

## Performance Analysis of Select ESG Funds in India

Abhishek Dutta<sup>1</sup> and Baitali Paul<sup>2</sup>

<sup>1</sup>SACT, Department of Commerce, New Alipore College, Kolkata, India

<sup>2</sup>SACT, Department of Commerce, New Alipore College, Kolkata, India

<sup>2</sup>Corresponding Author: baitalpaul@gmail.com

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### ABSTRACT

The creation of the “Jones Sustainability Index” in 1999, the “Asia Pacific Index” in 2009 and other indices have made it easier for investors to select companies with a best-in-class approach to ‘economic’, ‘environmental’ and ‘social issues’(ESG). ESG investing is now percolating in response to public demand for ESG investment products and the adoption of ESG by mainstream investors in the West. In line with “United Nation Environmental Programme (UNEP)” in 2014, the Indian government started the process of inducting Sustainable Finance schemes in the Green energy, non-renewable energy, technology hardware, and renewable energy sector mainly through startups in the form of Business Loans to MSME sector by various lending institutions. In this research paper, an attempt has been made to analyse the performance of select ESG for 24 months after the outbreak of Covid-19 based on return and risk evaluation. This secondary data-based analysis includes four ESG funds and uses tools like ‘Compound Annual Growth Rate (CAGR)’, ‘Standard Deviation’, ‘Sharpe Ratio’, ‘Treyner Ratio’, ‘Alpha’, ‘Beta’ and ‘coefficient of determination’. The study expects to benefit the stakeholders in choosing appropriate ESG scheme. In terms of ‘CAGR’, ‘Sharpe Ratio’ and ‘Treyner Ratio’ most of the funds have underperformed. Most of the funds are defensive during both time frames. For the entire time the degree of diversification is quite satisfactory for most of the funds.

**Keywords:** esg, return, risk, sustainability

## I. INTRODUCTION

Conceptually “sustainable finance” was developed initially under “UN Millenium Development Goals (MDG)” 2000 where awareness was raised providing a framework for the financial sector to understand its impact on sustainability (which includes Economic, Social and Environmental objectives). ESG criteria are a set of standards for a company’s operations that socially conscious investors use to screen potential investments. ‘Environmental criteria’ consider how a company performs as a steward of nature. ‘Social criteria’ examine how it manages relationships with employees, suppliers, customers and the communities where it operates. ‘Governance’ deals with a company’s leadership, executive pay, audits, internal controls and shareholder rights. Maximisation of ‘Return on Investment (ROI)’ with risk minimisation is forcing retail investors to invest in ‘equity’ or ‘equity-linked instruments’. Adequate skill, knowledge, time, and inclination to keep track of events in capital markets may not always be the quality retail investors may be vested with and in such cases, mutual funds are there to cater to the needs of different types of investors. Mutual funds offer a variety of flavours. ESG funds look into the ‘environment’, ‘society’ and ‘governance’.

## II. REVIEW OF LITERATURE

In a study, it was observed that ‘value-driven investors’ of ‘Socially Responsible Mutual funds’ who seek high ESG investments can’t rely upon a long-term continuation of high ESG scores and thus need to monitor their investment from time to time (Maximilian Wimmer, 2012). In a study, it was analysed that in comparison to other companies in the same industry, companies which incorporate ESG factors show lower volatility and generate higher returns as each industry is affected differently by ESG factors (Kumar, Smith, Badis, Wang, Ambrosy and Tavares, 2016). A study of 1425 US Open-ended Equity funds for the period from April 2009 to December 2016 reveals that US open-ended equity funds are capable to hedge the ESG-related systematic risk which is significantly priced in the market (Jin, 2017). In a work, it was found that during the “COVID period” as the market collapsed in late February 2020, investors showed a preference for low ESG risk funds because these were offering some hedge against further market downturns (Ferriani and Natoli, 2020). It was revealed from a study that in respect of investor protection or a capital market perspective ESG funds do not present distinctive concerns. ESG funds do not appear to be charging investors higher fees or sacrificing returns relative to their traditional counterparts (Curtis, Fisch, Robertson, 2021).

### III. RESEARCH GAP

Studies conducted on ESG funds are limited in number in the Indian context. Moreover, these studies were mainly published in newspapers and periodicals. As such, there is a lack of comprehensive study on ESG funds in the Indian scenario.

### IV. OBJECTIVE OF THE STUDY

The objectives of the studies are as follows:

- 1) To identify the nature of the portfolio of select ESG funds
- 2) To analyse the performance of select ESG funds with the specified benchmark index (NIFTY 100 ESG TR INR) from the risk-return parameters.

