

DO ETHICAL FUNDS UNDERPERFORM CONVENTIONAL FUNDS? – EMPIRICAL EVIDENCE FROM INDIA

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Abstract *One of the significant developments in the investing community is the rise of socially responsible or ethical investments during last two decades. Because of the increasing size and importance of ethical mutual funds, this paper seeks to evaluate and compare the performance of ethical mutual funds with general funds and benchmark index (S&P BSE Shariah 500 Equity Index) in the Indian market. The sample comprises six ethical fund schemes and three general fund schemes of Taurus mutual fund over the period 2009-2014 using weekly NAVs. The study uses return, risk, risk-adjusted measures (Sharpe ratio, Treynor ratio, Jensen's alpha and information ratio), Fama's decomposition measure, paired samples t-test, and growth regression equation to accomplish the objectives. The findings suggest that some of the ethical funds generated significantly higher return than other funds and benchmark index. Despite having higher risk, ethical funds outperformed other funds and benchmark index on the basis of various risk-adjusted measures and net selectivity returns. This indicates that the compromise made with respect to diversification by investing in ethical funds was well rewarded in terms of higher returns in Indian context. Our findings lend support to the case of ethical investing in India. Mutual funds and other investment funds should launch schemes which invest in socially responsible or ethical stocks.*

Keywords *Corporate Social Responsibility, Ethical Investing, Fama's Decomposition Measure, Mutual Funds, Socially Responsible Investing*

INTRODUCTION

In today's world, ethical or socially responsible investments play crucial role among the financial investments. One of the main vehicles of ethical finance is given by ethical/ socially responsible mutual funds. Ethical investing requires that investments are made as per individual investors' ethics, values, and faith criteria. In a wider sense, it includes investment in companies that meet certain social, ethical and environmental criteria. Over the years, ethical investing is primarily based on Shariah principles of Islamic finance which requires certain rules to be followed while making investment in companies. The following sectors are excluded while investing as per Shariah principles:

1. Advertising and media firms generating revenues up to 65% from the Gulf Cooperation Council countries.
2. Newspapers, news and sports channels.
3. Alcohol, tobacco, pornography, gambling and related activities.
4. Companies engaged in duplicating.
5. Financial Institutions except Islamic Banks.
6. Firms dealing in meat.

7. Firms trading in gold and silver with cash as collateral.

To cater to the growing demand for ethical investing, a large number of ethical mutual fund schemes have been launched over the past two decades. As specified earlier these ethical funds apply ethical screening (mostly Shariah principles) while investing in companies. Investors generally assert that ethical mutual funds are likely to underperform other mutual funds. Supporters of these views give following reasons:

- (a) Because of ethical screens, ethical mutual funds provide lower diversification benefits to their unit holders.
- (b) Developing ethical screens rankings can be an expensive exercise which leads to lower the net return.
- (c) Generally, irresponsible and unethical activities are believed to be more lucrative and recession proof than responsible and ethical activities.

However earlier related literature has not been able to find a substantial performance gap between ethical funds and other mutual funds. Because of the increasing size and importance of ethical funds, various researchers have displayed considerable interest in the financial consequences of investing ethically i.e. is there any penalty imposed in terms of lower returns on ethical funds.

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Ethical investing in India is still limited in size. India has not done much for the growth of ethical investing. Only two ethical mutual funds are available in India - Tata Ethical Fund and Taurus Ethical Fund.

Tata Ethical Fund: This fund was launched by Tata Mutual Fund on 24th March, 1996. It is an open-ended equity fund which invests in a diversified equity portfolio based on Shariah norms. The objective of this fund is to provide medium to long-term capital gains by investing in Shariah compliant equity and equity-related instruments of well researched value and growth oriented companies.

Taurus Ethical Fund: This fund was launched by Taurus Mutual Fund on 6th April, 2009. This fund is a diversified equity fund catering to the investors who are looking for Shariah compliant investment opportunities. The fund manager will not acquire the shares of companies which do not comply with Shariah norms and thus, will select companies for investment from the universe of S&P BSE 500 Shariah Index. There are nine schemes of Taurus ethical funds available for investment.

OBJECTIVES

The main objective of this paper is to empirically examine the performance of ethical mutual fund schemes with other general mutual fund schemes and benchmark. This will help the investors knowing how ethical funds fared as compared to other general funds. The specific objectives of the paper are:

- (i) To check whether ethical mutual funds underperform other general funds and benchmark using risk and return.
- (ii) To evaluate the performance of different ethical funds with other general funds and benchmark on the basis of various risk-adjusted measures.
- (iii) To analyse the performance of ethical fund schemes with other schemes and benchmark index on the basis of net selectivity return.
- (iv) To check whether different types of ethical fund schemes and general fund schemes generate significantly different returns.
- (v) To estimate the growth rate of various ethical fund schemes and general fund schemes since their inception.

