Secondary Market Bench Impact on Mutual Fund Industry

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Introduction

Performance evaluation theory stresses the importance of using good benchmarks (Holmstrom, 1979). For example, when determining an airline CEO's bonus, comparing the firm's performance to that of other airlines can improve efficiency by helping to filter out common stocks that are beyond the CEO's control. It would be less efficient to use railroads as the benchmark instead because shocks to the two industries are not perfectly correlated, yet the CEO has an incentive to encourage the use of a railroad benchmark if he believes that airlines are likely to outperform railroads. Of course, the attempt is unlikely to succeed in this setting because a knowledge- able corporate board of directors will realize that railroads are not the best benchmark. The financial services landscape is transforming, with a plethora of changes taking place on the regulatory front. Against this backdrop, asset management companies (AMCs) realise that they need to re-structure their businesses in order to meet the evolving needs of their clients and provide them with complete investment solutions. Although emerging markets such as India provide a wide range of opportunities, it is important to tap into these avenues to fuel the growth of the mutual fund industry.

Review of Literature

Berk A. Sensoy (2009) studies almost one-third of actively managed, diversified U.S. equity mutual funds specify a size and value/growth benchmark index in the fund prospectus that does not match the fund's actual style.

Rupeet Kaur (2012) the study on the return analysis reveals that growth schemes performed better as compared to dividend schemes when evaluate to the benchmark. Whereas the dividend schemes are more volatile as compared to the growth schemes. It is found that only 44 percent growth schemes performed better according to Sharpe, Treynor and Jensen measures. On the basis of R2, the schemes are well diversified which reduced the unsystematic risk. However, the funds are found to be poor in earning better returns either adopting marketing or in selecting under priced securities

Shalini Sharma Arti Gaur and Nancy Arora (2014) Under this study To evaluate the return with risk associated in the mutual fund and compares the performance of various mutual fund schemes on the basis of benchmark index so as to bring out whether the scheme is outperforming or underperforming the benchmark is measured by using secondary data Sharpe's and Treynor's portfolio performance measure is used to find the risk premium of portfolio relative to the total amount of risk in the portfolio. The reveals that in India almost every sector is likely to witness a huge growth going forward.

Objective of the study

1.To measure the correlation between number of schemes with benchmarks and assets under management.
2.To measure the impact of benchmarks of equity and debt on number of schemes.
3.To measure the benchmark impact on asset under management of equity and debt market.
4.To measure the impact of number of schemes on asset under management.

Research Methodology:

Nifty – NSE India
Composite bond index – NSE India
No. of schemes of both debt and equity,
Total assets under management of debt and equity

Pearson bi-variate correlation formula:-

$$r = \frac{\Sigma fuv - \frac{(\Sigma fu)(\Sigma fv)}{n}}{\sqrt{\Sigma fu^2 - \frac{(\Sigma fu)^2}{n}} \times \sqrt{\Sigma fv^2 - \frac{(\Sigma fv)^2}{n}}}$$

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Pearson's correlation coefficient between two variables is defined as the covariance of the two variables divided by the product of their standard deviation. The form of the definition involves a "product moment", that is, the mean (the first moment about the origin) of the product of the mean-adjusted random variables; hence the modifier *product-moment* in the name.

ANOVA Formula:-

$$SS_{total} = \sum_{j=1}^{p}\sum_{i=1}^{n_j}(x_{ij} - \bar{x})^2$$

$$SS_{between} = \sum_{j=1}^{p} n_j(\bar{x}_j - \bar{x})^2$$

$$SS_{within} = \sum_{j=1}^{p}\sum_{i=1}^{n_j}(x_{ij} - \bar{x}_j)^2$$

Analysis of variance is a method for decomposing variance in a measured outcome in to variance that can be explained, such as by a regression model or an experimental treatment assignment, and variance which cannot be explained, which is often attributable to random error.

The Granger causality test: It is a statistical hypothesis test for ascertaining whether one time series can be used for forecasting another time series. It is originally considered that regressions reflect "mere" correlations, but Clive Granger on the other hand argued that causality in economics could be reflected by measuring the ability of predicting the future values of a time series using historical values of another.

$$\mathbb{P}[Y(t+1) \in A | \mathcal{I}(t)] \neq \mathbb{P}[Y(t+1) \in A | \mathcal{I}_{-X}(t)]$$

Johansen test: It is used for co integration that allows for more than one co integrating relationship i.e. large data samples. Therefore this test is more generally applicable than the Engle–Granger test which is based on the Dickey–Fuller (or the augmented) test for unit roots.

$$X_t = \mu + \Phi D_t + \Pi_p X_{t-p} + \cdots + \Pi_1 X_{t-1} + \epsilon_t, \quad t = 1, \ldots, T$$

SCOPE: The study has been emphasized on 15 years data (2000-14) asset under management of equity , and debt has been considered of 46 mutual funds asset management companies from national stock exchange, Equity and debt benchmarks are considered.

