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SEBI Asks Mutual Funds To Rename Their Schemes; Do Mutual Funds Follow Their Benchmarks?

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Abstract: **This paper is intended to interpret the relationship between mutual fund returns to their respective benchmark returns. For this purpose, top performing nine Indian equity mutual funds have been considered and data was collected for the duration of 10 years from 2008 to 2017. Simple linear Regression is used to understand the performance of mutual funds against their benchmark. There is sizable deviation of the mutual fund performance against their benchmark, especially in mid-cap segment.**

Keywords: **Mutual funds, benchmarks, deviation from benchmark, returns, regression, time series.**

1. INTRODUCTION

A Mutual Fund is a trust registered with the Securities and Exchange Board of India (SEBI) which basically pools up the money from individual/corporate investors and then invests the same on behalf of the investors/units holders, in equity shares, government securities, bonds, call money market etc .This money is managed by a professional fund managers and the income earned through these investments and the capital appreciations realized are shared by its unit holders in proportion to the number of units owned by them. This pooled income is professionally managed on behalf the unit-holders, and each investor holds a proportion of the portfolio. Investor choose to invest in mutual funds because direct investment in the market is risky and needs good financial exposure.

Mutual funds are of three types.

Open ended funds: This is fund which is available for subscription and redemption on a continuous basis. Investors who invest in these funds can buy and sell units of mutual funds at prices which are declared on daily basis. **Closed ended funds**: These funds have as stipulated period which can vary from a few months to few years. This fund is open for subscription only during a specified period at time of its launch. **Interval funds**: These funds are a combination of open ended and close ended funds and they are open for purchase and sale during pre-specified intervals.

If a scheme of the mutual fund that we have invested in delivers higher returns than the benchmark, it is said to have outperformed and vice-versa. Understanding by its literal meaning with respect to financial investments, a benchmark represents a standard against which we measure the performance of a mutual fund, security or an investment manager. In the frame of reference of mutual funds per se, it's a point of reference that speaks about a mutual fund's performance as against the market and its peers. The SEBI (Securities and Exchange Board of India) has made it mandatory for all mutual fund houses to declare their respective benchmark indices.Thus, all mutual fund schemes, be it equity or debt funds, chose and declare their own benchmarks. For instance, Nifty and BSE Sensex are the most widely used benchmarks for the large cap equity mutual funds in India. Some of the other regularly used benchmarks for equity funds are Nifty 500, Nifty Next 50, Nifty 100 etc. Benchmark returns sets a standard for us to make comparison, it basically indicates what the fund has earned against what it should have earned. Also comparing a portfolio's returns to a benchmark is a way to measure a portfolio manager's skill too.

2. LITERATURE REVIEW

Dr J K Raju, Mr Manjunath B R and Mr Nagaraja G M (2015)have evaluated performance of the Indian mutual funds by taking various variables such as Sharpe ratio, Jensen ratio, Treynor's ratio etc and showed returns higher than other investment options. (Dr J K Raju, November 2015)

Megharaja B and Dr Chalawadi CI in their study have studied the performance of ten equity mutual funds and majority of the funds have performed better than stock market and majority of them has positive correlation and highly positive linear relationship among various funds. (Megharaja B, February 2017)

Aayush Jain (2016) shows the partial co-movement between mutual funds and their benchmark index in form of econometric loop. The mutual funds and their indices were normally distributed and were stationary and not auto correlated and was homoscedastic. (Jain, 11-Oct-16)

Les Coleman (2017) opines that the net return of average mutual funds in most of the countries is below the benchmark and for fund managers are weakly directed towards maximising fund return and gains made by mutual funds and finance firms are high relative to their economic contribution.(Coleman, 16th February 2017)

Shivangi Agarwal and Nawazish Mirza have considered 100 mutual funds for a duration of four years and evaluated based on absolute returns, daily returns, average daily returns, annualized average returns, standard deviation, daily standard deviation, sharps ratio, treynors ratio, value at risk etc and funds have been ranked. It is found that sharpe and treynors measure show that funds have outperformed their benchmark. (Shivangi Agarwal, RIC)

