ANALYSING THE IMPACT OF ESG IMPLEMENTATIONS ON THE FINANCIAL PERFORMANCE OF INDIAN COMPANIES AND RELATED BIASES

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Chandan Dutta, MBA

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by

Chandan Dutta

Supervised by

Dr Anuja Shukla

APPROVED BY

Vasiliki Grougiou

Dissertation chair

RECEIVED/APPROVED BY:

Admissions Director

Dedication

To God, my parents, and everyone whom I know for you have made me.

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ABSTRACT

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Chandan Dutta
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Dissertation Chair: <Chair's Name>
Co-Chair: <If applicable. Co-Chair's Name>

This research studied the role of ESG implementations on the financial performance of companies within India. It also explored the relationships between ESG scores and financial performance, between industry sectors and ESG scores, and company biases towards specific ESG parameters. The study used content analysis of online reports and data, and conceptual modeling to identify the relationship between ESG and financial performance. The primary objective of the research was to study the impact of ESG implementations on the financials of companies within India and the aptitude of Indian companies towards various ESG parameters. This study provided insights on what kind of ESG implementations have a greater impact on firm financials. The study also builds a greater understanding of the intricate relationship between environmental, social and governance initiatives, and financial performance. Finally, the study adds to the existing literature with an Indian focus which now is very sparse.

Keywords: ESG (Environmental, Social, Governance), financial performance, company biases, content analysis, conceptual modeling, ESG parameters.

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CHAPTER I:

INTRODUCTION

1.1 Introduction

Environmental, social and governance (ESG) related considerations in business have been talked about and promoted by various entities, public and private, since around the middle of the 20th century. However, the topic failed to garner the kind of importance that it deserved. The discovery of the annual depletion of ozone above the Antarctic, first announced by Joe Farman, Brian Gardiner and Jonathan Shanklin, in a paper which appeared in Nature on May 16, 1985, was perhaps the first proven argument that industrialization and human activities have adversely impacted our climate. Still, it took around another decade for global and political business leaders from 192 countries to get together in Rio de Janeiro and pledge commitment to reducing greenhouse gases. This came to be known as the "Kyoto Protocol". This led to the gradual evolution of the ESG framework which allows any organization to measure and analyze how sustainably it is operating. In 2005, in a UN monitored initiative, large investment companies from 12 countries in the developed world got together to develop the "Principles of Responsible Investment (PRI)" to help put the ESG framework into practice. As of date, PRI has 7000 corporate signatories in 135 countries. HDFC Life Insurance, ICICI Prudential AMC, Axis AMC, ICICI Prudential Life Insurance, among others are some of the institutions from India that have become PRI signatories (Skancke and Reynolds, 2021).

The present and future relevance of the ESG framework in business is huge (Edmans and Kacperczyk, 2022). Of late, our planet has seen unprecedented weather fluctuations, floods, forest fires and other disasters where mankind has had a large role to play. In India, the idea of sustainable development is still at a nascent stage. ESG is roughly equated with CSR when in fact CSR is just a component of ESG. There is also a lack of awareness among investors at large regarding green investments and the return potential of such investments.

An increase in any kind of regulation is bound to impact the company bottom lines by increasing the costs of production. ESG regulations are no exception. Often the increase in production costs is transferred to consumers. While an informed consumer may not be averse to such price rice, many others may switch, impacting company profitability and thereby impacting investor returns adversely. However, in the long run, not only the company and its investors, but also its consumers benefit from ESG regulations either directly or indirectly. Classic examples confirming the same can be the regulations on CFC emissions that impact the earth's ozone layer, and which are primarily emitted by cooling devices, and the energy ratings for electronic and electrical devices. For better understanding, let us elaborate the second example regarding energy ratings. Electrical or electronic devices with higher energy ratings cost more, but in the long run, prove to be more cost efficient as a reduction in power consumption means lower electricity bills.

The increased emphasis on ESG has seen governments across the globe introduce newer regulations and mandatory compliance. The Government of India has made it mandatory for the top 1000 Indian companies based on market capitalization to prepare a report called the BRSR (Business responsibility and sustainability report) containing detailed ESG disclosures from FY 2022-23.

Although ESG has been around for quite some time and there have been several studies on the same, there are very few studies on ESG and its impact on the financial performance of Indian companies.

1.2 Research Problem

Focus on sustainability and thereby ESG is a growing trend across the globe and developing countries like India are fast catching on to that line of thought. The Ministry of Micro, Small and Medium Enterprises (MSME) in India is fervently promoting a scheme for MSMEs to obtain a "Zero Defect Zero Effect (ZED)" certification. The focus on MSMEs is also interesting because it is common understanding that changing existing processes for more ESG friendly ones will incur costs and small industries will always be at a disadvantage compared to their bigger counterparts. While a simple google search will produce umpteen results on American and European nations, very few studies on countries like India will show up. Hence, several problem statements can be identified and a few of the interesting ones among these are as follows ("A guide to ESG in the finance sector - The Corporate Governance Institute," n.d.; Ahmad et al., 2023; Chen and Xie, 2022; Ellili, 2022; Giannopoulos et al., 2022).

1. What is the impact of ESG regulations on the financial performance (FP) of selected Indian companies and investment funds?

2. Is there a relationship between ESG and FP, and how can sustainable development and CSR activities impact the bottom line of the selected companies and funds?
3. Will a historical study on the impact of ESG and its relationship with FP provide valuable insights on other dimensions like the effect of ESG conscious investors?
4. Is there a way to identify and select ESG protocols which enhances innovation, value creation, and overall business performance?
5. Detail the challenges and growth of ESG practices among Indian companies and investors.
6. Get insights into the impact of ESG regulations on the financial performance of companies and investment funds in India, and how sustainable development and CSR activities can improve the bottom line of these companies and investment funds.

1.3 Purpose of Research

The ultimate objective of the research was to study the impact of ESG regulations on the financials of companies within India and the aptitude of Indian investors, small and large, towards sustainable investments. This study provided insights on what kind of ESG regulations have a greater impact on firm bottom lines. The study also aids investors by building a greater understanding of green investments. Finally, the study added to the existing literature with an Indian focus which now is very sparse.

Given the broad nature of the above objectives, the following points summarize the objectives of this research.

1. To investigate the impact of ESG regulations on the financial performance of companies and investment funds in India.
2. To identify the relationship between ESG regulations and financial performance, and how sustainable development and CSR activities impact the bottom line of companies and investment funds in India.
3. To analyze if investor attitude affects ESG implementation in India and discuss the impact of ESG disclosure on corporate financial performance.
4. To identify the processes behind selecting ESG protocols and how these lead to increased innovation, value creation, and enhance financial performance.
5. To discuss the challenges and progress of ESG investing practices in India, and if possible, develop a framework for incorporating ESG factors into financial analysis and investment decision-making in India.

To contribute to the existing body of knowledge and provide recommendations for policymakers, investors, and companies on how to improve ESG regulations and practices in India.

1.4 Significance of the Study

This study is an attempt to comprehensively investigate the impact that ESG regulations have on the financial performance of companies by studying 155 companies across 31 industry sectors. Adherence to ESG regulations and reporting the same result in increased transparency and accountability of the concerned company in the eyes of its investors. This study shows if ESG compliance can have a negative impact on the financial performance of a company and if so, in which performance metric. Investors can benefit from this study by identfiying companies and industry sectors for ESG investing. Countries in well developed western economies have standard frameworks for ESG adherence as pointed out in the literature review. Also, most of the studies are based on developed countries and economies. India at present does not have such standard frameworks for ESG compliance. However, there are laws and regulations related to ESG. ESG compliances in India are often monitored by government agencies like the Securities and Exchange Board of India (SEBI) and the Ministry of Corporate Afairs (MCA). Often these agencies have individual compliance requirements. Such varied compliances increase compliance costs which is then passed on to the consumers. This study shows if ESG compliances result in significant increase in expenses and reduces sales.

CHAPTER II:
REVIEW OF LITERATURE

2.1 Impact of stakeholder pressures on ESG implementation and financial performance

A basic understanding of how businesses function allows for the speculation that an increase in stakeholder pressure should have a negative impact on business performance; at least in the initial stages when the concerned business adapt to the evolving business environment.