The remainder of the paper is organised as follows. Second section provides the brief review of literature regarding performance of ethical funds. Third section describes the data and methodology of the research work. Fourth section provides the empirical evidence and discussion of results while fifth section concludes the research. It concludes that investors can take the benefit of better performance of their

investment by including ethical or social criteria in their investment analysis.

REVIEW OF EXISTING LITERATURE

Extant literature is available in this area but most of the research studies are mostly pertained to US, UK and Australia. The growth of ethical mutual funds is still in the nascent stages of development in India.

Hamilton, Jo and Statman (1993) and Statman (2000) compared the returns of ethical and regular US funds to each other, and to both S&P 500 and Domini Social Index (DSI). Their Jensen's alpha reported that risk-adjusted returns of ethical mutual funds are not different from the conventional funds because of the fact that corporate social responsibility is not priced in the market.

Goldreyer, Ahmed and Diltz (1999) used an extended sample of ethical funds including equity, bond, and balanced funds. Using various risk-adjusted measures, they found that social screening does not affect the performance of ethical mutual funds in a systematic way. Diltz (1995), Guerard (1997), and Sauer (1997) concluded that there were no statistically significant differences between the returns of ethically screened and unscreened universes.

Cummings (2000) investigated the performance of 7 ethical equity funds in Australia and observed no significant differences in their returns compared to both a large and a small cap benchmark for the period of 1986-1994. However, Tippet (2001) argued that average of three largest Australian ethical mutual funds significantly underperformed the All Ordinaries Index by 1.5% p.a. during 1991-1998.

Asmundson and Foerster (2001) examined the performance of Canadian ethical mutual funds with domestic equity orientation vis-à-vis TSE 300 Index and found no statistically meaningful differences in return but some weak evidence suggesting that ethical investing is less risky.

Bauer, Koedijk and Otten (2005) reviewed 103 German, US and UK ethical mutual funds over the period 1990-2001. Using Carhart multi-factor model to evaluate the performance of ethical and conventional mutual funds, they found no evidence of significant differences in risk-adjusted returns between ethical and conventional funds. They also reported that due to different investment styles such funds are less prone to market conditions than conventional funds.

Hussein and Omran (2005) examined the impact of ethical screening on the performance of the Dow Jones Islamic indexes during December 1995-June 2003 by further dividing the entire period into two sub periods in order to track the behaviour of Islamic indexes under bull and bear market conditions. By employing CAPM and various risk-adjusted measures, the study finds that Islamic indexes

provide positive abnormal returns over the entire period and the bull market period, but they underperform their index counterparts over the bear market period.

Bauer, Otten and Rad (2006) examined whether there is a financial penalty for being an ethical investor in Australia. They observed no evidence of significant differences in risk-adjusted returns between ethical and conventional funds during 1992-2003. During 1992-1996, domestic ethical funds under-performed other funds significantly, whereas during 1996-2003 ethical funds matched the performance of other funds more closely.

Bauer, Derwall and Otten (2007) also examined the performance and risk sensitivities of Canadian ethical mutual funds and the conventional funds using single factor model and Carhart multi-factor model. Their Canadian evidence reported that performance differential between ethical mutual funds and conventional funds is statistically insignificant. Moreover, they found no evidence that the investment style of ethical mutual funds is significantly different from other funds.

Izquierdo and Saez (2008) compared the financial performance of ethical investment funds to that of other funds in the Spanish retail market. They found that financial and social performance of social and ethical funds was superior or similar to that achieved by rest of the funds. They concluded that financial performance of ethical funds in Spain is no sacrifice in terms of returns.

Renneboog, Horst and Zhang (2008) analysed the impact of ethics and stakeholder governance on the risk-adjusted performance of the money management industry. They found that SRI funds in many European, North-American and Asia-Pacific countries strongly underperform their benchmark portfolios. However, there was no significant difference between the alphas of social funds and conventional funds. They also found that underperformance of SRI funds is not driven by loadings on an ethics style factor. SRI investors are unable to identify the funds that will outperform in the future, whereas they show some fund-selection ability in identifying funds that will perform poorly. Finally, it was also found that corporate governance and social screens yield lower risk-adjusted returns.

Cortez, Silva and Areal (2009) investigated the performance of a sample of socially responsible mutual funds from seven European countries investing globally and/or in the European market. The results showed that European socially responsible funds present in general neutral performance in relation to both conventional and socially responsible benchmarks. Their results exhibited that investors who wish to hold European funds can add social screens to their investment choices without compromising financial performance.

