an actively managed equity fund’s performance in comparison with Nifty as the benchmark is illustrated as Table – 1 below:

Particulars	CAGR Performance in %			
	1 year	3 year	5 year	Since Inception (12 years)
Scheme Performance	-16.99%	0.04%	4.10%	11.22%
Nifty 50 Performance	-18.62%	1.23%	3.93%	6.94%

Source: Self compiled from ICICI Prudential Mutual Fund May 2020 fund factsheet; the fund is a large cap oriented fund launched during May 2008; since inception performance is from May 2008 till May 2020

It can be observed from Table – 1 that for 1 year, 5 year and Since Inception the actively managed scheme has outperformed the index while for 3 years the index’s performance has been found to be superior. Such index beating performance is termed as generating “alpha” a risk measurement performance metrics introduced by Michael C. Jensen in 1968. Jensen professed that riskier assets should have higher expected returns than low risk assets. Since

investors who take risk by choosing to invest in risky assets their expectations of higher returns should be met by the fund managers by generating positive alpha. Jensen's Alpha formula is based on certain inputs:

Expected Returns – (risk-free returns + beta of the portfolio x (expected market return – risk-free returns))

The formula is also represented as: $\alpha = (R_p - [R_f + \beta_p \times (R_m - R_f)])$

α = Jensen's Alpha

R_p = Expected Portfolio Return

R_f = Risk Free Rate

β_p = Beta of the Portfolio

R_m = Expected Market Return

It is common across all actively managed equity mutual funds to display the alpha generated by the respective fund managers which also helps the investors to compare performances among the best fund managers who have better Alpha generating capabilities.

The paper endeavors to evaluate the performances of 27 actively managed equity mutual funds for period from December 1993 till March 2019 and compare with the performance of Sensex as a passively managed index. The performance evaluation has been done using the rupee-cost-averaging method or systematic investment plan (SIP) method of investing, which is to invest a fixed amount every month in select mutual fund schemes for specified period of time as measured through investment horizon.

II. REVIEW OF LITERATURE

Robert H. Mundheim and Brown (1967) opined that mutual fund managers try and gather every information about the companies they decide to invest as part of the equity portfolios that helps them to managing them with confidence. Fund managers endeavor to offer comparatively better returns over longer period of time by digging deeper into market opportunities that benefits the investors. Fund managers refrain from randomly picking stocks; instead they choose research based approach of portfolio management.

John L. Evans and Stephen H. Archer (1968) did a breakthrough research by arguing that the total risk as measured by the portfolio variance of returns declines as the number of securities in a portfolio increases; they proved that a randomly selected ten-stock portfolio would have less risk than a randomly selected three-stock portfolio. These two professed that more number of securities in a portfolio reduces the overall risk of a portfolio by introducing the concept of "strength in numbers."

John C. Bogle (1999, 2009) emphatically professed that time is the best friend of investors to achieve wealth creation in equity mutual funds. The performance of the economy of a country gets reflected in the performance of the stock markets and eventually with the performance of the equity mutual funds. One should choose long investment horizons such as 12 years and more to achieve investment success that negates the probability of losses. He also said that a diversified portfolio minimizes the inherent risks compared to buying individual stocks which are fraught with several risks for individual investors.

Peter L. Bernstein (1993) quotes that a dollar invested for 10 years at 5% compounds to becoming \$1.63; at 15% it compounds to \$4.05, but if invested just for a year it compounds only to \$0.92 and \$1.28. He says that for a period of one year the spreads are too narrow, but over longer investment horizons the spread gets better and profitable.

Jim Cramer (2014) says that choosing the term of investing should be based on the goals of investors rather than just terming investing period as long term since without goals terming a period of time cannot be long term. When an investor is able to define his investment horizon and chooses any specific investment instrument that should be termed as long term because the investor is in control of the specific event happening at the future date as specified by him.

MadhuSinha (2015) discusses the ideal asset allocation strategy for mutual fund investors which should be based on different risk profiles such as conservative, balanced, moderately aggressive and aggressive. She says that investors should choose the categories of mutual funds such as index, large cap, multi cap, mid cap and so on based on their individual risk profiles and also choose from different fund houses rather than investing in single categories and in single fund houses. She also opines that investors ideally should choose systematic investment plan method of investing which is the most effective investing method.