Baah et al. (2020) explored the effects of organizational and regulatory stakeholder pressures on green logistics practices and financial performance while they investigated if social and environmental reputation could be the missing link in mediating the connection among organizational and regulatory stakeholder pressure, green logistics practices and financial performance. They found that regulatory stakeholder pressures significantly influenced social reputation and financial performance. Environmental and social reputations do play mediating roles as proposed in hypothesized relationships. The findings in this literature show that organizational response to organizational and regulatory stakeholder pressures determine if such pressures act as friends or foes to green logistics practices, environmental reputation, social reputation, and financial performance.

In another work Baah et al. (2021) assessed how stakeholder pressures played a role in the adoption of green production practices and the performance of small and medium enterprises (SMEs) in developing countries. The authors used the institutional theory, stakeholder theory and the natural resource-based view, to explore the framework through which organizational and regulatory stakeholder pressures influenced the adoption of green practices by the SME, its reputation, and its environmental and financial performance. The authors observed that regulatory stakeholder pressures positively and significantly influenced the adoption of green production practices, firm reputation, and environmental performance. However, organizational stakeholder pressures and green production practices had a negative yet significant influence on financial performance.

Kalyar et al. (2020) studied how the adoption of green supply chain management practices affected the performance of companies in the textile industry. The authors chose this specific industry as it is one of the most environmentally unfriendly sectors and hence, must operate under substantial stakeholder and regulatory pressures. Their data could not establish a direct positive impact of green processes on the financial performance of the firm. The costs associated with setting up of new manufacturing processes and infrastructure coupled with the need for product redesign were identified as possible reasons behind the lack of direct positive impact. However, the authors did establish an indirect positive impact of green processes on financial performance. They found out that green purchases not only contributed towards improved environmental performances, but also resulted in better financial performance.

Nirino et al. (2021) carried out a study to find out how corporate controversies, related to corporate social responsibility (CSR) or the 'S' component of ESG, impacted the financial performance of companies. They tested a) if corporate controversies negatively impacted financial performance and b) if a greater degree of ESG implementation reduced the negative financial impact of corporate controversies. The researchers found that corporate controversies did have a negative impact on financial performance measures like Tobin's Q but did not have a significant negative impact on accounting measures like Return on Equity (ROE) and Return on Assets (ROA). For the second objective, the authors found that while ESG implementation positively impacted financial performance, it could not reduce the negative influence of corporate controversies.

The above studies clearly establish that an increase in regulatory and stakeholder pressure is bound to have a detrimental impact on a firm's financial bottom line. These studies also establish that a greater emphasis on ESG implementation, even if it is an outcome of increased regulatory pressures, should eventually improve financial performance even if in an indirect manner.

2.2 Impact of ESG implementation on financial performance

ESG implementation should be given emphasis irrespective of stakeholder pressures. This is even more important now with an increase in adverse climate changes, an increase in social inequities and an increasing number of corporate governance controversies. In the subsequent literature reviews, we are going to look at aggregate studies on the relationship between ESG and financial performance. We will also review country specific and industry sector specific studies in this area.

According to Friede et al. (2015), since the 1970s, researchers have been investigating the relationship between environmental, social, and governance criteria and corporate financial performance. Even though there have been more than 2000 studies in this area, there has been no sincere attempt at generalizing the findings, resulting in the knowledge on the financial effects of ESG implementations remaining fragmented. Hence Friede et al. (2015) attempted at combining the findings of about 2200 individual studies and established that around 90 percent of the studies reported a nonnegative ESG–CFP relation. The authors also reported that a large majority of the studies reported positive findings and highlighted that the positive ESG-CFP relation appeared stable over time.

J. Xie et al. (2019) investigated whether firms committed to ESG, can be efficient and profitable at the same time. To do this, the authors studied the relationship between corporate efficiency and sustainability. They also explored the relationship between specific ESG activities, like environmentally focused or socially oriented or governance related activities, and financial performance metrics which included corporate efficiency, return on assets, and market value. The researchers reported a positive association between corporate transparency on ESG data and corporate efficiency albeit at the moderate disclosure level. At the high or low disclosure levels, the findings were not supportive of the above association. The authors also report that governance activities and disclosures regarding the same saw the strongest positive linkage with efficiency, followed by social and environmental activities and disclosure. The findings of this study may be considered as evidence that voluntary ESG implementation can enhance corporate sustainability and thereby contribute towards corporate profitability. Generic studies on the ESG-CFP relationship have been largely supportive of a “non-negative” relationship between the two. A larger proportion of these supportive studies report a positive relationship.

2.3 A review of country and industry sector specific studies

Using a content analysis approach, and data from 209 listed Chinese companies from highly polluting manufacturing sectors, X. Xie et al. (2019) found that green process innovations positively impacted green product innovations, and both could improve the financial performance of companies. The authors also observed that the green image of companies also had a positive role to play in financial performance. However, the study found that subsidies on green processes do not moderate the cost impact of green product implementation and thereby the firm's financial performance.

Alexopoulos et al. (2018) examined Greek manufacturing companies to study the relationship between environmental and financial performance. Environmental performance was measured using the disclosures by the companies on ISO certifications and the ecological management and auditing reports, and ISO certification details. Profit margin and return on assets (ROA) served as the indicators of financial performance. This study provided some interesting observations. The first was that the link between environmental and financial performance exists irrespective of the manufacturing sector. The second is that ESG implementation lowers financial performance, contrary to the non-negative relationship established in most other studies. The third is a logical conclusion that firms with superior financial performance seemed to achieve better environmental performance. The authors also provide evidence that for a long run sustainable corporate performance, along with corporate actions, governmental initiatives are also necessary. Sharma et al. (2020), who studied the relationship between financial performance and the extent ESG disclosures in Indian companies, also found that ESG disclosures increase with increase in profitability.

A study by Hou Tony Chieh-Tse (2018) examined the relationship between CSR using CSR related awards as the indicator, and corporate financial performance (CFP) in Taiwan. This study found that socially responsible firms reported superior financial returns compared to those which did not pursue CSR activities. Another study on the impact of CSR and environment related sustainability initiatives on a firm's financial performance in Vietnam by Tien et al. (2020) also reported strong positive correlation among CSR, environmental sustainability, and financial performance.

Alsaifi et al. (2020) studied how corporate involvement in climate change initiatives, beyond what regulatory compliance required, affected its financial performance. Using the resource-based view of the firm as a theoretical framework and linking it to carbon disclosure through Carbon Disclosure Project, the authors conceptualized and investigated the impact of proactive carbon management policies and stakeholder communications regarding the same, on the financial performance of the top FTSE350 listed companies from 2007 to 2015. The researchers found strong evidence of a positive association between voluntary carbon disclosure and financial performance.

W. L. Lin et al. (2019) explored if there is a dynamic correlation between a firm’s adopting ecofriendly innovative strategies and its financial performance with regards to the firm size. For the study, the researchers collected data for 163 automotive firms across geographies. The empirical results showed a positive relationship between green innovation strategies and financial performance. It was also observed that firm size moderated the negative correlation between the two aforesaid variables.

Researchers Kalia & Aggarwal (2023) focused on healthcare companies to study the combined and individual component scores of ESG on financial performance. The results of this study showed different results for developed and developing economies. While healthcare companies in developed countries showed a negative or insignificant relationship, those in developing economies showed a positive relationship between ESG and financial performance. Hence, the authors concluded that the relationship between ESG and financial performance cannot be generalized.

In the following section, we shall review a few literatures which looks at investor attitudes towards companies with higher ESG scores compared to those with lower ESG scores.

2.4 Investor attitude towards ESG compliant investments

L. Lin et al. (2019) examined the effect of the CSR component of ESG on the financial performance of Taiwanese firms. The researchers found that while allocating resources to CSR activities like diversity, labor rights, training, health, and the like can be beneficial towards creating value for a firm, it had no significant effect on stock returns. An investigation of the book-to-market (BM) value showed that firms with a high BM value tended to focus more on green product innovations while those with a low BM value tended to focus more on CSR activities. A higher market value resulting in lower BM value may be indicative of investors valuing CSR attributes and providing premiums to these firms even though it may not reflect in stock returns.