Natarajan and Dharani (2012) empirically examined the risk and return behaviour of the selected Shariah compliant stocks and benchmark indices during the period 2nd January 2007-29th July 2011. The study revealed that average returns of Shariah compliant stocks and benchmark indices are almost same. Thus, they concluded that equity based Shariah compliant investment is a viable and ethical investment avenue especially to small and individual ethical investors.

Tripathi and Bhandari (2012; 2015) found that green stocks portfolios and socially responsible stocks portfolios in India do not underperform other general stocks and market portfolios. In fact during crisis period such portfolios outperform the market portfolio. Therefore they put forward a strong support for green investing, ethical investing and socially responsible investing in India. It is the responsibility of mutual funds to provide adequate number of financial products (mutual fund schemes) for investment using ESG criterion.

DATA AND METHODOLOGY

Data and Sources

We evaluate nine schemes of two types from Taurus Mutual Fund since their inception in April 2009 (6 ethical schemes and 3 general schemes). Since there is only one more ethical fund (i.e. Tata Ethical Fund), the sample is fairly representative of the ethical mutual funds schemes available in India. S&P BSE 500 Shariah Index¹ has been taken as a benchmark for Taurus ethical fund. Market portfolio² is represented by CNX 500 Equity Index. Taurus Shariah screening criteria is given in appendix of the paper. We have taken different schemes from Taurus ethical fund and Taurus NIFTY fund. Various schemes from Taurus ethical fund and Taurus NIFTY fund comprises:

1. Taurus Ethical Bonus (B)
2. Taurus Ethical Dividend (D)
3. Taurus Ethical Growth (G)
4. Taurus Ethical Dividend (D) – Direct Plan
5. Taurus Ethical Growth (G) – Direct Plan
6. Taurus NIFTY Dividend (D)

1 The S&P BSE 500 Shariah Index is designed to track the performance of the Shariah-compliant companies in S&P BSE 500 Index. Since Taurus ethical fund is an actively managed equity oriented Shariah compliant diversified fund, therefore, S&P BSE 500 Shariah Index is being used as the benchmark.

2 Market portfolio includes the companies whose stocks are most actively traded in the market irrespective of size of companies. CNX 500 Equity Index comprises of 500 most actively traded stocks in India and hence used as a proxy for market portfolio.

7. Taurus NIFTY Growth (G)
8. Taurus NIFTY Dividend (D) – Direct Plan
9. Taurus NIFTY Growth (G) – Direct Plan

The calculations are done on the basis of Net Asset Value (NAV) of these schemes. Weekly NAVs were collected from the website of Taurus mutual fund. These values are then converted into log returns as $\text{Log}(P1/P0)$. Implicit yield on 91 days T-bills have been taken as a proxy for risk-free rate of return. Next we calculated absolute risk or volatility as measured by standard deviation, relative risk as measured by coefficient of variation, portfolio beta, systematic risk, unsystematic risk and following risk adjusted measures for performance evaluation. The analysis has been done for all above mentioned schemes since their inception. The average assets under management (AAUM) in these schemes as on 30-09-2014 are given in Table 1.

Table 1: AAUM of Various Schemes as on 30-09-2014

Schemes	AAUM as on 30-09-2014 (In Crores)
Taurus Ethical Bonus (B)	0.02
Taurus Ethical Dividend (D)	9.12
Taurus Ethical Growth (G)	13.27
Taurus Ethical Dividend (D) – Direct Plan	0.36
Taurus Ethical Growth (G) – Direct Plan	0.66
Taurus NIFTY Dividend (D)	0.27
Taurus NIFTY Growth (G)	0.26
Taurus NIFTY Dividend (D) – Direct Plan	0.00
Taurus NIFTY Growth (G) – Direct Plan	0.01

Methodology Used

To accomplish our research objectives, the following hypotheses have been tested:

1. The risk and return of ethical mutual fund schemes are not significantly different from those of other schemes.
2. Performance of various ethical mutual fund schemes is similar to conventional fund schemes and benchmark using various risk-adjusted measures.
3. Performance of various ethical mutual fund schemes is similar to conventional fund schemes and benchmark on the basis of net selectivity return.
4. Different types of ethical fund schemes and general fund schemes do not generate significantly different returns.