Syed Hussain Ashraf and Dhanraj Sharma (2014) have made an attempt to conduct regression analysis on ten equity Indian mutual funds to analyse the performance with their respective benchmark return for a period of five years. Their study shows that influence of market factors closely effects the behaviour of the returns of the mutual funds and equity mutual funds have been outperformed the market benchmark indexes. (Sharma, 2014)

E. Priyadarshini and A.Chandra Babu (2012) in their research paper day that the use of neural network technique in forecasting the net asset value of the mutual funds has outperformed multiple regression analysis and this is based on MAE, MSE, RMSE, MAPE, MPE. (Babu, October 2012)

Inderjit Kaur(2009) says mutual funds as an investment alternatives isn't been a choice among investors in India. It has been seen that 7-8 percent investment under asset under management compared 36 percent worldwide. The research conducted at Delhi explained the perception and awareness of investors regarding investment in mutual funds. (Kaur, 2009)

B. P. S Murthty (1997) says that the performance of the portfolio is important in the area of research. The most popular indices of measuring the performance of the portfolio is jensen's alpha and sharpe index but these have its own disadvantages. A new measure is employed using a method called data envelopment analysis and the benefits of the measure is explained and the results show that mutual funds are all mean variance efficient. (Murthty, April 1997)

Md. Shahadath Hossain, A.B.M. Munibur Rahman, Md. Salah Uddin Rajib (2013) have explored the dynamics of mutual funds with relation to stock market. The variables considered are index return, the general index turnover, mutual fund returns, mutual fund turnover. Unit root test, Johnsen cointegration test and granger causality test have been made. (Md. Shahadath Hossain, 2013)

Mark Grinblatt and Sheridan Titan (1992) say persistence in mutual fund performance cannot be explained by inefficiencies in benchmark related to size of firm, past returns, skewness, beta etc. past performance can be helpful for investors wanting to invest in mutual funds. (Titan, December 1992).

Kent Daniel, Mark Grinblatt, Sheridan Titaman and Russ Wermers (1997) have introduced characteristic based benchmark that can be used to measure if mutual funds pick stocks which outperform in the market. (Kent Daniel, 1997)

Ruiz, Sofia Monjas, Manuel (2012) say that the benchmark of a security is a reliable and consistent measure of multiple dimensions of performance: return, risk and correlation. The study showed that among the six indices considered, Ibex-35 was the most accurate and used widely as a benchmark in this market and 70 of the mutual funds were considered. (Ruiz, 2012)

Hao Jiang, Marno Verbeek, Yu Wang (2014) report that a huge amount of investment in active mutual funds and stocks that are overvalued by active funds in respective to their benchmark perform better than undervalued stocks and t outperformance is higher in stocks which provide with company information to the public and investing activities are consistent when information is let out to the investors. (Hao Jiang, 8, August 2014)

Simran Saini, Dr Bimal Anjum, Ramandeep Saini (2011) say that many factors are been considered by the investor before investing such as consistency, stability etc and the returns from the funds have a great impact on the mindset of the investors. Majority of the investors prefer absolute return of funds and returns from similar funds as criteria to evaluate the performance of the funds. (Simran Saini, May 2011)

Andreas G F Hoepner,Hussain G Rammal, Michael Rezec (2009) studied strongly growing lslamic fund based on 256 Islamics equity funds from around 20 countries. It was ascertained that Islamic funds displayed superior learning in more developed Islamic financial markets compared to Islamic funds from Western nations with less Islamic assets tend to significantly underperform. Islamic funds' investment are more inclined towards growth stocks especially funds from predominantly Muslim economies showed a clear small cap preference. These results are consistent over time and robust to time varying market exposures and capital market restrictions.(Andreas G F Hoepner, August 2009)

