Stocks in Ethical funds – Optimal Investment Alternative for retail investors

Dr. J.K.Singh
Associate Professor in Commerce Department
Aryabhatta College, University of Delhi

Abstract

The concern of society with regard to environmental , social and governance issues is now no longer confined to theory but its traces are visible in the performance of stock prices of reputed companies. More than twelve trillion dollars have been invested by the end of the year 2017 according to SRI (Sustainable, Responsible and Impact Investing) strategies as revealed by the US SIF Foundation's 2018. The phenomena is gradually spreading over to investment strategies of various other emerging economies like India leading to emergence various new financial instrument like ESG funds, ethical funds and green bonds. This study aims to examine the emergence of new strategies of portfolio managers with special emphasis on analyzing difference in returns offered by a security included in ethical fund (Cipla Ltd.) with a security outside the ethical fund (Sun Pharma Ltd.). Stocks of Pharmaceutical sector has been purposely considered for the study as the sector is generally been preferred choice for long term and conservative investors in Indian Stock market. The study will also assess the return of securities relative to the return offered by the Nifty Pharma index and determine the reasons of differential return. Various statistical tests such as Kolmogorov Smirnov, Levene's test , ANOVA, Multiple comparison , etc. have been employed on the data for the period 2014 to 2018 to arrive at meaningful conclusion.

Keywords: Portfolio Management, ESG, Socially responsible investing (SRI), K-S test, Levene's Statistic, ANOVA, , Ethical Fund.

Introduction

The performance of stock of any company in the stock market is determined by various factors which are specific to the company and as well to the entire market or the industry to which the company belongs. The former constitute unsystematic risk and the latter forms systematic risk. The fund managers as well as long term investors while designing their investment strategies applies their best estimates in quantifying possible erosion in their wealth in the adverse scenario emerging due to non performance of the companies or reaction of market on account of any bad news. Thus, an attempt to constitute the portfolios of stocks with minimum risk is a continuous process and requires revision from time to time. In the recent past, change in investment practice has been observed with a preference for stocks of companies focusing on environment, governance and social issues as they are finding place in portfolios of large institutional investors and portfolio managers. The portfolio managers not only considers the performance of the company for the purpose of investment in stocks rather the contribution of the company in improving the external environment and ecosystem surrounding it. Among all the important variables determining price of a share, the role of corporate governance is being observed as significant. The companies struggling with any kind of corporate governance issue , big or small, may face difficulty in convincing the investors' community and restoring their confidence. Over last one decade , several companies have been on radar for issues concerning corporate governance which has gradually led to massive erosion in shareholders' wealth. In such a scenario, it is safe for long term and conservative investors to stay with stocks appearing in the portfolio of ethical funds.

Review of existing Literature

Several studies have been conducted on analyzing performance of stocks , determining key variables affecting stock prices, change in investor behavior, etc. over different point of time. As the present study focuses on bearing of environment, social and governance issues on stock prices, limited literature is available on the subject. However, the contribution of some of the researchers is the areas related to it such Corporate Social Responsibility , ESG portfolio, etc are very informative and provides scope for further research. Roger Schillerstrom(2017) , in the editorial section of Pension and Investment dated September 18 , 2017, discussed the requirement of environment , social and governance issues in investment decision making process. In his research , he explained that such issues does affect the returns rather helps in minimizing the risk of investment in portfolio constituted of such securities. According to Emiel, Auke and Bert (2016) , many conventional managers are moving towards integration of responsible investing in their investment process. Capelle-Blancard and Monjon (2012) in their research articulated that most of the Socially responsible investing literature have finally arrived at conclusion and their impact on financial performance is limited and not statistically significant. This fact was confirmed by Humphrey and Tan (2014) with the latest data.