5. Growth rate of various mutual fund schemes are similar to each other.

Risk Adjusted Measures for Performance Evaluation

1. Sharpe Ratio: It is also termed as reward to variability ratio and is calculated as the excess return per unit of total risk. If ARF is the average weekly fund return, RF the monthly risk free return and F scheme’s total risk then Sharpe ratio can be calculated as:

$$\text{Sharpe ratio} = \frac{AR_F - R_F}{\sigma F}$$

2. Treynor Ratio: It is also called reward to volatility ratio and is calculated as the excess return per unit of systematic risk. Systematic risk is indicated beta (βF).

$$\text{Treynor ratio} = \frac{AR_F - R_F}{\beta F}$$

Sharpe and Treynor ratios might give conflicting ranking of the funds if the funds are not perfectly diversified.

3. Jensen’s Alpha: It is the excess of actual return over CAPM return and is also termed as abnormal return.

$$\text{Jensen’s Alpha} = ARF - [RF + \beta F (RM - RF)]$$

where, ARF = Fund Scheme Return

RF = Monthly risk-free rate of return

βF = Fund Scheme Beta (Systematic risk of the mutual fund scheme)

RM = Market portfolio return

4. Information Ratio: It is calculated as abnormal return per unit of unsystematic risk and shows whether it is worth deviating from perfect diversified portfolio. It can be calculated as-

$$\text{Information Ratio} = \frac{E[R_F - R_B]}{\sigma_{ef} \sigma_{ef}}$$

where, αF = Jensen’s alpha or abnormal return of the mutual fund scheme

ef = Unsystematic risk of the mutual fund scheme

5. Fama’s Decomposition Measure: We also calculated net selectivity return using Fama’s decomposition measure. Fama’s decomposition takes advantage of the ability to convert risks into their return equivalents. Thus, both return and risk are analysed, but risk is expressed in terms of the return gained or foregone to achieve that level of risk. In terms of Fama’s framework, a portfolio’s excess return constitutes the following three main components:-

- (a) Compensation for non-diversification (Systematic risk)

- (b) Compensation for diversification (Unsystematic risk)
- (c) Net selectivity

Selectivity is the portion of the excess return that is not explained by the portfolio beta and the market risk premium. Since, selectivity cannot be measured by risk, it must be due to superior security selection. Selectivity includes diversification and net selectivity. Compensation for unsystematic risk is the difference between the return that should have been earned according to capital market line (CML) and the return that should have been earned according to the security market line (SML). If the portfolio is perfectly diversified, this will be equal to zero because there will be no unsystematic risk. We can determine how much of the risk premium comes from ability to select stocks (net selectivity) by subtracting diversification from selectivity. A positive net selectivity indicates superior performance for a portfolio. However, in case of well diversified portfolios, both the net selectivity and selectivity are not likely to be significantly different from each other.

The different components have been worked out using the following:-

$$\text{Compensation for systematic risk} = \beta F (RM - RF)$$

$$\text{Compensation for unsystematic risk} = (RM - RF) [(\sigma F/\sigma M) - \beta F]$$

$$\text{Net selectivity} = (ARF - RF) - (\sigma F/\sigma M) (RM - RF) = \text{Selectivity} - \text{Compensation for unsystematic risk}$$

T-Test

Paired samples t-test is being used to compare the returns of various schemes of Taurus ethical fund, Taurus NIFTY fund and benchmark S&P BSE 500 Shariah Index. In applying

t-test, we compare the returns for different schemes since their inception.

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

where, \bar{x}_1 and \bar{x}_2 are the returns of two mutual fund schemes S_1 and S_2 are the standard deviations of two mutual fund schemes n_1 and n_2 are the number of observations in two mutual fund schemes.

Growth Rate Regression Equation

To check the growth rate of different schemes since their inception we have estimated equation (1). The intercept of the model shows the index value of different schemes of mutual fund irrespective of other factors while beta (slope) shows the growth rate of a particular scheme captured by time period under study.

$$\text{Ln (Scheme Index Value)} = b_0 + b_1t \dots(1)$$

where, Ln (Scheme Index Value) = Natural Log of Index Value of a Scheme

b_0 = Constant/Intercept of Scheme Index Value

b_1 = Growth Rate of Scheme Index Value

t = Time Period (1 for first week, 2 for second week.....)

We have calculated index values of different schemes using their NAVs. Value of 100 was assigned to the launch date of particular scheme and then further values are being calculated using the formula $(100/\text{Launch Date NAV}) * \text{Current NAV}$.