### V. RESEARCH DESIGN

#### Data Source

The study is both ‘exploratory’ and ‘empirical’. The ‘exploratory’ part of the study is based on the current literature available on this particular issue in the form of books, journal articles, research studies, and websites. This part also covers the conceptual and theoretical of mutual funds. On the other hand, the ‘empirical’ part of the study is based on some empirical evidence like different risk-returns parameters.

#### Research Methodology

The month-end “Net Asset Values (NAVs)” under the “Growth” option have been taken into consideration. The month-end closing values of the benchmark index (NIFTY 100 ESG TR INR) have been considered. The annualised risk-free rate ( $R_f$ ) is taken as 7.1 % (Public Provident Fund rate for the Quarter January-March 2022). Monthly returns of the funds ( $R_p$ ) and their benchmarks ( $R_b$ ) are calculated as follows:

$$R_p = (NAV_t - NAV_{t-1}) / NAV_{t-1}$$

$$R_b = (Value_t - Value_{t-1}) / Value_{t-1}$$

#### Time Period of the Study

The period of the study ranges between 01.11.2020 and 30.11.2022.

#### Sample Size

**Table 1:** Selection Criteria of the Funds

Total number of ESG funds as of 30.11.2022	08
Less: Number of funds left out on the basis of chosen criteria	04
No. of fund choose (Launched before 2021)	04

Source: www.morningstar.in

#### Funds at a Glance:

Table 1 shows the launch date, AUM, nature of the fund, and investment of the funds in different securities as on 31st November 2022.

**Table 2: Fund Particulars**

SI No.	Fund	Fund House	Launch Date	AUM (Mil) As On 30.11.2022	Asset Allocation			
					Stocks(%)	Bonds (%)	Cash (%)	Other (%)
1	SBI Magnum Equity ESG Fund Regular Growth (SBIMEESGF)	SBI Fund Management Limited	November , 27, 2006	47,573.12	98.49	0.00	1.51	0.00
2	Axis ESG Equity FundRegular Growth (AXISESGEF)	Axis Asset Management Company Limited	February 12, 2020	16,843.28	99.45	0.00	0.55	0.00
3	ICICI Prudential ESG FUND Regular Growth (ICICIESGF)	ICICI Prudential Asset Management Company Limited	October 09, 2020	13,529.11	91.89	0.03	8.08	0.00
4	Quant ESG Equity Fund Regular Growth (QESGEF)	Quant Money Managers Limited	November 05, 2020	1,478.06	99.62	0.00	0.38	0.00

Source: www.morningstar.in

### Tools and Techniques Used

‘Compounded Annual Growth Rate (CAGR)’ of the funds and the benchmark has been computed for the different study periods to understand the returns generated by the funds in comparison to the benchmark. Similarly, the average ‘Annualized Standard Deviation’ of the funds (SDp) and their respective benchmark indices (SDb) have been computed to measure total risk. Traditional measures of the ‘Capital Asset Pricing Model (CAPM)’ like the ‘Sharpe Ratio’, ‘Treyner Ratio’, and ‘Jensen Alpha’, were applied to understand ‘risk-return relationship’ of the funds. Further, measures like ‘R-squared (RSQ)’ or the ‘coefficient of determination’ and ‘beta’ were used to understand the relationship of the fund with its benchmark and to have an understanding of the extent of ‘market risk’.

## VI. RESEARCH QUESTIONS

The study attempts to answer the following questions:

- 1) How are the stock and sectors holdings?
- 2) Are the returns from the chosen ESG funds satisfactory?
- 3) What is the risk of the chosen funds?
- 4) Whether risk-adjusted returns of the ESG funds are satisfactory?
- 5) Are the fund managers successful in selecting undervalued assets?
- 6) Whether the chosen ESG funds are aggressive or defensive?
- 7) Whether the fund managers succeed in reducing the unsystematic risk?

## VII. LIMITATIONS OF THE STUDY

- 1) The study has considered some traditional measures to analyse the performance of the chosen ESG funds. There are many more measures to evaluate the performance of such funds.
- 2) We have not considered the change in performance of the funds after the change of fund managers.

## VIII. PERFORMANCE ANALYSIS OF THE SELECT ESG

**Table 3:** Top 5 and Top 10 Holdings

Fund's Name	% of Total AUM	
	Top 5 Holding	Top 10 Holding
SBI Magnum Equity ESG Fund	27.74	44.89
Axis ESG Equity Fund	37.89	60.33
ICICI Prudential ESG Fund	27.47	45.2
Quant ESG Equity Fund	33.32	60.61

Source: www.morningstar.in

It is evident from Table 3 that the 'top 5 holdings' of the chosen funds were less than 40% but the 'top 10 holdings' of two funds were more than 60%. Therefore, it can be said that AXISESGEF and QESGEF were more concentrated than the other two funds in terms of their top 10 holdings.