Gibson Brandon et al. (2022) studied whether PRI signatory institutional investors exhibited better portfolio-level ESG scores. They found that for institutions domiciled outside of the US, PRI signatories who reported either partial or full incorporation of ESG information into their active equity holdings demonstrated better portfolio ESG scores compared to non-PRI signatories. For companies in the US, the researchers observed a substantial disconnect between claims and reality. This was the same for both partial and full disclosure. The reasons for this difference between US and non-US PRI signatories were primarily attributed to a mix of commercial incentives to become PRI signatories, regulatory uncertainties, and ESG market maturity, but strictly in the context of the US.

Serafeim (2020), Professor at Harvard Business School, analyzed how public sentiment influenced the market pricing of companies' sustainability activities and thereby the future stock returns of portfolios that considered ESG data. Combining ESG data with "big data" which measured public sentiment about corporate sustainability performance, Professor Serafeim found that the valuation premium for strong sustainability performance increased as a function of positive momentum in public sentiment.

However, contrary to Professor Serafeim, Dhasmana et al. (2023), in a study investigating the relationship between ESG index and investor sentiment in an emerging economy like India, found investor indifference towards ESG, thereby undermining the purpose of ESG reporting, and signaling a need to revisit the ESG policies and the approach towards its implementation.

2.5 Summary

In the literature review we examined the impact of stakeholder pressures on ESG implementation and financial performance. We also explored country and industry sector-specific literatures about the impact of ESG implementation on financial performance. We also reviewed literartures which studied investor attitudes towards ESG.

Investigations regarding the impact of stakeholder pressures on ESG implementation and financial performance showed that internal and external pressures from groups like investors, customers, regulators, and employees can influence ESG strategies and subsequent ESG implementations. For example, Baah et al. (2021) found that stakeholder pressures had a positive influence on green logistics and green production practices. However, financial performance varied across the companies the author studied. Kalyar et al. (2020) found that despite initial costs, implementation of green supply chain practices in the textile industry resulted in improved financial performance albeit indirectly.

A review of country specific and industry specific studies showed that ESG implementation and its impact on financial performance varied across regions and industry sectors. For example, X. Xie et al. (2019) found that green innovations improved financial performance in Chinese manufacturing. On the other hand Alexopoulos et al. (2018) found that in Greek manufacturing ESG implementation lowered financial performance.

As in the case of country specific and industry specific studies, we found investor attitudes towards ESG to be mixed. While some studies like Serafeim (2020) showed positive investor attitudes towards ESG, other studies like L. Lin et al. (2019) documented investor indifference towards ESG.

Our literature review identified the need for more research on the Indian situation. In general, we observed a lack of consistent findings. Some studies showed a positive relationship between ESG implementation and financial performance, while other studies revealed investor indifference towards ESG considerations.

CHAPTER III:

METHODOLOGY

3.1 Overview of the Research Problem

In India, all companies are showing an increased consideration towards environmental, social and governanace factors in their operations ever since ESG regulations were first introduced in the companies act of 2013. In 2022, the Securities and Exchange Board of India (SEBI) made ESG disclosures for the top 1000 listed companies' mandatory from 2023 (Bhatia, 2021).

Given the above developments and the fact that the number of India specific studies on the impact of ESG on the performance of companies being extremely few, any comprehensive study on the impact of ESG on the financial performance of companies will be extremely beneficial to regulators, companies, investors and for future research.

3.2 Operationalization of Theoretical Constructs

The financial impact of adherence to ESG regulations or ESG implementation was studied by observing and investigating trend changes in the reporting of sales and expenses by a company over a period of 10 years from 2013-2014 till 2022-2023. The same technique was applied on four published ratios, the PE (Price to Earning) ratio, the ROE (Return on Equity) ratio, the ROA (Return on Assets) ratio, and the ROCE (Return on Capital Employed) ratio, were also studied. The literature review showed that these were the most common ratios that were used by researchers in similar studies. These ratios are also the most dependable as the information about them is public information and open to scrutiny.

Deviation in trend was captured by identifying outliers. Outliers were identified using the IQR (Inter Quartile Range) and Z score approaches (Bajpai Naval., 2009; Bhandari, 2021). Line charts were also constructed on the data collected to not only observe visual discrepencies but also serve as a tertiary method to identify outliers.

In the IQR approach, a data point less than Quartile 1 minus 1.5 times the IQR (Q1 – 1.5xIQR) or greater than Quartile 3 plus 1.5 times IQR (Q3 + 1.5xIQR) is considered an outlier. The IQR approach is suited when data points are less and/or for univariate data. In this research, the financial metrices were studied in a 10 year window resulting in the number of datapoints being 10 or less per metric per company. Hence, this was the primary approach in identifying outliers.

In the Z score approach, a statistic called the Z score is calculated for each data point. If this score is not between -3 and 3, the data point is considered an extreme outlier. -3 and 3 stand for 3 standard deviations away from the mean in a normal distribution. The Z score approach is best suited in the case of a normally distributed data set. Normality assumptions are more meaningful for larger datasets. Hence, this was the secondary approach at identifying outliers.

The aforesaid techniques helped in the observational study to establish the impact of ESG implementation, if any, on the financial performance of a company. To study relationships between ESG scores and financial performance of companies we used Pearson’s correlation and tested the significance of the correlation values. To study relationships between ESG scores and Industry sectors, we used two factor ANOVA (Analysis of Variance) without replication. In the study for company biases towards a specific ESG implementation, we studied the relation between ESG scores and a specific ESG implementation using the completely randomized design one-way ANOVA.

3.3 Research Purpose and Questions

The research on the above topic made an attempt at answering the following questions:

1. Is the impact of increasing ESG implementations on company profitability statistically significant given the increasing ESG regulations?
2. Is there a relationship between ESG score and financial performance?
3. Is there a relation between ESG scores and Industry sectors?
4. Are there biases towards a specific ESG implementation like say "waste management"?

3.4 Research Design

In order to study if the impact of increasing ESG regulations on company and investment fund profitability is statistically significant in India, the financials of 5 companies each from 31 industry sectors totalling to 155 companies were analysed from 2012 till 2023. The entire population dataset can be found under Table 3.7. For the 155 companies, the sales, expenses, PE ratio, ROE ratio, ROCE ratio and ROA ratio were captured for a 10 year window ending with the financial year ending of March 2023. The data was obtained primarily from two aggregating sources: Moneycontrol and Screener. Both these sources have been aggregating financial data for more than 15 years and are considered reliable.

From the data collected, the financial ratios, PE, ROE, ROCE and ROA were used without any modification. In case of sales/revenues and expenses, the change from one year to the next was considered. The logic behind considering the changes in sales and expenses in place of actual values was that it will help capture the impact of ESG implementation better. For example, if a regulation is passed that power generation companies need to reduce emissions by 30 percent, it is bound to impact production and sales. Now, it is easier to understand a 40 percent impact on revenues versus an INR 400,000 impact.

To study which of E, S, and G is the primary focus of companies and investment funds in India, the ESG scores by rating agencies like MSCI, CRISIL, etc. for the 155 companies will be studied. Based on the ESG rating technique and the subsequent ESG score, it will be possible to identify the ESG focus area. If the ESG focus area cannot be identified directly, a comparison of the rating techniques should give a broad focus area as the scores in these areas will be higher in every technique.

For the third question to study if the increasing AUM of ESG funds in India a result of increasing investor awareness or increasing regulations in India, 10 ESG funds will be analysed in detail from 2021. The reason for selecting 2021 has the first year is because the inception of 6 of the 10 ESG funds were in 2020. The inception of 2 funds is 2021. 1 fund was started in 2006 and the remaining fund was started in 2019.

3.5 Population and Sample

CRISIL (Credit Rating Information Services of India Limited) is an Indian analytical company providing ratings, research, and risk and policy advisory services. It is a subsidiary of the American company S&P Global. CRISIL, was the first credit rating agency in India (“CRISIL: Making markets function better,” n.d.). CRISIL has provided ESG ratings for 601 Indian companies, both listed and unlisted, across 56 industry sectors. The CRISIL ESG rating system works on a five-point scale. The order of these ratings from the highest to lowest is “Leadership”, “Strong”, “Adequate”, “Below Average”, and “Weak”. If a five point scale is applied, “Leadership” will be a 5 and

"Weak" will be a 1. This is the population for this research. The entire population dataset can be found in Table 3.7.