Table 2: Weekly Risk and Return Profile of Various Taurus Schemes since Inception

Schemes	AvgReturn (%)	Standard Deviation (%)	Coefficient of Variation	Beta	Systematic Risk (%)	Unsystematic Risk (%)
Taurus Ethical (B) Fund	0.4604	2.444	5.309	0.345	0.921	2.264
Taurus Ethical (D) Fund	0.3261	2.710	8.309	0.350	0.934	2.544
Taurus Ethical (G) Fund	0.4600	2.447	5.318	0.344	0.918	2.268
Taurus NIFTY (D) Fund	0.1926	2.414	12.531	0.228	0.523	2.356
Taurus NIFTY (G) Fund	0.1926	2.427	12.602	0.239	0.549	2.364
Taurus Ethical (D) Fund – Direct Plan	0.5202	1.857	3.570	0.311	0.656	1.737
Taurus Ethical (G) Fund – Direct Plan	0.5243	1.858	3.543	0.311	0.656	1.738
Taurus NIFTY (D) Fund – Direct Plan	0.3621	2.321	6.409	0.401	0.846	2.161
Taurus NIFTY (G) Fund – Direct Plan	0.3628	2.323	6.403	0.399	0.842	2.165
S&P BSE 500 Shariah Index	0.3758	2.821	7.504	0.468	1.401	2.448
CNX 500 Equity Index	0.3372	2.668	7.914	1	2.668	0

Table 3: Risk Adjusted Measures of Various Taurus Schemes since Inception

Schemes	Sharpe Ratio	Treynor Ratio	Jensen's Alpha (%)	Information Ratio
Taurus Ethical (B) Fund	0.1315	0.0093	0.2530	0.1117
Taurus Ethical (D) Fund	0.0690	0.0053	0.1178	0.0463
Taurus Ethical (G) Fund	0.1312	0.0093	0.2528	0.1115
Taurus NIFTY (D) Fund	0.0145	0.0015	0.0266	0.0113
Taurus NIFTY (G) Fund	0.0144	0.0014	0.0262	0.0111
Taurus Ethical (D) Fund – Direct Plan	0.1901	0.0113	0.2956	0.1701
Taurus Ethical (G) Fund – Direct Plan	0.1922	0.0115	0.2998	0.1725
Taurus NIFTY (D) Fund – Direct Plan	0.0839	0.0049	0.1209	0.0559
Taurus NIFTY (G) Fund – Direct Plan	0.0842	0.0049	0.1219	0.0563
S&P BSE 500 Shariah Index	0.0848	0.0051	0.1439	0.0588
CNX 500 Equity Index	0.0742	0.0019	0

EMPIRICAL RESULTS

Table 2 shows the risk and return profile of different Taurus ethical funds, Taurus NIFTY funds and their benchmarks i.e. S&P BSE 500 Shariah Index and CNX 500 Equity Index. It shows that all the schemes of Taurus ethical funds i.e. bonus, dividend, growth, and direct plan generated higher weekly log returns than the other schemes, benchmark Shariah Index and market CNX 500 Equity Index. Since inception, Taurus Ethical (G) Fund - Direct Plan generated highest weekly log return of 0.524% followed by Taurus Ethical (D) Fund - Direct Plan with 0.520%. Taurus NIFTY (D) and NIFTY (G) generated the lowest weekly return of 0.193%. However, at the same time standard deviation or absolute risk of Taurus ethical fund - direct plan was also lower than the other schemes and indices. But other Taurus ethical schemes are showing standard deviation higher than the Taurus NIFTY schemes but less than its benchmark. If we look at the coefficient of variation (a relative measure of risk), Taurus ethical (D) direct plan and Taurus ethical (G) direct plan generated the least coefficient of 3.57 and 3.54 respectively. It clearly indicates these both schemes are the most defensive one among all other schemes. Beta of different Taurus ethical schemes was higher than the other Taurus NIFTY schemes but less than its benchmark i.e. Shariah Index. Thus, Taurus ethical fund is more sensitive to market conditions than Taurus NIFTY fund but less than Shariah Index. As we know that, systematic risk is due to broad macro factors affecting all securities while unsystematic or idiosyncratic risk is caused by firm specific factors. For well-diversified portfolios, the unsystematic risk is very small or equal to zero. Therefore, due to diversification benefits unsystematic risk of market i.e. CNX 500 Equity Index is also zero. When we look at the unsystematic risk of the schemes in the table, we find that Taurus ethical direct plans (dividend and growth) had lowest amount of unsystematic risk which means that these schemes are well diversified

among all other schemes. At the same time, systematic risk of different Taurus ethical fund schemes is higher than the other schemes but less than its benchmark and market. Thus, it is clearly evident from the above table that Taurus ethical fund schemes can be a safer bet for investors who want to add Shariah compliant ethical as well as financial perspective into their basket simultaneously. Overall, it can be said that Taurus ethical fund outperformed Taurus NIFTY fund, its benchmark (Shariah Index) and market (CNX 500 Equity Index) on the basis of risk and return.