**Table 4:** Stock Sector Weightings (%)

SBI Magnum Equity ESG Fund		Axis ESG Equity Fund		ICICI Prudential ESG Fund		Quant ESG Equity Fund	
Sector	% of Holdings	Sector	% of Holdings	Sector	% of Holdings	Sector	% of Holdings
Financial Services	34.26	Financial Service	31.8	Financial Services	26.22	Financial Service	21.92
Consumer Cyclical	23.13	Consumer Defensive	22.67	Technology	23.05	Consumer Cyclical	15.03
Technology	14.36	Technology	15.96	Consumer Cyclical	16.39	Industrials	12.07
Industrials	11.48	Consumer Cyclical	7.25	Communication Service	8.26	Healthcare	11.98
Basic Materials	7.31	Healthcare	7.11	Industrials	8.13	Consumer Defensive	10.36
Healthcare	3.28	Communication Services	6.87	Healthcare	4.74	Communication Service	9.66
Consumer Defensive (D)	2.98	Utilities	4.61	Consumer Defensive	4.31	Basic Materials	9.33
Energy	1.86	Industrials	3.66	Utilities	3.55	Energy	6.02
Communication Service	1.34	Basic Materials	0.07	Basic Materials	3.36	Technology	3.63
				Energy	1.99		
	<b>100.00</b>		<b>100.00</b>		<b>100.00</b>		<b>100.00</b>

Source: www.morningstar.in

From Table 4 it was observed that the 'financial services sector' holds the highest percentage of holdings for all the select funds. Stock holding in 'consumer cyclical', 'consumer defensive', 'technology' and 'industrial sector' are common in all the funds.

### A. Compounded Annual Growth Rate (CAGR)

CAGR of the funds and the benchmark have been presented in Table 5.

**Table 5:** CAGR of the Funds

Name of the fund	1 Year	2 Year
SBI Magnum Equity ESG Fund	2.64913	19.05592
Axis ESG Equity Fund	-9.12938	9.39178
ICICI Prudential ESG Fund	-0.21739	13.33644
Quant ESG Equity Fund	25.33976	46.19789
<b>NIFTY 100 ESG TR INR</b>	<b>2.75259</b>	<b>18.54120</b>

Source: Compiled by researchers

It is evident from Table 5 that QESGEF have outperformed the benchmark during both 1-year and 2-year time frame. For a 2-year time frame, SBIMEESGF has also outperformed the benchmark.

### B. Annualized Standard Deviation

A glance at Table 6 will speak about the annualized Standard Deviations.

**Table 6:** Annualized Standard Deviation of the Funds

Name of the fund	1 Year	2 Year
SBI Magnum Equity ESG Fund	14.84173	13.65010
Axis ESG Equity Fund	17.27765	15.51285
ICICI Prudential ESG Fund	13.04823	11.43644
Quant ESG Equity Fund	22.67077	18.51602
<b>NIFTY 100 ESG TR INR</b>	15.26372	14.37683

**Source:** Compiled by researchers

From Table 6, it was observed that for both 1-year and 2-year time frames AXISESGEF and QESGEF were riskier than the benchmark.

### C. Risk adjusted Return: Sharpe Ratio

Table 7 shows risk-adjusted return of the funds in terms of Sharpe ratio measured in terms of SD.

**Table 7:** Sharpe Ratio of the Funds

Name of the fund	1 Year	2 Year
SBI Magnum Equity ESG Fund	-0.29989	0.875885
Axis ESG Equity Fund	-0.93933	0.14773
ICICI Prudential ESG Fund	-0.56080	0.54531
Quant ESG Equity Fund	0.80455	2.11157
<b>NIFTY 100 ESG TR INR</b>	-0.28482	0.79586

**Source:** Compiled by researchers

It was observed from Table 7 that in terms of risk-adjusted return most of the funds have underperformed the benchmark for both the time frame except QESGEF which outperformed the benchmark for both 1-year and 2-year time frames.

### D. Treynor Ratio

Table 8 shows risk-adjusted return of the funds in terms of Treynor ratio measured in terms of Beta.