Stanley J Kon ,Frank C Jen (1979) relied more on the Efficient Market Hypothesis to evaluate the mutual fund stock selectivity performance and their implications. Sharp Lintner-Mossin and Black models of market equilibrium are employed as the benchmarks.(Stanley J Kon, April 1979)

Vanessa Simen Tchamyou and Asongu Simplice (2017) in their study talks on the restrictive market timing in the mutual fund industry is surveyed by determinants of market timing all through the conditional distribution of market exposure. The investigation expands on the instinct that the level of responsiveness by the fund managers to elements, for example, total liquidity, data asymmetry, unpredictability and market excess returns is dependent upon their levels of market exposure. (Vanessa Simen Tchamyou, DEC 2017)

Venkatesh Kumar and Ashwini Kumar (2012) considered equity linked fund and its indices in Bombay stock exchange and estimated risk adjusted abnormal returns which showed predictive ability of fund managers with the help of CAPM estimating Tracking error volatility of excess daily returns between the fund and its benchmark and it was seen that large, mid, and small capwould be appropriate benchmark for evaluating the performance of the fund. (Kumar, 2012)

Rajesh Kumar, R S Arora (2012)said regions of Punjab found huge number of respondents invested in open ended mutual funds and majority in private sector mutual funds and these were in the form of systematic investment plan and performance was compared with benchmark. (Rajesh Kumar, Mutual fund investments: A study of investors Behaviour, 2012)

3. RESEARCH METHODOLODGY

Objectives of the Study:

- To understand the fund manager's investment style for top three mutual funds in specific categories.
- To measure the magnitude of the relationship of mutual funds performances against their benchmarks.

Data Source:

For the purpose of this study we relied exclusively on secondary data cumulated form a dependable source. NAV(net asset value) of the chosen mutual funds is taken from the website of AMFI (Association of mutual funds in India) and data regarding the closing value of the respective indices is either taken from the BSE or NSE official website.

Selection of funds:

Open ended mutual funds are chosen as this scheme is available for purchase and redemption on a continuous basis. On the basis of investment objectives mutual funds are further classified into equity funds, debt funds, balanced funds, thematic funds, sector funds, index funds, gilt funds, arbitrage funds etc. Top performing equity mutual funds based on their returns and time horizons are chosen as the main objective of these funds is to provide capital appreciation and investors opt for these funds with a long-term investment horizon and with a higher risk appetite.

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S.No	Fund Name	Type	Benchmark	Launch Date
1.	ICICI Prudential Value Discovery Fund	Large Cap	S&P BSE 200	August 8, 2007
2.	Reliance top 200 fund	Large Cap	S&P BSE 500	August 16, 2004
3.	SBI blue chip fund	Large Cap	S&P BSE 100	February 14, 2006
4.	Franklin India Prima fund	Mid Cap	Nifty 500	December 1, 1993
5.	HDFC Mid Cap Opportunities Fund	Mid cap	Nifty free float Mid cap 100	June 25, 2007
6.	Kotak emerging equity scheme	Mid cap	S&P BSE mid small cap	March 30,2007
7.	L&t emerging businesses fund	Small Cap	S&P BSE Small Cap	May 2014
8.	Franklin India Smaller companies Fund	Small Cap	Nifty Free Float Midcap 100	January 13, 2006
9.	SBI Small and mid cap fund	Small Cap	S&P BSE Small Cap	September 09, 2009

Time Period:

Time period of 10 years (from January 2008 to December 2017.) is taken for the study.

Statistical Techniques and tools:

The study considers the time series of mutual funds returns and its respective benchmark returns. In agreement to this, the time series was kept stationary to churn regression analysis of the data. Eviews 9.5 software and Excel is used for the time series and regression analysis for the testing mutual funds respectively.

4. RESEARCH FINDINGS

Unit root test check whether the time series are stationary. If the time series is stationary it signifies that the change in time will not cause change in properties such as mean, variance etc. This test is conducted by choosing Schwarz Information Criteria with optimal lag length.