All rating points of "Below Average" and "Weak" were ignored. In other words, all ratings of "2" and below were ignored. The above list was trimmed down to 480 listed companies from 53 industry sectors with an ESG rating of "Adequate" or above. However, certain industry sectors had over 50 companies and some others had less than 2. Besides, financial data from 2012 was not available for a number of companies.

Hence, our final sample considered 5 companies from 31 industry sectors for whom financial data was available from 2012 and which had a CRISIL ESG rating of "Adequate" or more. An equal number of companies from each industry sector will make inter-industry comparisions more reliable. Our sample size will be 155 companies. This sample is provided in Table 3.7.

There are 53 mutual funds speciafically designated as ESG funds in India. However, all of these funds are variants of 10 ESG funds. Given the small population, the entire population will be considered in the study.

3.6 Data Collection Procedures

This research on its entirity is based on secondary data collection. The secondary data types were a combination of online organizational data published by the organization studied or by credible third party publishers of financial data. The data collected from one source was cross-checked with data from other sources. Mismatches were investigated. The order of preference in case of data value mismatch was to first consider the data value mentioned in the organizational publication. If the data item did not show in organizational reports or if orgnaizational reports were not available, the value which appeared in a majority of online publications was accepted as the correct value. In case the data was available in less than three online sources, than the data value which followed the existing trend more closely was accepted. The data item with the lowest standard deviation from the mean in a given dataset was considered to follow the existing trend more closely in comparision to the others.

Table 3.6.1 - List of main websites

Website	**Focus Area**	**Update Frequency**	**Key Features**	**URL**
BSE India	Bombay Stock Exchange	Daily	1. Industry classification 2. Company data 3. Analyst reviews	bseindia.com
NSE India	National Stock Exchange	Daily	1. Industry classification 2. Company data 3. Analyst reviews	nseindia.com
CRISIL	Financial Research	Daily	1. Ratings 2. Market intelligence and analytics 3. Risk solutions	crisil.com
Morningstar	Repository of financial data of Indian and foreign companies	Daily	1. Market data 2. Analyst reports	morningstar.in
Morningstar Sustainalytics	ESG Research and Data	Quarterly	1. ESG Ratings 2. Climate data and research 3. Sustainable	sustainalytics.com

			financing and lending	
MSCI	ESG Research and Data	Quarterly	1. ESG Ratings 2. Climate data and research 3. Sustainability analytics	msci.com
FTSE Russell	ESG Research and Data	Quarterly	1. ESG Ratings 2. Climate data and research 3. Sustainability analytics	ftserussell.com
Money Control	Repository of financial data of Indian companies	Daily	1. Company financial data archive 2. Analyst reports 3. Market data	moneycontrol.com
Screener	Repository of financial data of Indian companies	Daily	1. Company financial data archive 2. Analyst reports 3. Market data	screener.in
Equitymaster	Repository of financial data of Indian companies	Daily	1. Company financial data archive 2. Analyst reports 3. Market data	equitymaster.com
Investing	Repository of financial data of Indian companies	Daily	1. Market data 2. Analyst reports	in.investing.com

Markets Mojo	Repository of financial data of Indian companies	Daily	1. Market data 2. Analyst reports	marketsmojo.com
Value Research	Repository of financial data of Indian companies	Daily	1. Market data 2. Analyst reports	valueresearchonline.com

The financial data were obtained primarily from the sources listed in table 3.6.1 like Moneycontrol, Morningstar India, Screener India, Value Research etc. ESG data were obtained primarily from four sources, CRISIL, MSCI, Morningstar, and Sustainalytics. The complete list of data sources can be found in Table 3.6.1.

Data on profit and loss, cash flow, and balance sheets, were obtained for all the companies shortlisted in the sampling process between March 2014 till March 2023. A very small number of the sample companies did not have the data within the sampling timeframe in the popular websites considered. In such cases, the data was located using internet searches and/or from the company website.

The profit and loss data for a company captures the sales and expenses of that company. Adherence to new regulations in the company processes should have an impact on its sales and expenses. Any change in sales and expenses will definitely impact profitability. For example, Let us assume that the government mandates that steel manufacturing companies use only a certain grade of coal, and a company A is using coal below that grade to reduce expenses. The new mandate is going to affect the expenses of company A. The mandate may also impact sales as existing clients may question the quality of the end product given the changes in existing manufacturing processess. Using this analogy, the adherence to ESG regulations should also have an impact on the financial performance of any company.

3.7 Observational Data Analysis

The following table has the listing of selected companies with their industry classification. The analysis following the table is presented for each sector starting with "Auto Ancillary" sector and ending with "Tyre" sector.

Table 3.7 – Complete List of Selected Companies

Industry Sector	**Selected Companies**
Auto Ancillary	Schaeffler India Limited, ZF Commercial Vehicle Control Systems India Limited, Bharat Forge Limited, Endurance Technologies Limited, Samvardhana Motherson International Limited
Auto OEM	Mahindra and Mahindra Limited, Tata Motors Limited, Maruti Suzuki India Limited, Escorts Kubota Limited, TVS Motor Company Limited
Building material	Astral Limited, Cera Sanitaryware Limited, Century Plyboards India Limited, Greenply Industries Limited, Kajaria Ceramics Limited
Cement	Shree Cement Limited, Ambuja Cements Limited, Sagar Cements Limited, UltraTech Cement Limited, ACC Limited
Chemical	Pidilite Industries Limited, Tata Chemicals Limited, P I Industries Limited, Rallis India Limited, Coromandel International Limited
Construction EPC	Engineers India Limited, Hindustan Construction Company Limited, Dilip Buildcon Limited, ITD Cementation India Limited, NBCC (India) Limited
Consumer Durable	Voltas Limited, Amber Enterprises India Limited, Blue Star Limited, Dixon Technologies (India) Limited, Johnson Controls-Hitachi Air Conditioning India Limited
Consumer electricals	Havells India Limited, Polycab India Limited, V-Guard Industries Limited, Symphony Limited, Bajaj Electricals Limited, Finolex Cables Limited

Consumer Products	Page Industries Limited, Titan Company Limited, Bata India Limited, Relaxo Footwears Limited, The Supreme Industries Limited
Financial Services	UTI Asset Management Company Limited, Motilal Oswal Financial Services Limited, Central Depository Services India Limited, JM Financial Limited, Multi Commodity Exchange of India Limited
FMCG	Marico Limited, Hindustan Unilever Limited, Tata Consumer Products Limited, Britannia Industries Limited, Godrej Consumer Products Limited
Healthcare	Dr. Lal Pathlabs Limited, Healthcare Global Enterprises Limited, Narayana Hrudayalaya Limited, Thyrocare Technologies Limited, Fortis Healthcare Limited
Heavy Engineering	AIA Engineering Limited, Bharat Heavy Electricals Limited, Thermax Limited, K E C International Limited, ISGEC Heavy Engineering Limited
Holding	L&T Finance Holdings Limited, Equitas Holdings Limited, Bajaj Finserv Limited, IDFC Limited, Cholamandalam Financial Holdings Limited
Hotel	Chalet Hotels Limited, Mahindra Holidays and Resorts India Limited, The Indian Hotels Company Limited, EIH Limited, Delta Corp Limited
Industrial and capital goods	ABB India Limited, Cummins India Limited, EPL Limited, Apar Industries Limited, Sterlite Technologies Limited
Insurance	ICICI Lombard General Insurance Company Limited, ICICI Prudential Life Insurance Company Limited, SBI Life Insurance Company Limited, Max Financial Services Limited, General Insurance Corporation of India
Internet	Info Edge (India) Limited, Indiamart Intermesh Limited, Nazara Technologies Limited, Just Dial Limited, Infibeam Avenues Limited
IT	Infosys Limited, MindTree Limited, Wipro Limited, Tata Consultancy Services Limited, HCL Technologies Limited
Lending	Housing Development Finance Corporation Limited, Axis Bank Limited, Mahindra and Mahindra Financial Services Limited, ICICI Bank Limited, Equitas Small Finance Bank Limited
Logistics	Blue Dart Express Limited, Redington Limited, Transport Corporation of India Limited, Gateway Distriparks Limited, VRL Logistics Limited