Objective(s) of the study

The factorization of various qualitative variables like corporate governance, contribution of companies in external environment, society, etc in stock prices is at its initial stages in India. With the improvement in information system and regulatory mechanism , the market participants and portfolio managers will be available with sufficient and timely information to properly factorize the impact of these issues in stock price. It is at this background , the study aims to test the difference in return offered by a stock from Pharma Sector in Tata Ethical fund which is a portfolio of funds based on ESG ,i.e. Cipla Ltd and another stock of the same sector but not included in the fund , i.e. Sun Pharma Ltd. Both the companies are comparable as their stocks have been regularly and actively traded in stock exchanges .

Hypothesis and Research Methodology

The returns generated by the stock of Cipla Ltd., Sun Pharma Ltd and index Nifty pharma over last four years i.e. July, 2014 to June, 2018 have been calculated on semiannual basis (as shown in table 1) and the values so arrived have been examined for statistical significance difference, if any.

Time period	Return on Cipla	Return on Sun Pharma	Return on Nifty pharma
July14 to Jan15	30.57	19.9	23.45
Jan15 to July 15	-2.11	5.72	10.48
July15 to Jan16	5.23	-6.71	-1.99
Jan16 to July 16	-27.75	-7.19	-6.33
July16 to Jan17	10.56	-21.26	-9.57
Jan17 to July 17	-2.34	-13.71	-6.88
July17 to Jan18	8.71	2.8	0.14
Jan18 to July 18	1.29	-1.78	-4.87

Table1: Return offered by stock of Cipla, Sun Pharma and Nifty Pharma

The study primarily aims to test the following Null hypothesis

Null Hypothesis : There is no significant difference in the semi annual return of stock of Cipla, Sun pharma and Nifty pharma. Symbolically, the null and alternative hypothesis of the study are stated below:

$$H_0 : \text{Mean}_{\text{Return on cipla}} = \text{Mean}_{\text{Return on sunpharma}} = \text{Mean}_{\text{Return on Niftypharma}}$$

(Null Hypothesis)

$$H_a : \text{Mean}_{\text{Return on cipla}} \neq \text{Mean}_{\text{Return on sunpharma}} \neq \text{Mean}_{\text{Return on Niftypharma}}$$

(Alternative Hypothesis)

In order to test the above hypothesis , the statistical test , namely ANOVA , has been employed using SPSS after ensuring compliance of necessary conditions. The sample data relates to two different stocks, out of which, one is included in Tata Ethical fund whereas the other is not part of the fund therefore the returns generated by the stock are independent of each other. The other conditions such as normality of the data and homogeneity of variance have been examined using Kolmogorov Smirnov test and Levene's test respectively. Finally, ANOVA test has been conducted on the sample and meaningful interpretations were made. In order to ascertain , difference between samples under study , Post hoc test has also been applied.

Analysis and Interpretation of results

The descriptive statistic output obtained on subjecting above data to SPSS is shown below in table 2

Descriptives

Return

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1	8	3.0200	16.29174	5.76000	-10.6002	16.6402	-27.75	30.57
2	8	-2.7788	12.61879	4.46142	-13.3283	7.7708	-21.26	19.90
3	8	.5538	11.10961	3.92784	-8.7341	9.8416	-9.57	23.45
Total	24	.2650	13.14146	2.68249	-5.2842	5.8142	-27.75	30.57

Table 2: SPSS output for descriptive statistics

It can be observed that Cipla Ltd offered positive return whereas Sun pharma offered negative return though there is insignificant positive return offered by the Nifty pharma index in the same period. This clearly demonstrate that stocks included in portfolio of ethical funds have higher chances of offering better returns in comparison to other stocks even if there no significant movement in the entire index comprising stock of that sector. This also shows outperformance of stock of Cipla Ltd and underperformance of stock of Sun Pharma Ltd.