Table 3 gives the result of various risk-adjusted measures employed to evaluate the performance of Taurus ethical fund, Taurus NIFTY fund, S&P BSE 500 Shariah Index and CNX 500 Equity Index. Taurus ethical fund outperformed its opponent Taurus NIFTY fund, its benchmark (BSE 500 Shariah Index) and market proxy (CNX 500 Equity Index) on the basis of all risk-adjusted measures employed i.e. Sharpe ratio, Treynor ratio, Jensen's Alpha, and Information ratio. As per basic finance theory, risk and return move in tandem. Higher risk in Taurus ethical schemes generated higher returns and as a result a high Sharpe ratio, which indicates highest return per unit of total risk. Taurus ethical (G) and (D) fund – direct plan generated the highest return per unit of total risk of 0.190 and 0.192 respectively followed by other Taurus ethical schemes. Similarly, high Treynor ratio indicates highest return per unit of total systematic risk. Again, all the proxies of Taurus ethical fund outperformed Taurus Nifty fund, Shariah Index and market proxy i.e. CNX 500 Equity Index. The next measure that we have used to evaluate the performance of different schemes was Jensen's alpha, which signifies abnormal return of a scheme. Taurus ethical (G) fund – direct plan is generating highest weekly abnormal return of 0.30% followed by Taurus Ethical (D) fund – direct plan with 0.295%. A high Information ratio shows that an investor can achieve higher returns more efficiently by taking additional risk. We find that all proxies

Table 4: Fama's Decomposition Results for Various Taurus Schemes

Schemes	Risk Premium (%)	Risk Premium due to (%)				Ranking on the basis of Net Selectivity
		Systematic Risk	Selectivity	Unsystematic Risk	Net Selectivity	
Since Inception						
Taurus Ethical (B) Fund	0.3239	0.0703	0.2536	0.0960	0.1575	3
Taurus Ethical (D) Fund	0.1896	0.0713	0.1183	0.1131	0.0052	8
Taurus Ethical (G) Fund	0.3235	0.0701	0.2534	0.0964	0.1569	4
Taurus NIFTY (D) Fund	0.0561	0.0464	0.0096	0.1178	-0.1082	9
Taurus NIFTY (G) Fund	0.0561	0.0487	0.0074	0.1165	-0.1091	10
Taurus Ethical (D) Fund – Direct Plan	0.3837	0.0634	0.3203	0.0630	0.2573	2
Taurus Ethical (G) Fund – Direct Plan	0.3878	0.0634	0.3245	0.0631	0.2614	1
Taurus NIFTY (D) Fund – Direct Plan	0.2256	0.0817	0.1439	0.0763	0.0676	6
Taurus NIFTY (G) Fund – Direct Plan	0.2262	0.0813	0.1449	0.0768	0.0681	5
S&P BSE 500 Shariah Index	0.2393	0.0953	0.1439	0.0966	0.0474	7

of Taurus ethical funds outpaced the Taurus NIFTY schemes and Shariah Index.

So, on the basis of above results we conclude that Taurus ethical fund schemes, despite having higher risk, outperformed Taurus NIFTY fund schemes, S&P BSE 500 Shariah Index and CNX 500 Equity Index on risk adjusted basis. Hence, we can say that there is absolutely no penalty by making investment in ethical mutual funds in India.

Table 4 shows the results for Fama's Decomposition Measure. If we look at the risk-premium or excess return from the table, it is found that various schemes of Taurus ethical funds had generated highest risk-premiums among all other benchmarks available. It shows that return of Taurus ethical schemes are higher than the return of other Taurus schemes and benchmark Shariah Index. Thus, it shows minimum willingness to accept additional risk. We know that different socially responsible and ethical funds

are less diversified as compared to their general and non-ethical counterparts because of screening criteria they use. After disentangling the compensation for unsystematic risk, all the schemes of Taurus ethical fund provided positive and highest net selectivity returns. Thus, we can say that Taurus ethical fund outperformed Taurus NIFTY fund even on net selectivity basis. This indicates that compromise with respect to diversification made by this scheme by investing in ethical mutual funds, was well rewarded in terms of higher returns. This also shows that mutual funds which are ethical are beating the other mutual funds in the market. Moreover, if we rank all our schemes on the basis of risk premium due to net selectivity, then we found that Taurus ethical schemes are given the first ranking in the study period.