Media	Network18 Media and Investments Limited, TV Today Network Limited, DB Corp Limited, Jagran Prakashan Limited, PVR Limited
Metal	Tata Steel Limited, Steel Authority of India Limited, Hindalco Industries Limited, JSW Steel Limited, Hindustan Zinc Limited
Oil and Gas	Gail India Limited, Mahanagar Gas Limited, Petronet LNG Limited, Indraprastha Gas Limited, Gujarat State Petronet Limited
Paints	Kansai Nerolac Paints Limited, Asian Paints Limited, Berger Paints India Limited, Akzo Nobel India Limited, Indigo Paints Limited
Pharmaceuticals	Cipla Limited, Dr. ReddyS Laboratories Limited, Abbott India Limited, Biocon Limited, Aurobindo Pharma Limited
Power Thermal	The Tata Power Company Limited, NTPC Limited, JSW Energy Limited, Adani Power Limited, NLC India Limited
Real Estate	DLF Limited, Godrej Properties Limited, Brigade Enterprises Limited, Phoenix Mills Limited, Mahindra Lifespace Developers Limited
Telecom	Tata Communications Limited, Bharti Airtel Limited, Indus Towers Limited, Mahanagar Telephone Nigam Limited, Vodafone Idea Limited
Textiles	Welspun India Limited, Arvind Limited, Himatsingka Seide Limited, Gokaldas Exports Limited, Vardhman Textiles Limited
Tyre	Ceat Limited, Apollo Tyres Limited, Balkrishna Industries Limited, JK Tyre and Industries Limited, Goodyear India Limited

3.7.1 The Auto Ancillary Industry

The Auto Ancillary industry sector comprises of all organizations involved with the production of vehicular components and equipments needed in automobile manufacturing (“India Auto Ancillary Market Report 2022-2027,” n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.1 below gives the financial data for 10 years of the selected companies in this industry segment.

For Bharat Forge Ltd., the PE Ratio of 156 in the year ending March 2021 exceeded the upper outlier of 73.17. Even though the company reported low earnings given the pandemic restrictions on economic activity, the high market expectations caused an inflation in its share price resulting in the high PE ratio ("Bharat Forge Ltd. Live Share Price, Stock Analysis and Price Estimates," n.d.). The ROA in the same year was 2.81 percent which was below the lower outlier of 3.66 percent. A rough estimate of ROA can be made by dividing net profit by the total assets of the company. Hence, the cause for the low ROA was the low earnings given the pandemic ("Bharat Forge Annual Report 2020-2021," n.d.).

For Endurance Technologies Ltd., the 2020 ROE value of 18.46 percent and ROA value of 14.33 percent, exceeded their respective upper outlier limits of 17.56 percent and 13.09 percent. The high values of ROE and ROA were primarily attributed to significant increase in the profit margin of the company which it managed by strategic investments in acquiring companies like Adler SpA and Grimeca Srl ("Endurance Technologies Annual Report 2019-2020," n.d.).

In the case of Samvardhana Motherson International Ltd., sales in 2020 decreased by 43.91 percent and thereby exceeded the lower limit of 19.44 percent. Similarly the expenses in 2020 decreased by 43.68 percent and thus exceeded the lower limit of 23.09 percent. Samvardhana Motherson International Ltd. Has substantial business interests in China. These interests were severely impacted towards the end of 2019 due to the onset of Covid19 and this reduced sales which in turn reduced associated expenses ("Samvardhana Motherson Annual Report 2019-2020," n.d.). In 2022, the company recorded an increase in revenues to the tune of 60.23 percent which exceeded the upper limit in increase in sales of 40.50 percent. The increase was attributed to post pandemic recovery, strategic acquisitions like CIM Tools Private Limited, and increase in the demand of automotive components for advanced features, electric vehicles, etc (“Samvardhana Motherson Annual Report 2021-2022,” n.d.)

Schaeffler India Ltd. recorded an increase of 119.55 percent in sales and an increase of 117.86 percent in expenses in 2017 compared to the previous financial year. These increases far exceeded the upper limit in the increase in sales of 46.80 percent and the upper limit in the increase in expenses of 46.33 percent. The increases were primarily attributed to mergers and expansions like the merger with INA Bearings (India Limited, n.d.). The ROCE of 13 percent and ROA of 6.99 percent in 2020 were below the lower limit outlier values of 14.88 percent for ROCE and 7.36 percent for ROA. The pandemic caused a sudden decrease in demand. This resulted in supply chain and production disruptions which directly impacted profitability. In addition to this, the fixed costs associated with maintaing operations further dented financial performance resulting in low ROCE and ROA values (gorodenkoff, n.d.). Schaeffler India Ltd. reported an increase in sales of 47.82 percent in 2021. This was more than the upper limit of 46.80 percent. The increase was due to improved demand with the easing of lockdowns, new business opprtunities in neighbouring countries, and expansion into sectors like robotics and construction equipment (“Schaeffler India Limited Annual Report 2020-2021,” n.d.).

For ZF Commercial Vehicle Control Systems India Ltd.(formerly WABCO), the drop in sales and expenses in 2020 were statistically significant. Sales dropped by 32.38 percent against a lower limit drop of 20.59 percent. Expenses dropped by 31.40 percent against a lower limit drop of 11.78 percent. The primary reasons were the severe impact

Table 3.7.1 – Financial Data for 10 years of Selected Companies in the Auto Ancillary Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Bharat Forge Ltd. *	Δ Sales	8.15%	33.80%	-4.71%	-10.82%	37.54%	22.65%	-30.00%	-19.98%	71.28%	21.07%	-69.75%	91.48%
	Δ Expenses	4.45%	26.94%	-6.25%	-7.52%	35.45%	22.10%	-23.10%	-17.59%	55.23%	24.74%	-57.60%	76.79%
	PE Ratio	38.27	47.11	27.74	44.28	40.10	27.21	14.54	**156.00**	31.00	56.21	1.78	73.17
	ROE	18.58%	22.14%	19.88%	17.12%	16.40%	19.20%	6.70%	-2.33%	16.47%	7.88%	-3.55%	32.61%
	ROCE	16.00%	23.00%	19.00%	14.00%	19.00%	22.00%	9.00%	5.00%	13.00%	13.00%	4.00%	28.00%
	ROA	7.02%	11.28%	9.72%	7.62%	8.45%	10.78%	4.88%	**2.81%**	8.39%	7.36%	3.66%	12.85%
Endurance Technologies Ltd. **	Δ Sales	14.88%	12.56%	4.40%	5.32%	19.71%	16.62%	-8.45%	-3.78%	19.53%	18.77%	-15.77%	38.64%
	Δ Expenses	13.26%	11.56%	3.67%	5.24%	17.73%	15.31%	-9.67%	-3.55%	21.75%	20.47%	-15.52%	36.71%
	PE Ratio				53.50	39.00	32.70	43.20	46.50	40.50	36.40	26.98	55.58
	ROE	15.14%	15.66%	15.31%	14.17%	15.15%	17.20%	**18.46%**	14.48%	12.69%	12.27%	12.26%	17.56%
	ROCE	20.44%	21.24%	21.70%	19.77%	24.34%	27.14%	24.59%	19.76%	18.03%	16.82%	13.89%	29.56%
	ROA	8.00%	9.65%	10.32%	9.84%	10.42%	12.09%	**14.33%**	11.40%	10.20%	9.95%	7.94%	13.09%
Samvardhana Motherson International Ltd. **	Δ Sales	5.40%	9.45%	7.75%	18.14%	17.69%	2.25%	**-43.91%**	-13.26%	**60.23%**	29.13%	-19.44%	40.50%
	Δ Expenses	3.43%	12.20%	3.76%	17.10%	20.90%	2.50%	**-43.68%**	-4.61%	44.70%	35.83%	-23.09%	45.78%
	PE Ratio	73.40	48.20	47.00	91.10	45.90	49.60	24.60	76.00	92.10	45.50	2.41	119.11
	ROE	28.22%	24.60%	29.28%	11.78%	14.22%	12.64%	14.39%	7.72%	3.76%	2.46%	-11.23%	42.02%
	ROCE	22.59%	20.91%	26.55%	16.87%	11.95%	16.23%	9.13%	3.43%	3.11%	3.05%	-17.71%	42.47%
	ROA	14.60%	13.77%	18.45%	9.99%	9.97%	8.99%	9.76%	3.84%	3.08%	1.99%	-6.42%	24.37%