In order to test the hypothesis of the study , one –way ANOVA test has been conducted on the data given in **table 1**. All the test have been conducted using 5% level of significance. Before subjecting the data for ANOVA test, the condition of normality and homogeneity of variances has been examined using K-S test and Levene's test respectively. Finally, Post - hoc analysis using multiple comparison have been used to find the areas in which differences are significant.
The assumption of normality of data has been examined using one sample Kolmogorov-Smirnov test (K-S test) using SPSS.
The result of the output are summarized below in **table 3.**

One-Sample Kolmogorov-Smirnov Test

		Rcipla	Rsun	Rniftypharma
N		8	8	8
Normal Parameters[a,b]	Mean	3.0200	-2.7788	.5538
	Std. Deviation	16.29174	12.61879	11.10961
Most Extreme Differences	Absolute	.246	.125	.265
	Positive	.197	.125	.265
	Negative	-.246	-.113	-.181
Kolmogorov-Smirnov Z		.696	.354	.749
Asymp. Sig. (2-tailed)		.718	1.000	.629

a. Test distribution is Normal.

b. Calculated from data.

Table3: SPSS output of One sample Kolmogorov – Smirnov Test

As can be observed from above calculation , p-value (Asymp. Sig) is greater than .05 in all the three cases, therefore, we can concluded that our data complies with the condition of normality . In order to test the homogeneity of variances among return , Levene statistic has been calculated using SPSS , as shown below in table 4:

Return

Levene Statistic	df1	df2	Sig.
.163	2	21	.850

Table4: SPSS output of Levene statistic test

The Levene statistic has been used to test the null hypothesis if there is significant difference among variance of the variables namely Return on Cipla, Return on Sun Pharma and Return on Nifty pharma. As the significance value is 0.850 greater than 0.05, the null hypothesis is rejected which implies that our assumption of homogeneity of variance is not violated. After ensuring compliance of test of normality and homogeneity of variances of each of the three samples under study, ANOVA test has been used to find out if the returns are significantly different or not. The output obtained using SPSS on the data given under table 1 , with regard to ANOVA test, is given below in table 5

ANOVA

Return

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	135.503	2	67.751	.371	.695
Within Groups	3836.548	21	182.693		
Total	3972.051	23			

Table 5: SPSS output of ANOVA test

As the Significance value happens to be more than 0.05 , we can conclude that that there is no statistically significant difference among the three variables under study which implies return offered by the two stocks and index are not statistically significant. In order to further ensure that there is no difference among the variables under study , post hoc test was conducted (as shown in table 6)

Post Hoc Test

Multiple Comparisons

Dependent Variable: Return

	(I) Securities	(J) Securities	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	Rcipla	Rsunpharma	5.79875	6.75819	.672	-11.2358	22.8333
		Rniftypharma	2.46625	6.75819	.929	-14.5683	19.5008
	Rsunpharma	Rcipla	-5.79875	6.75819	.672	-22.8333	11.2358
		Rniftypharma	-3.33250	6.75819	.875	-20.3670	13.7020
	Rniftypharma	Rcipla	-2.46625	6.75819	.929	-19.5008	14.5683
		Rsunpharma	3.33250	6.75819	.875	-13.7020	20.3670

Table 6: SPSS output of Multiple comparison test

It can be observed from the output shown for Tukey HSD test that in no case significant difference has been observed. However, the mean difference of return by Rsunpharma has been observed negative with respect to both Rcipla and Rniftypharma which further confirms underperformance of the stock in comparison to stock of Cipla and Nifty pharma index.

Conclusion

The above analysis clearly demonstrate that corporate governance has become important variable in determining performance of stock of any company in the long term and it is being used as important parameter by Foreign institutional investors as well as domestic institutional investor in selection of stocks to be included in their portfolios. Any lapse on the part of any company with regard to compliance of corporate governance, irrespective of its previous track record and capable management, can have significant bearing on the shareholder's wealth. The stocks, included in the portfolio of any ethical fund or ESG portfolio, are selected by fund managers after thorough research and investigation. Therefore, the long term retail investors in the stock market can rely on the stocks appearing in these funds for the investment purpose and can take advantage of their research if they wish to have stock specific investment instead of other mode of investment in equity market.

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