1. **Objective:**

		EquitySchemes	Nifty	CBI	EquityAUM	DebtAUM	DebtSchemes
EquitySchemes	Pearson Correlation	1	.704**	-0.476	.644*	.647*	.801**
	Sig. (2-tailed)		0.005	0.086	0.013	0.012	0.001
	N	14	14	14	14	14	14
Nifty	Pearson Correlation	.704**	1	-.856**	.967**	.861**	.886**
	Sig. (2-tailed)	0.005		0	0	0	0
	N	14	14	14	14	14	14
CBI	Pearson Correlation	-0.476	-.856**	1	-.878**	-.616*	-.574*
	Sig. (2-tailed)	0.086	0		0	0.019	0.032
	N	14	14	14	14	14	14
EquityAUM	Pearson Correlation	.644*	.967**	-.878**	1	.837**	.823**
	Sig. (2-tailed)	0.013	0	0		0	0
	N	14	14	14	14	14	14
DebtAUM	Pearson Correlation	.647*	.861**	-.616*	.837**	1	.901**
	Sig. (2-tailed)	0.012	0	0.019	0		0
	N	14	14	14	14	14	14
DebtSchemes	Pearson Correlation	.801**	.886**	-.574*	.823**	.901**	1
	Sig. (2-tailed)	0.001	0	0.032	0	0	
	N	14	14	14	14	14	14

Interpretation: Bi variant correlation has been applied on equity and debt benchmarks, with asset under management and schemes .this result indicates that CBI is negatively correlated with nifty and equity schemes. Asset under management of debt and schemes were also moderately negatively correlated with

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that debt benchmark, Equity benchmark is having strong correlation with rest of the variables during the study period.

2. To measure the impact of benchmarks of equity and debt on number of schemes.

Co integration test:

LL RANK VALUES	Data Trend:	None	None	Linear	Linear	Quadratic		
	Rank or	No Interce	Intercept	Intercept	Intercept	Intercept	A I C	SIC
	No. of CEs	No Trend	No Trend	No Trend	Trend	Trend		
NIFTY vs. schemes	0	-158.266	-158.266	-157.503	-157.503	-156.328	29.50297	29.64766
	1	-156.058	-152.194	-151.534	-151.127	-149.989	29.82877	30.11815
	2	-155.907	-151.505	-151.505	-148.686	-148.686	30.52849	30.96256
CBI vs. schemes	0	-102.695	-102.695	-102.594	-102.594	-101.493	19.39903	19.54371
	1	-94.6677	-91.7272	-91.643	-90.789	-89.9615	18.66685	18.95623
	2	-93.5384	-86.0409	-86.0409	-84.3262	-84.3262	19.18881	19.62288

Interpretation: Johansson co integration test has been applied between nifty and CBI to number of schemes. The result unveils that log likelihood rank values were in decreasing trend in both non and linear model along with the quadratic AIC and SIC criteria's were also satisfied in all trend models this analysis indicates that data is co integrated between CBI and no. of schemes of equity and debt markets.

Granger causality test:

Null Hypothesis:	Obs	F-Statistic	Prob.
EBTSCHEMES does not Granger Cause CBI	11	0.47242	0.6449
CBI does not Granger Cause DEBTSCHEMES		3.07796	0.1203

Interpretation: The granger causality test has been applied to measure the nifty benchmark on number of equity schemes ,the probability value of granger 0.71>0.5 indicates that null hypothesis is rejected and accept the alternative hypothesis .Hence this probability depicts that equity schemes were influenced by the equity benchmark.

3. To measure the benchmark impact on asset under management of equity and debt market.

Model Summary	
Multiple R	0.9
R Square	0.81
Adjusted R Square	0.775
Std. Error of the Estimate	0.025
Log-likelihood Function Value	-34.484

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	0.03	2	**0.015**	23.446	0
Residual	0.007	11	**0.001**		
Total	0.037	13			

Coefficients	ndardized Coeffi	Standardized Coefficients				
	B	Std. Error	Beta	Std. Error	T	Sig.
(Constant)	133.796	1.622			82.487	0
EquityAUM	0	0	**-1.205**	0.234	-5.152	0
DebtAUM	1.32E-05	0	**0.404**	0.234	1.727	0.112

Interpretation: Regression weight estimation has been applied to measure the nifty benchmark impact on equity and debt mutual fund assets, the R^2 is 95%>60, which indicates that the relation is highly stronger probability value is found to be significant. This analysis indicates that equity benchmark influence is observed on both the segments of mutual fund assets that is equity and debt.

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4. To measure the impact of number of schemes on asset under management.

LL rank values	Rank or	No Intercept	Intercept	Intercept	Intercept	Intercept		
	No. of CEs	No Trend	No Trend	No Trend	Trend	Trend	AIC	SIC
	0	-212.4936	-212.494	-212.489	-212.489	-212.404	43.29873	43.41976
	1	-203.9965	-202.644	-202.643	-202.559	-202.548	42.39930	42.64137
	2	-200.3882	-198.883	-198.883	-198.498	-198.498	42.47764	42.84074

Null Hypothesis:	Obs	F-Statistic	Prob.
ASSETUNDERMGT does not Granger Cause SCHEMES	10	1.95328	0.2361
SCHEMES does not Granger Cause ASSETUNDERMGT		0.13022	0.8808

Interpretation: The above analysis of Johansson co integration test has been applied on the stationary data between number of schemes and asset under management of equity and debt market and The result shows that log likelihood rank values were observed in decreasing trend in both linear and quadratic model.log with the alpha level, this indicates that data is co integrated between these two variables

The above analysis of granger analysis test result unveils that null hypothesis (h0) is rejected because the probability value 0.88>0.5 and accepts the alternative hypothesis, this test shows that number of schemes of equity and debt are causing the assets under management in mutual fund segment.

Conclusion:

We conclude the analysis of benchmark impact on equity and debt mutual funds. In this study, we had considered composite bond index of NSE as the benchmark for the debt instruments. Nifty has been considered equity benchmark. Asset under management companies which were approved by the SEBI has been considered to measure the benchmark impact on mutual funds, which indicates that no, of schemes and asset under management of equity and debt market .The analysis had proven that asset under management were impacted by the benchmark. The no. of schemes of equity are affected by the nifty but composite bond index failed to influence the new debt schemes. Hence there is a scope to do research in this area, by considering various economic factors, which influence the mutual fund asset performance.

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