Table 5 displays the result of t-test conducted to check whether there is a significant difference in returns of various Taurus ethical schemes. It is found that Taurus ethical (B) and Taurus ethical (G) funds are generating significantly

Table 5: Result of t-test: Comparison of Returns of Different Taurus Ethical Schemes

Pairs	Differential Mean (%)	t-value	p-value
Taurus Ethical (B) – Taurus Ethical (D)	0.1342**	1.980	0.049
Taurus Ethical (B) – Taurus Ethical (G)	0.0003	0.220	0.826
Taurus Ethical (G) – Taurus Ethical (D)	0.1339**	1.976	0.049
Taurus Ethical (D) Direct Plan – Taurus Ethical (D)	0.0069	0.061	0.952
Taurus Ethical (G) Direct Plan – Taurus Ethical (G)	0.0112	0.099	0.922

**Significant at 5% level of significance

Table 6: Result of t-test: Comparison of Different Taurus Ethical Schemes with Shariah 500 Index

Pairs	Differential Mean (%)	t-value	p-value
Taurus Ethical (B) – Shariah 500 Index	0.0698	0.854	0.394
Taurus Ethical (D) – Shariah 500 Index	-0.0644	-0.594	0.553
Taurus Ethical (G) – Shariah 500 Index	0.0695	0.850	0.396

Table 7: Result of t-test: Comparison of Different Taurus Ethical Schemes with Taurus NIFTY Schemes

Pairs	Differential Mean (%)	t-value	p-value
Taurus Ethical (D) – Taurus NIFTY (D)	-0.0065	-0.073	0.942
Taurus Ethical (G) – Taurus NIFTY (G)	0.0387	0.505	0.614
Taurus Ethical (D) Direct Plan – Taurus NIFTY (D) Direct Plan	0.1581*	1.713	0.091
Taurus Ethical (G) Direct Plan – Taurus NIFTY (G) Direct Plan	0.1616*	1.828	0.072
Taurus Ethical (D) Direct Plan – Taurus NIFTY (D)	0.1617*	1.684	0.095
Taurus Ethical (G) Direct Plan – Taurus NIFTY (G)	0.1659	1.153	0.252

*Significant at 10% level of significance

higher weekly returns than the Taurus ethical (D) fund. The return of Taurus ethical (B) and Taurus ethical (G) fund was higher by 0.13% per week (p-value 0.049). Although Taurus ethical (D) direct plan and Taurus ethical (G) direct plan are generating returns higher than the Taurus ethical (D) and Taurus ethical (G) funds respectively, but the difference was not statistically significant.

In Table 6, returns of different Taurus ethical fund schemes are being compared with their benchmark i.e. S&P BSE 500 Shariah Index. We find that Taurus ethical (B) and Taurus ethical (G) funds are generating returns higher than their benchmark but none of them were significant enough. Hence, we can say that there is absolutely no penalty for investing in various ethical fund schemes as it provides weekly returns higher than the Shariah Index. Our findings

suggest that social or ethical screening does not affect the performance of ethical funds in a systematic way.

Table 7 shows the comparative analysis of returns of different Taurus ethical schemes and Taurus NIFTY schemes. It is observed that Taurus ethical (D) direct plan is generating significantly higher returns than Taurus NIFTY (D) direct plan and Taurus NIFTY (D). The return of Taurus ethical (D) direct plan was higher by 0.158% per week (p-value 0.091) and 0.162% per week (p-value 0.095) than the returns of Taurus NIFTY (D) direct plan and Taurus NIFTY (D). The returns of Taurus ethical funds were higher than their benchmarks because now corporate social responsibility is accurately priced in the Indian market. Thus, investors who wish to invest in the Indian market through mutual funds can add social or ethical screens into their basket of investment choices without compromising for financial performance.

Table 8: Growth Rate of Various Schemes since Inception

Mutual Funds/Index	Equation (1)	Value	t-statistics	p-value	R-Square
Taurus Ethical (G) Fund	Constant (b_0)	5.140***	316.234	0.000	0.577
	T (b_1)	0.002***	19.939	0.000	
Taurus NIFTY (G) Fund	Constant (b_0)	4.547***	346.445	0.000	0.409
	T (b_1)	0.001***	12.600	0.000	
Taurus Ethical (D) Fund – Direct Plan	Constant (b_0)	4.453***	355.207	0.000	0.881
	T (b_1)	0.006***	26.831	0.000	
Taurus NIFTY (D) Fund – Direct Plan	Constant (b_0)	4.495***	371.526	0.000	0.787
	T (b_1)	0.003***	18.957	0.000	
S&P BSE 500 Shariah Index	Constant (b_0)	7.128***	423.351	0.000	0.682
	T (b_1)	0.002***	25.976	0.000	