Schaeffler India Ltd. *	**Δ Sales**	16.40%	5.75%	4.91%	**119.55%**	15.76%	-4.41%	-13.74%	**47.82%**	23.48%	5.23%	-20.10%	46.80%
	Δ Expenses	14.01%	2.18%	6.41%	**117.86%**	17.32%	-2.49%	-13.45%	42.26%	21.43%	5.89%	-22.83%	46.33%
	PE Ratio	22.28	38.93	37.04	32.90	25.08	42.43	39.98	48.73	43.65	48.83	19.83	57.45
	ROE	12.31%	13.80%	15.32%	13.22%	16.71%	15.51%	12.41%	9.27%	17.22%	20.51%	6.92%	22.10%
	ROCE	22.00%	25.00%	22.00%	31.00%	26.00%	19.00%	**13.00%**	25.00%	29.00%	27.00%	14.88%	33.88%
	ROA	10.67%	11.90%	10.52%	12.20%	11.15%	10.10%	**6.99%**	12.85%	15.35%	14.50%	7.36%	15.88%
ZF Commercial Vehicle Control Systems India Ltd. *	**Δ Sales**	15.03%	21.35%	36.01%	12.83%	24.48%	10.92%	**-32.38%**	-3.42%	36.43%	35.47%	-20.59%	64.71%
	Δ Expenses	22.44%	21.19%	35.14%	12.61%	24.87%	12.37%	**-31.40%**	-1.07%	38.18%	29.81%	-11.78%	52.79%
	PE Ratio	32.90	89.93	58.37	51.85	55.23	44.86	73.47	120.63	102.06	62.26	3.02	135.49
	ROE	15.56%	13.98%	19.05%	16.86%	17.88%	15.85%	8.38%	5.20%	6.72%	13.19%	-0.95%	27.14%
	ROCE	23.00%	21.00%	27.00%	24.00%	26.00%	23.00%	11.00%	7.00%	9.00%	19.00%	-3.13%	39.88%
	ROA	12.23%	10.87%	13.33%	12.26%	12.59%	12.07%	7.29%	4.17%	5.38%	10.53%	1.87%	18.48%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

of Covid19 on the commercial vehicle industry due to the lockdowns, and the post acquisition complications of WABCO Holdings Inc., US by ZF Friedrichshafen AG ("ZF") (“ZF Commercial Annual Report 2019-2020,” n.d.).

For the Auto Ancillary industry, a total of 14 financial values were flagged as having statistically significant deviations but nothing was specific to ESG.

3.7.2 The Auto OEM Industry

OEM stands for “Original Equipment Manufacturer”. The Auto OEM industry sector comprises of all organizations involved with the production of automobiles (“What Is an OEM? | Cars.com,” n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.2 below gives the financial data for 10 years of the selected companies in this industry segment.

Escorts Kubota Ltd. recorded a PE ratio of 50.32 which was higher than the upper outlier value of 44.79. The high PE was due to an increase in stock price from Rs. 138.49 to Rs. 531.63 with EPS declining more than 100 percent (“Escorts Kubota Ltd. Live Share Price, Stock Analysis and Price Estimates,” n.d.).

For Mahindra & Mahindra Ltd., in 2014, the ROE of 22.39 percent exceeded the upper limit of 17.95 percent, and the ROA of 12.01 percent exceeded the upper limit of 11.40 percent. High profitability and profitable acquisitions like that of SsangYong Motor were the primary reasons for the high ROE and ROA (“Mahindra & Mahindra Annual Report 2013-2014,” n.d.). In 2020, Mahindra & Mahindra, like many other companies, faced significant challenges from the pandemic induced disruptions resulting in significant losses. Besides, there was a major push towards strategic restructuring. These contributed to a decline in profitability and efficient utilization of assets. As a result, the ROE of 3.86 percent was below the lower limit of 9.86 percent and the ROA of 2.63 percent was below the lower limit of 5.44 percent ("Mahindra & Mahindra Annual Report 2019-2020," n.d.). The downtrend and the challenges faced during the financial year ending March 2020 continued into the next financial year. This was primarily driven by the prolonged effects of the pandemic. Profitability dropped from 2.92 percent to 0.59 percent. As a result, in 2021, the PE ratio of -149.80, the ROE of 0.77 percent, and the ROA of 0.45 percent were below the respective lower limit values of 7.35, 9.86 percent, and 5.44 percent ("Mahindra & Mahindra Annual Report 2020-2021," n.d.). In 2023, Mahindra & Mahindra reported a 47.01 percent increase in sales and a 46.85 percent increase in expenses. These increases were beyond the upper limit increase in sales percentage of 28.91 and the upper limit increase in expenses percentage of 29.12. The increase in sales was primarily operating revenues and this business growth lead to increase in input costs, R&D costs, and increase in financing costs ("Mahindra & Mahindra Annual Report 2022-2023," n.d.).

The PE ratio of Maruti Suzuki India Ltd. in 2022 was 58.88 which was greater than the upper outlier value of 48.01. The ratio was high as there was a drop of 11 percent in earnings, and an increase of 12 percent in share price ("Maruti Suzuki Annual Report 2021-2022," n.d.).

In 2020 Tata Motors Ltd. reported negative ROE and ROA percentages of -39.64 and -11.64 which were lower than the lower outlier values of -32.60 percent for ROE and -10.74 percent for ROA. The primary reason for such values was that the net profit margin was -16.59 percent due to a 36.86 percent drop in sales (Mr et al., 2020). Rough estimates of ROE and ROA uses the profit margin as the value in the numerator. In 2023, Tata Motors Ltd. reported a PE ratio of 57.89 which was higher than the upper limit value of 30.33. This year Tata Motors reported positive earnings compared to the negative

Table 3.7.2 – Financial Data for 10 years of Selected Companies in the Auto OEM Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Escorts Kubota Ltd. *	**Δ Sales**	7.72%	-36.65%	-15.53%	21.56%	22.04%	24.04%	-7.02%	20.27%	3.87%	15.95%	-42.61%	59.55%
	Δ Expenses	6.14%	-35.30%	-16.58%	19.40%	16.51%	23.10%	-6.92%	14.06%	6.91%	22.00%	-37.16%	52.19%
	PE Ratio	5.73	20.46	24.18	**50.32**	28.90	20.38	17.20	19.92	30.28	39.17	5.18	44.79
	ROE	13.22%	4.17%	4.81%	8.10%	15.67%	17.91%	15.15%	17.34%	9.69%	7.78%	-3.66%	27.05%
	ROCE	17.00%	7.00%	8.00%	12.00%	22.00%	25.00%	19.00%	26.00%	15.00%	11.00%	-3.75%	36.25%
	ROA	6.94%	2.18%	2.55%	4.55%	8.08%	9.71%	9.15%	12.13%	8.17%	5.89%	-1.14%	14.93%
Mahindra & Mahindra Ltd. **	**Δ Sales**	0.58%	-3.47%	4.85%	8.81%	9.52%	11.22%	-14.73%	-1.89%	28.66%	**47.01%**	-19.39%	28.91%
	Δ Expenses	0.75%	-2.57%	4.30%	9.91%	6.86%	11.11%	-14.14%	-2.11%	29.02%	**46.85%**	-19.70%	29.12%
	PE Ratio	18.93	19.28	22.75	19.77	21.78	15.80	14.37	**-149.80**	16.32	12.87	7.35	27.03
	ROE	**22.39%**	17.25%	14.29%	13.60%	14.37%	14.01%	**3.86%**	**0.77%**	12.66%	15.10%	9.86%	17.95%
	ROCE	16.68%	13.85%	12.49%	14.28%	16.95%	16.86%	13.26%	12.35%	13.80%	19.76%	8.27%	21.95%
	ROA	**12.01%**	10.08%	9.02%	9.11%	9.18%	9.10%	**2.63%**	**0.45%**	7.35%	8.64%	5.44%	11.40%
Maruti Suzuki India Ltd. *	**Δ Sales**	0.47%	14.11%	15.14%	18.24%	17.24%	7.84%	-12.10%	-6.98%	25.54%	33.10%	-21.21%	41.51%
	Δ Expenses	-1.87%	11.97%	12.29%	18.76%	17.40%	10.82%	-8.94%	-4.89%	27.14%	29.02%	-24.37%	44.10%
	PE Ratio	20.88	29.34	20.42	24.20	33.97	26.35	22.82	47.21	**58.88**	30.51	8.26	48.01
	ROE	13.27%	15.66%	17.96%	20.26%	18.52%	16.24%	11.49%	8.36%	7.01%	13.29%	3.54%	25.92%
	ROCE	16.00%	19.00%	23.00%	24.00%	24.00%	19.00%	9.00%	11.00%	6.00%	15.00%	-3.00%	37.00%
	ROA	9.09%	11.06%	12.79%	14.34%	13.01%	11.92%	9.03%	6.03%	5.13%	9.68%	3.77%	17.86%