**Table 8:** Treynor Ratio of the Funds

Name of the fund	1 Year	2 Year
SBI Magnum Equity ESG Fund	-4.82056	13.36143
Axis ESG Equity Fund	-15.13550	2.30433
ICICI Prudential ESG Fund	-9.56805	9.13302
Quant ESG Equity Fund	15.11520	41.19746
<b>NIFTY 100 ESG TR INR</b>	-4.34741	11.44195

**Source:** Compiled by researchers

It was shown in Table 8 that most of the funds underperformed the benchmark during both time frames. On the other hand, during the 1-year time frame, QESGEF and 2-year time frame QESGEF and SBIMEESGF overperformed the benchmark.

### E. Alpha of the Funds

It measures stock selection skill of fund managers, Alpha values are presented in Table 9

**Table 9:** Alpha value of the Funds

Name of the fund	1 Year	2 Year
SBI Magnum Equity ESG Fund	0.01080	0.18740
Axis ESG Equity Fund	-1.01747	-0.65400
ICICI Prudential ESG Fund	-0.19404	0.07041
Quant ESG Equity Fund	1.71985	1.92031

**Source:** Compiled by researchers

It appears from Table 9 that 3 out of 4 fund managers are not successful in picking quality stocks as the alpha values of the majority of funds in both time frames are negative. Only QESGEF is successful in picking the quality stock.

#### F. Beta of the Funds

Table 10 presents the beta value of the chosen ESG funds.

**Table 10:** Beta value of the Funds

Name of the fund	1 Year	2 Year
SBI Magnum Equity ESG Fund	0.92331	0.89481
Axis ESG Equity Fund	1.07227	0.99455
ICICI Prudential ESG Fund	0.76477	0.68285
Quant ESG Equity Fund	1.20672	0.94904

**Source:** Compiled by researchers

During the 2-year time frame, all the funds are defensive but in the 1-year time frame, it is evident from the table that AXISESGEF and QESGEF are aggressive.

#### G. R-squared (RSQ) Values of the Fund

The extent of diversification is used to reduce the degree of unique/unsystematic risk as measured by RSQ. Table 11 depicts the RSQ Value of the chosen fund.

**Table 11:** RSQ value of the Funds

Name of the fund	1 Year	2 Year
SBI Magnum Equity ESG Fund	0.90167	0.88821
Axis ESG Equity Fund	0.89735	0.84957
ICICI Prudential ESG Fund	0.80036	0.73687
Quant ESG Equity Fund	0.66008	0.54300

**Source:** Compiled by researchers

Table 11 reveals that the degree of diversification is quite satisfactory for most of the funds during both the chosen time frame.

## IX. FINDINGS AND ANALYSIS

The findings of the study based on research questions are briefly summarised hereunder:

- 1) 50% of the funds are concentrated in respect of 'top 10 holdings'.
- 2) The 'financial service sector' holds the highest percentage of holders for all the select funds.
- 3) CAGR value varies from -9.12938 to 25.33976 during the 1-year and during the 2-year, it varies from 9.39178 to 46.19789.
- 4) The value of 'standard deviations of funds returns' vary from 13.04823 to 22.67077 during 1 year period and during the 2-year period, it varies from 11.43644 to 18.51602.
- 5) The value of the 'Sharpe Ratio fluctuates' from -0.93933 to 0.80455 during the 1 year and during the 2-year period, it varies from 0.14773 to 2.11157. on the other hand, the value of the 'Trenor Ratio' varies from -15.13550 to 15.11520 and during the 2-year period, it varies from 2.30433 to 41.19746.
- 6) During 1-year and 2-year periods, the majority of fund managers are not successful in picking quality stocks.
- 7) During both the time frame, the majority of funds are defensive.
- 8) The fund managers are successful in reducing the unsystematic risk during the 1-year and 2-year time frame.

## X. CONCLUSION

In this empirical study, different parameters of mutual fund performance are examined such as funds return, volatility of funds return, risk-adjusted return in terms of both absolute and relative measures, systematic risks and unsystematic risks of funds in the different time frames. The objective is to assess the consistency of funds' performance in different periods. It is observed that most of the funds have generated lower returns than the specified benchmark index (NIFTY 100 ESG TR INR) throughout the period. In terms of 'risk-adjusted returns' measured by the 'Sharpe Ratio' and 'Treyner Ratio', most of the funds have underperformed the specified benchmark index. RSQ values of the funds have confirmed the fact that most of the funds are well diversified during the time frame. That apart, most of the funds have beta values less than 1 which implies that they are defensive. Moreover, negative alpha values of the funds throughout the study period indicate that the fund managers are not successful in picking quality stocks.

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