Result of Augmented dickey-Fuller test (Stationarity Test)

S.No	Fund Name	Mutual Fund Return		Benchmark Return	
		t statistic	p-value	t statistic	p-value
1.	ICICI Prudential Value Discovery Fund	-21.8554	0.0000	-22.8878	0.0000
2.	Reliance top 200 fund	-23.1154	0.0000	-23.0386	0.0000
3.	SBI blue chip fund	-22.7746	0.0000	-23.1461	0.0000
4.	Franklin India Prima fund	-22.0158	0.0000	-23.0962	0.0000
5.	HDFC Mid Cap Opportunities Fund	-21.6867	0.0000	-22.2711	0.0000
6.	Kotak emerging equity scheme	-26.5311	0.0000	-21.8167	0.0000
7.	L&t emerging businesses fund	-22.3011	0.0000	-22.2711	0.0000
8.	Franklin India Smaller companies Fund	-16.0514	0.0000	-7.4914	0.0000
9.	SBI Small and mid cap fund	-17.2516	0.0000	-7.9749	0.0000

Null Hypothesis, H0 – Time series is non-stationary

Alternative Hypothesis, H1- Time series is stationary

Since p-value of all mutual fund returns and benchmark returns is less than 0.05,null hypothesis is rejected. Hence we can say time series is stationary and regression analysis can be carried on.

Regression result of ICICI Prudential Value discovery fund with its benchmark.

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.891
R Square	0.793
Adjusted R Square	0.793
Standard Error	0.005
Observations	2456.000

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1.000	0.270	0.270	9426.648	0.000

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Residual	2454.000	0.070	0.000					
Total	2455.000	0.340						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.223	0.008	27.865	1E-148	0.207	0.239	0.207	0.239
Index returns	0.777	0.008	97.091	0	0.762	0.793	0.762	0.793

From the above table significance value is 0.000 which is below 0.05 which means to say that model is a good fit. 79% of the variation of the mutual fund returns is explained by benchmark returns.

Regression result of Reliance Top 200 fund with its benchmark.

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.957
R Square	0.915
Adjusted R Square	0.915
Standard Error	0.004
Observations	2456.000

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1.000	0.412	0.412	26388.952	0.000
Residual	2454.000	0.038	0.000		
Total	2455.000	0.450			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.000	0.000	3.236	0.001	0.000	0.000	0.000	0.000
Index returns	0.942	0.006	162.447	0.000	0.930	0.953	0.930	0.953

Since the significance P Value <0.05, this means model is a good fit.91.49% of the variation of the mutual fund returns is explained by benchmark returns

Regression result of SBI Blue Chip fund with its benchmark.

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.974
R Square	0.949
Adjusted R Square	0.949
Standard Error	0.003
Observations	2441.000

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1.000	0.366	0.366	45264.834	0.000
Residual	2439.000	0.020	0.000		
Total	2440.000	0.386			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.000	0.000	3.542	0.000	0.000	0.000	0.000	0.000
Index returns	0.854	0.004	212.755	0.000	0.846	0.862	0.846	0.862

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Since the significance P Value <0.05, this means model is a good fit.95% of the variation of the mutual fund returns is explained by benchmark returns

Regression result of Franklin India Prima fund with its benchmark.

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.888
R Square	0.788
Adjusted R Square	0.788
Standard Error	0.006
Observations	2454.000

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1.000	0.283	0.283	9102.108	0.000
Residual	2452.000	0.076	0.000		
Total	2453.000	0.359			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.000	0.000	3.257	0.001	0.000	0.001	0.000	0.001
Index returns	0.795	0.008	95.405	0.000	0.779	0.812	0.779	0.812

Since the significance P Value <0.05, this means model is a good fit.78.78% of the variation of the mutual fund returns is explained by benchmark returns

Regression result of HDFC mid cap opportunities fund with its benchmark.