Benjamin Graham (1949) the author of *The Intelligent Investor* professes that equity as an asset class was designed to create wealth but one has to follow certain investing principles to attain success. Principles such as following dollar-cost-averaging (systematic investing) method, diversification across debt and equity, understanding oneself on the risk profile and understand how to benefit from market fluctuations (by choosing systematic investing mode).

Edward S, O’Neal (1997) opined that the expected dispersion in terminal-period wealth can be substantially reduced by holding multiple funds”, which means if investors invest in more than one category of mutual funds the profits can be maximized.

Leonard W. Ascher (1960) professed that dollar-cost averaging or systematic investing is high road to financial success; investors choosing to invest small amounts regularly regardless of entry level NAVs leads to healthy investment habit.

Bhavana Acharya (2017) opined that regardless of the categories of equity mutual funds the chances of losing money would diminish with longer holding periods. The performance of equity funds enhanced with five and more years of investment horizons compared with one to three years of investment horizons.

III. OBJECTIVES OF THE STUDY

1. To evaluate the performances of actively managed equity mutual funds
2. To evaluate the performance of Sensex as passively managed index in comparison with actively managed equity funds

IV. RESEARCH METHODOLOGY

From 44 asset management companies in India 11 asset management companies were considered from highest to lowest assets under management (AUM) in the descending order as on 31st March 2019. The chosen asset management companies list based on this basis of selection is displayed through Table - 2

1	Aditya Birla SL Mutual Fund	7	Kotak Mutual Fund
2	DSP Mutual Fund	8	L&T Mutual Fund
3	Franklin Templeton Mutual Fund	9	Nippon India Mutual Fund
4	HDFC Mutual Fund	10	SBI Mutual Fund
5	ICICI Prudential Mutual Fund	11	UTI Mutual Fund
6	IDFC Mutual Fund		

Source: www.amfiindia.com based on highest to lowest assets under management as on 31.03.2019

1. Ten large cap funds, eight multi cap funds, nine mid cap funds were picked from each of the eleven asset management companies mutual fund schemes.
2. Sensex as an index was selected for comparison.
3. The period of performance measurement has been from 1st December 1993 till 1st March 2019 on systematic investment plan basis
4. Rolling returns of the funds selected has been considered for the given period

V. STATISTICAL TOOLS USED

1. ANOVA – Single Factor
2. Two-way ANOVA

VI. HYPOTHESIS

H₀ Null Hypothesis: There is no significant difference in the returns of actively managed equity mutual funds and Sensex as passively managed index

H₁ Alternate Hypothesis: There is a significant difference in the returns of actively managed equity mutual funds and Sensex as passively managed index

VII. DATA ANALYSIS

- The analysis has one dependent variable by way of CAGR (compounded annualized gross return) that is measured at the continuous level.
- The analysis has four independent variables that consists of three categories of equity mutual funds and Sensex as an index
- There is no correlation between the categories of equity funds as their underlying portfolios of each categories are different; these are independent observations
- The dependent variable (CAGR) is approximately normally distributed for each group of the independent variable.

Performance of the chosen equity mutual funds and Sensex as an index are tabulated as Table – 3 for the investment horizon of 3 years to 25 years. The performance is measured on CAGR (compounded annualized gross return) basis based the net asset values (NAV) of each of the funds from 1st of every month on systematic investing basis; the returns are considered based on Rolling Returns.