**Tata Motors Ltd. ** **	**Δ Sales**	-18.64%	0.14%	15.90%	2.37%	33.32%	18.83%	-36.86%	-32.48%	56.64%	38.93%	-79.40%	95.15%
	Δ Expenses	-16.55%	8.13%	4.97%	7.97%	27.60%	14.55%	-27.80%	-34.78%	52.47%	31.01%	-64.43%	77.60%
	PE Ratio	8.14	11.24	9.64	18.04	10.50	-1.75	-1.82	-7.45	-12.59	**57.89**	-21.08	30.33
	ROE	1.74%	-31.93%	-0.26%	-11.48%	-5.13%	9.11%	**-39.64%**	-12.57%	-6.97%	12.14%	-32.60%	21.55%
	ROCE	2.75%	16.02%	5.31%	-1.19%	5.04%	11.57%	-7.18%	0.37%	1.07%	9.96%	-11.83%	21.18%
	ROA	0.67%	-9.48%	-0.10%	-4.12%	-1.74%	3.31%	**-11.64%**	-3.68%	-2.17%	4.41%	-10.74%	7.21%
TVS Motor Company Ltd. *	**Δ Sales**	11.12%	26.06%	10.59%	9.28%	25.05%	20.00%	-9.81%	2.00%	24.12%	26.87%	-13.22%	47.64%
	Δ Expenses	10.71%	26.08%	9.06%	9.57%	24.16%	19.82%	-10.12%	1.61%	22.90%	25.89%	-12.79%	45.83%
	PE Ratio	24.76	38.19	35.74	40.03	45.10	31.75	22.63	46.77	39.28	38.52	22.10	50.49
	ROE	16.05%	24.78%	23.60%	23.07%	24.37%	22.23%	19.03%	15.53%	17.20%	24.14%	8.15%	33.51%
	ROCE	20.00%	21.00%	23.00%	23.00%	24.00%	24.00%	17.00%	17.00%	22.00%	27.00%	15.00%	29.00%
	ROA	7.35%	7.56%	9.87%	9.45%	9.26%	8.01%	6.33%	6.00%	7.51%	10.66%	4.37%	12.42%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

earnings in 2022. The negative earnings by Tata was attributed to liquidity crisis, high fuel prices, change in axle norms and transition to BS VI compliant emmision norms for its vehicles. Transition to BS VI was related to governmental ESG regulations *VR*(“Tata Motors Annual Report 2021-2022,” n.d.).

For TVS Motor Company Ltd, no outliers were reported.

For the Auto OEM industry, a total of 14 financial values were flagged as having statistically significant deviations. Enquiries into the reasons for such deviations showed that Tata Motors Ltd. reported an impact on earnings in 2022 due to a transition to BS VI compliant emmision norms for its vehicles.

3.7.3 The Building Materials Industry

The Building Materials industry sector comprises of all organizations involved with the production of construction material like bricks, windows frames, wood, tiles, and the like (“What is the Building Materials Construction Industry, and its Construction 4.0 Development? | Market Prospects,” n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.3 below gives the financial data for 10 years of the selected companies in this industry segment.

None of the financial values for Astral Ltd. were reported as outliers.

For Century Plyboards (India) Ltd, in 2022, the increase in sales was 42.03 percent which was above the upper limit of 39.72 percent and the increase in expenses was 38.70 percent which was above the upper limit value of 37.01 percent. The increase in sales was due to revival in demand post the pandemic. The increase in expenses were due to increase in taxes, purchase of stock in-trade, and low baseline benefit given the

Table 3.7.3 – Financial Data for 10 years of Selected Companies in the Building Materials Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Astral Ltd. **	**Δ Sales**	30.64%	16.73%	6.31%	11.28%	9.15%	18.90%	6.56%	22.07%	38.44%	33.56%	-18.54%	56.72%
	Δ Expenses	30.69%	18.95%	6.19%	7.76%	8.40%	18.78%	5.25%	14.41%	42.16%	37.95%	-21.83%	57.51%
	PE Ratio	82.99	69.84	48.86	45.33	61.08	71.06	56.95	80.33	84.01	78.65	25.09	112.81
	ROE	24.62%	11.25%	9.82%	12.76%	12.56%	12.27%	15.09%	19.88%	20.18%	16.72%	2.22%	29.21%
	ROCE	18.99%	9.26%	8.23%	11.09%	11.31%	18.75%	19.90%	27.11%	26.88%	23.36%	-5.88%	39.52%
	ROA	11.30%	6.54%	5.89%	8.09%	8.31%	7.92%	10.34%	14.71%	14.67%	12.48%	1.63%	18.52%
Century Plyboards (India) Ltd. *	**Δ Sales**	13.53%	21.88%	4.54%	8.92%	10.38%	15.10%	0.84%	-7.45%	**42.03%**	20.66%	-14.82%	39.72%
	Δ Expenses	11.49%	15.86%	2.81%	10.21%	11.48%	18.18%	0.82%	-10.16%	**38.70%**	23.07%	-14.75%	37.01%
	PE Ratio	10.07	34.85	22.47	30.27	44.51	31.18	16.37	36.93	50.84	27.03	4.41	55.62
	ROE	20.56%	38.26%	31.95%	26.64%	19.15%	15.23%	13.81%	15.11%	20.11%	20.02%	2.84%	38.49%
	ROCE	17.00%	27.00%	26.00%	23.00%	17.00%	18.00%	17.00%	20.00%	31.00%	28.00%	3.00%	41.00%
	ROA	7.31%	14.38%	14.89%	11.96%	9.46%	9.00%	9.70%	10.74%	14.67%	13.92%	2.41%	21.38%
Finolex Industries Ltd. **	**Δ Sales**	14.62%	-0.01%	-0.18%	5.41%	5.19%	13.38%	-3.75%	17.24%	33.81%	-4.48%	-21.81%	35.99%
	Δ Expenses	9.91%	8.97%	-8.75%	-2.91%	10.17%	10.55%	2.05%	-2.43%	**45.44%**	13.43%	-18.95%	28.09%
	PE Ratio	13.93	**73.69**	17.76	20.40	27.43	17.36	15.03	10.84	9.11	**44.74**	-2.99	42.86
	ROE	21.54%	6.06%	24.38%	15.36%	10.79%	13.83%	16.79%	23.69%	27.26%	4.90%	-5.85%	40.56%
	ROCE	14.96%	**4.37%**	21.48%	21.32%	15.13%	20.87%	19.04%	30.08%	25.19%	6.43%	5.35%	31.10%
	ROA	8.90%	**2.56%**	12.83%	11.91%	8.64%	10.68%	11.51%	17.30%	**20.02%**	3.82%	2.86%	18.44%

Greenply Industries Ltd. *	**Δ Sales**	8.00%	-27.59%	9.59%	-2.98%	-46.42%	44.11%	-1.25%	-19.95%	35.67%	19.32%	-64.60%	65.78%
	Δ Expenses	8.97%	-28.50%	8.34%	-4.09%	-41.83%	41.88%	-1.98%	-19.40%	35.73%	20.79%	-65.68%	67.94%
	PE Ratio	5.99	15.32	13.76	22.81	28.27	20.10	21.03	34.33	28.46	18.68	0.04	43.02
	ROE	20.14%	25.54%	20.88%	16.23%	12.61%	23.77%	12.50%	13.95%	17.60%	14.20%	3.98%	30.72%
	ROCE	18.00%	16.00%	25.00%	20.00%	12.00%	11.00%	23.00%	18.00%	24.00%	23.00%	6.75%	32.75%
	ROA	6.62%	10.65%	11.03%	8.81%	6.61%	7.90%	4.16%	7.87%	10.52%	11.45%	1.40%	16.14%
Kajaria Ceramics Ltd. *	**Δ Sales**	18.36%	18.65%	9.40%	3.48%	2.10%	5.62%	-5.65%	-1.91%	30.76%	20.37%	-21.76%	42.78%
	Δ Expenses	20.26%	18.37%	5.60%	1.46%	3.21%	7.85%	-5.47%	-4.79%	32.46%	24.86%	-24.94%	46.63%
	PE Ratio	21.26	36.52	32.90	36.68	38.75	41.39	23.41	47.87	43.05	48.72	20.56	55.88
	ROE	24.62%	23.70%	23.80%	21.51%	17.39%	14.39%	14.89%	16.48%	17.76%	14.81%	3.50%	34.95%
	ROCE	35.00%	37.00%	41.00%	38.00%	30.00%	25.00%	21.00%	22.00%	24.00%	20.00%	1.50%	57.50%
	ROA	12.29%	14.06%	16.23%	16.27%	13.76%	12.02%	12.71%	13.08%	13.45%	11.62%	10.01%	16.37%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

pandemic impact on business in the previous year ("Century Plyboards (India) Limited Annual Report 2021-2022," n.d.).