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.931
R Square	0.867
Adjusted R Square	0.867
Standard Error	0.004
Observations	2455.000

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1.000	0.261	0.261	16010.674	0.000
Residual	2453.000	0.040	0.000		
Total	2454.000	0.301			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.000	0.000	5.542	0.000	0.000	0.001	0.000	0.001
Index returns	0.750	0.006	126.533	0.000	0.739	0.762	0.739	0.762

Since the significance P Value <0.05, this means model is a good fit. 86.71% of the variation of the mutual fund returns is explained by benchmark returns.

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Regression result of Kotak emerging equity fund with its benchmark.

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.492
R Square	0.242
Adjusted R Square	0.241
Standard Error	0.018
Observations	3682.000

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1.000	0.401	0.401	1172.527	0.000
Residual	3680.000	1.259	0.000		
Total	3681.000	1.660			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.000	0.000	-0.190	0.850	-0.001	0.001	-0.001	0.001
Index returns	0.821	0.024	34.242	0.000	0.774	0.868	0.774	0.868

Since the significance P Value <0.05, this means model is a good fit. 24.16% of the variation of the mutual fund returns is explained by benchmark returns.

Regression result of L&T emerging businesses fund with its benchmark.

Regression Statistics	
Multiple R	0.911
R Square	0.830
Adjusted R Square	0.830
Standard Error	0.005
Observations	2456.000

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1.000	0.312	0.312	11984.170	0.000
Residual	2454.000	0.064	0.000		
Total	2455.000	0.376			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.000	0.000	3.361	0.001	0.000	0.001	0.000	0.001
Index returns	0.820	0.007	109.472	0.000	0.806	0.835	0.806	0.835

Since the significance P Value <0.05, this means model is a good fit. 83% of the variation of the mutual fund returns is explained by benchmark returns

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Regression result of franklin India smaller companies fund with its benchmark.

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.01085
R Square	0.000118
Adjusted R Square	-0.00101
Standard Error	0.009977
Observations	891

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1.04E-05	1.04E-05	0.104662	0.746382
Residual	889	0.088496	9.95E-05		
Total	890	0.088506			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.001359	0.000652	2.085429	0.037315	8E-05	0.002638	8E-05	0.002638
Index return	-1.8E-08	5.64E-08	-0.32351	0.746382	-1.3E-07	9.24E-08	-1.3E-07	9.24E-08

Since the significance P Value > 0.05, this means model is not a good fit. 0.018% of the variation of the mutual fund returns is explained by benchmark returns

Regression result of SBI small and mid cap fund with its benchmark.

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.037005
R Square	0.001369
Adjusted R Square	0.00038
Standard Error	0.009551
Observations	1011

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.000126	0.000126	1.383626	0.239762
Residual	1009	0.092034	9.12E-05		
Total	1010	0.09216			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.002035	0.000507	4.012416	6.45E-05	0.00104	0.003031	0.00104	0.003031
Index return	-5.5E-08	4.67E-08	-1.17628	0.239762	-1.5E-07	3.67E-08	-1.5E-07	3.67E-08

Since the significance P Value > 0.05, this means model is not a good fit. 0.136% of the variation of the mutual fund returns is explained by benchmark returns

5. CONCLUSION

Considering top performing mutual funds in all the three categories (that is Large, mid and small cap) and analysing their ten years of data for daily returns through Regression analysis unit root test, where data of one time series was compared against another time series. The unit root test for all the selected mutual funds and their benchmark conveys that the times series do not have unit root which emphasizes the fact they are stationary in nature. From the study we could say that funds have performance in consonance with their respective benchmark returns, however, Kotak emerging equity scheme a mid cap mutual fund is around 24 % in line to its benchmark S&P BSE Mid Cap Index, on the other hand L&T emerging businesses fund scheme which is a small cap mutual fund follows its benchmark S&P BSE small cap by just 0.018%. Similarly, SBI small and mid-cap fund a small cap mutual fund is only 0.136% of S&P BSE small cap. Clearly there is sizable deviation of the mutual fund performance against their benchmark.

Suggestions for further research:

The current study is confined to only top performing equity funds. Further study can be done with mutual funds with another category.

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