Table – 3: Consolidated Performance for ANOVA results

Years	Large Cap Funds	Multi Cap Funds	Mid Cap Funds	Sensex
3 years	13.59%	15.93%	16.88%	10.16%
4 years	13.56%	17.09%	16.97%	10.42%
5 years	13.57%	17.23%	17.97%	10.88%
6 years	13.67%	16.76%	18.21%	11.23%
7 years	14.00%	16.77%	18.68%	11.29%
8 years	13.84%	16.91%	18.71%	11.81%
9 years	13.84%	17.12%	18.72%	12.51%
10 years	13.89%	16.77%	18.81%	13.20%
11 years	13.69%	16.53%	17.90%	13.41%
12 years	13.94%	16.37%	17.12%	13.53%
13 years	14.31%	15.94%	17.61%	13.41%
14 years	15.74%	17.56%	16.96%	13.14%
15 years	15.77%	18.90%	20.04%	12.83%
16 years	15.77%	19.10%	19.89%	12.92%
17 years	18.34%	19.01%	21.83%	12.64%
18 years	18.13%	19.92%	21.78%	12.34%
19 years	17.74%	19.85%	21.78%	12.23%
20 years	17.59%	19.75%	21.70%	12.14%
21 years	17.42%	20.44%	21.67%	11.95%
22 years	17.03%	20.35%	21.31%	11.59%
23 years	16.13%	20.01%	20.67%	11.52%
24 years	15.75%	19.27%	20.25%	11.49%
25 years	15.09%	NA	19.25%	11.10%

ANOVA – Single Factor results

Groups	Count	Sum	Average	Variance	Std. Dev.
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Large Cap Funds	23	3.52	15.32%	0.03%	1.68%
Multi Cap Funds	22	3.98	18.07%	0.02%	1.57%
Mid Cap Funds	23	4.45	19.33%	0.03%	1.76%
Sensex	23	2.78	12.08%	0.01%	0.98%

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.12	4.00	0.03	136.28	0.00	2.45
Within Groups	0.02	109.00	0.00			
Total	0.15	113.00				

Null Hypothesis: There is no significant difference in the returns across Large Cap, Multi Cap, Mid Cap Funds and Sensex

Alternate Hypothesis: There is significant difference in the returns across Large Cap, Multi Cap, Mid Cap Funds and Sensex

A one-way ANOVA was conducted to determine if the returns were same across different asset classes. The different asset classes considered were Large Cap Funds, Multi Cap Funds, Mid Cap Funds and Sensex. Returns increased from large to multi and then to midcap but the returns in Sensex were comparatively less, but the differences between these investment groups was statistically significant, $F = 136.28$, $p = .000$. Since there was sufficient statistical evidence **alternate hypothesis is accepted.**

VIII. FINDINGS

The purpose of choosing to invest in equity mutual funds is to be able to generate high return on investment compared to other investment opportunities. Within the equity mutual fund space there are actively managed and passively managed portfolios and the choice for common investors is to choose between these two types of possibilities. For the same investment horizon choosing to invest in such equity funds that has superior return offering capacity would be the ideal choice for investors. The study brings out the following findings:

- It was observed that returns are varying across different funds and categories; the reason behind such variation can be attributed to the fact that the portfolio composition of large cap funds, multi cap funds and mid cap funds widely differ from each other. The portfolio composition would be based on the type of investors who choose such portfolios based on their risk and return objectives.
- The variation in returns observed from Sensex as an index can be attributed to the fact that the portfolio within an Index doesn't change unlike in actively managed funds such as large cap, multi cap and mid cap funds. Index funds are categorized as passive funds by the mutual fund industry.
- Choosing to invest in actively managed equity funds offer better return on investment possibilities compared to passively managed funds such as index funds.

IX. SOCIAL IMPACT

Individual or retail investing in India is largely ill-organized. The functioning of the economy in general and the operational performance of listed companies on the stock exchanges in particular are difficult to track and decipher for an individual investor. The savings of the investors should be deployed prudently and achieve real returns. This calls for a professional framework for investing; here comes the role of mutual funds. The individual investors would get not only the professional service of mutual funds but also realise the hidden benefits like:

(a) Participation in corporate actions such as bonuses, dividends, rights, stock splits, buyback, delisting and so on to realize maximum return on investment.

(b) Participating in subscribing to Initial Public Offers (IPOs) of highly graded issues. This is possible as mutual funds have preferential allotment of shares.

X. CONCLUSION

India is a country with young population with a potential to deliver more in the years to come. India's capital market is under exploration. Therefore, there is all the opportunity to build a portfolio of stocks with a specialized expertise. As mutual funds are managed by the professionals, the individual or retail investors would do well if they invest in the market through the mutual funds to realise the alpha, i.e., excess return over the index. The objective of actively managed equity mutual funds is to offer superior return on investments to investors who seek to create wealth through equity related instruments.

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