***Significant at 1% level of significance

Table 8 shows the intercept and growth rate of different Taurus mutual fund schemes and S&P BSE 500 Shariah Index. Coefficient of determination (R²) is highest in case of Taurus Ethical (D) Fund - Direct Plan (i.e. 0.881). This indicates that growth in case of Taurus Ethical (D) Fund - Direct Plan is adequately captured by time period under study. However, intercept of this scheme (i.e. 4.453) is lowest among all other schemes. But intercept of S&P BSE 500 Shariah Index (i.e. 7.128) is highest among all other ones. The reason for this being that Shariah Index was launched earlier than all other schemes and Taurus Ethical (D) Fund - Direct Plan was launched recently in the year 2013. The p-values of all the intercepts are significant which implies that there are some other factors besides time-period which have significant effect on growth rate. However, due to limitations on scope of our study we have not considered other factors. Growth rate for Taurus Ethical (D) Fund - Direct Plan is 0.6% which is higher than all other schemes available. The p-values of all the growth rates are also significant at 1% level of significance. However, growth rate for Shariah index and Taurus Ethical (G) Fund is 0.2%. This shows that ethical funds are outperforming general funds and its benchmark (Shariah Index) in the market. Therefore, investors who put more faith in ethical funds than general mutual funds are not subject to lower fund performance. Therefore, our study rejects the notion that imposing ethical constraints leads to a weaker investment performance.

CONCLUSION AND POLICY IMPLICATIONS

This paper addresses to a big debate as to whether the performance of ethical mutual funds is superior to their conventional peers and benchmark. It examined the performance of five Taurus ethical fund schemes, four Taurus NIFTY fund schemes, benchmark S&P BSE 500 Shariah Index and market proxy CNX 500 Equity Index. It is found that Taurus ethical fund schemes generated higher returns than Taurus NIFTY fund schemes, S&P BSE 500 Shariah Index and CNX 500 Equity Index. Despite having higher risk, various Taurus ethical fund schemes outperformed their conventional counterparts and benchmark using various risk-adjusted measures like Sharpe ratio, Treynor ratio, Jensen's alpha, and Information ratio. As per Fama's decomposition measure, Taurus ethical fund schemes again outperformed other schemes even on the basis of net selectivity returns. This indicates that the compromise with respect to diversification, made by investing in ethical fund schemes was well rewarded in terms of higher returns. The growth rate of ethical fund schemes was also higher than the other available schemes. This indicates that investors are nowadays become more sensitised towards business ethics and social responsibility. Our results are more promising than those of the previous empirical literature

available. Therefore, our study does not support the claim that imposing ethical constraints leads to weaker investment performance. Indian investors can allocate their funds to ethical mutual funds schemes without worrying about their underperformance in terms of significantly lower returns.

The findings lend support to the case of ethical/socially responsible investing in India. These findings have important implications for regulators, policy makers and investors at large. It proves that investing through ethical mutual funds can be used to build up defensive and better performing investment option by socially responsible/ethical investors. Currently in India, there are only two ethical funds available i.e. Tata ethical fund and Taurus ethical fund. We suggest that mutual funds and other investment funds should launch schemes which invest in socially responsible or ethical stocks. The regulators and policy makers can take steps to ensure socially responsible allocation of scarce resources. The policy makers can also push financial sector reforms in the direction of socially responsible investing or ethical investing to enforce CSR law.

In line with our current work, we can get scope for further research work. First, performance of ethical funds and their conventional counterparts can be evaluated under different business economic conditions. Second, Fama-French three factor and Carhart four factor models can be applied for calculating expected return. Last, primary data can also be used to judge investors' attitude and behaviour towards ethical investing.

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APPENDIX

Table A1: Taurus Shariah Screening Criteria

Filters	Feature
Primary Filter: Sector Based Screens (Excluded Industries)	Banks and NBFCs
	Breweries, Distilleries, Alcohol related chemicals
	Adult Entertainment, Gambling
	Advertising & Media (Newspapers are allowed)
	Tobacco and related business, chewing pan masala
	Trading of gold & silver as cash on deferred basis
	Pork & related business
	Leverage Compliance
	Debt/Market Value of Equity (12 months avg) <33%
Secondary Filter: Accounting Based Screens	Cash Compliance
	Accounts Receivable/Market Value of Equity (12 months avg) <49%
	(Cash + Interest Bearing Securities)/Market Value of Equity (12 months avg) <33%
	Revenue Share from Non-Compliant Activities
	(Non-Permissible Income other than Interest Income)/Revenue <5%

Source: Taurus Mutual Fund