In 2015, Finolex Industries Ltd. reported a PE ratio of 73.69 compared to an upper limit of 42.86, ROCE of 4.37 percent against a lower limit value of 5.35 percent, and ROA value of 2.56 percent compared to the low outlier of 2.86 percent. High inventory costs increased expenses reducing earnings which caused the PE to be high. The low profits directly resulted in lower ROCE and ROA ("Finolex Industries Limited Q4 FY15 Earnings Conference Call," 2015). In 2022, Finolex Industries reported an increase of 45.44 percent which exceeded the upper outlier limit of 28.09 percent. The ROA value was also higher than the upper outlier limit of 18.44 percent at 20.02 percent ("Finolex Annual Report 2021-2022," 1930). Increased operational revenues resulted in an increase in input costs. Increased revenues also increased profits thereby increasing ROA. In 2023, the company reported a high PE ratio of 44.74 against an upper outlier value of 42.86. This was because earnings dropped while share price contunued to be high. The low profit was due to forex losses ("Finolex Industries Q1 2023 Concall Highlights - Value Educator," n.d.).

No significant deviations in the financial measures were reported for Greenply Industries Ltd and Kajaria Ceramics Ltd.

Out of the 8 deviations in financial values studied in the Building Materials industry, none were attributed to environmental, social, or governance related factors.

3.7.4 The Cement Industry

The Cement sector includes all companies involved in the production and/or selling of cement. Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.4 below gives the financial data for 10 years of the selected companies in this industry segment.

For ACC Ltd., the increase in expenses in 2023 was 53.61 percent. This exceeded the statistically significant upper value of 30.43 percent. The increase in expenses was driven by the increase in revenues. High raw material costs and high fuel prices were the primary contributors to the increase in expenses ("ACC Integrated Report 2022-2023," n.d.).

For Ambuja Cements Ltd., the increase in sales and expenses in 2023 were recorded at 42.96 percent and 55.75 percent respectively. These increases exceeded the statistically significant upper limit of 34.93 percent for sales and 34.02 percent for expenses. Increased market demand led to an increase in revenues. The increase in expenses was driven by the increase in revenues. High input costs contributed to the increase in expenses ("Ambuja Cement Annual Report 2021-2023," n.d.).

The ROE and ROA values of Sagar Cements Ltd. in 2014 were -10.62 percent and -3.83 percent. Both these values were below the lower limit values of -6.73 percent for ROE and -3.15 percent for ROA. Sagar Cements reported negative earnings in 2014. This was due very low sales in its primary market of Andhra Pradesh ("Sagar Cements Annual Report 2013-2014," n.d.). The ROE, ROCE, and ROA values of 56.90 percent, 53.53 percent, and 30.53 percent in 2015 for Sagar Cements exceeded the upper limit values of 17.89 percent for ROE, 22.73 percent for ROCE, and 9.46 percent for ROA. Sagar Cements invested heavily in capacity expansion which resulted in an increase in revenues. The increase in profitability directly resulted in high values of ROE, ROCE, and ROA ("Sagar Cements Annual Report 2014-2015," n.d.).

Shree Cement Ltd. reported a drop in sales of 11.90 percent in 2016. This drop was below the statistically significant value of 10.98 percent. India went through an

Table 3.7.4 – Financial Data for 10 years of Selected Companies in the Cement Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
ACC Ltd. **	**Δ Sales**	-1.98%	5.39%	-0.75%	-5.41%	19.03%	11.36%	6.88%	-12.40%	16.93%	37.85%	-27.48%	41.34%
	Δ Expenses	3.35%	6.94%	0.99%	-5.10%	16.30%	10.96%	3.65%	-13.00%	13.84%	**53.61%**	-15.73%	30.43%
	PE Ratio	25.33	22.62	43.46	37.97	35.72	18.63	19.71	21.24	22.34	35.38	0.33	56.82
	ROE	14.00%	14.18%	7.00%	6.95%	9.77%	14.31%	11.79%	11.17%	12.79%	6.19%	-1.32%	22.71%
	ROCE	12.41%	13.14%	6.54%	6.44%	13.93%	13.97%	17.08%	14.40%	17.47%	9.61%	4.34%	20.27%
	ROA	9.06%	9.21%	4.60%	4.48%	6.14%	9.40%	7.95%	7.80%	8.70%	4.26%	-0.99%	14.95%
Ambuja Cements Ltd. *	**Δ Sales**	-5.74%	8.82%	-5.20%	-2.34%	13.70%	8.61%	2.74%	-2.54%	22.92%	**42.96%**	-24.94%	34.93%
	Δ Expenses	3.34%	7.34%	-1.75%	-4.53%	13.50%	11.13%	0.57%	-8.34%	23.37%	**55.75%**	-22.29%	34.02%
	PE Ratio	23.86	39.00	37.07	35.62	20.53	18.60	20.89	26.96	53.68	28.10	-0.98	59.32
	ROE	14.76%	7.87%	5.58%	7.34%	9.73%	8.70%	10.39%	10.97%	7.44%	12.90%	2.64%	15.74%
	ROCE	16.00%	18.00%	11.00%	9.00%	9.00%	8.00%	9.00%	12.00%	14.00%	14.00%	1.50%	21.50%
	ROA	13.93%	10.91%	9.69%	10.86%	10.73%	11.44%	12.60%	13.74%	7.79%	9.90%	6.81%	15.62%
Sagar Cements Ltd. **	**Δ Sales**	-13.31%	85.86%	-30.98%	-14.02%	37.17%	19.63%	-5.80%	60.14%	15.28%	24.79%	-79.69%	102.32%
	Δ Expenses	-5.14%	3.61%	2.70%	-7.62%	29.10%	27.44%	-7.08%	34.45%	30.21%	34.59%	-52.86%	79.61%
	PE Ratio	-11.21	1.80	14.01	29.92	38.12	49.59	19.53	8.88	27.89	63.23	-28.70	74.94
	ROE	**-10.62%**	**56.90%**	8.87%	1.59%	5.99%	2.95%	3.36%	15.83%	8.01%	2.35%	-6.73%	17.89%
	ROCE	-1.68%	**53.53%**	13.32%	5.39%	10.05%	6.20%	6.21%	20.93%	11.29%	8.31%	-3.71%	22.73%
	ROA	**-3.83%**	**30.53%**	5.02%	1.02%	3.75%	1.77%	2.07%	9.09%	3.85%	1.51%	-3.15%	9.46%

Shree Cement Ltd. *	**Δ Sales**	5.48%	9.52%	**-11.90%**	**55.86%**	14.34%	19.30%	1.55%	6.43%	12.92%	17.69%	-10.98%	33.56%
	Δ Expenses	12.13%	13.66%	-16.46%	**48.06%**	20.93%	23.28%	-9.35%	5.59%	22.81%	30.40%	-16.69%	47.07%
	PE Ratio	31.85	92.57	37.81	44.39	40.72	68.31	40.34	46.01	36.50	71.18	2.01	99.17
	ROE	16.71%	8.08%	16.70%	17.40%	15.56%	9.91%	12.14%	15.16%	13.76%	7.26%	1.55%	25.33%
	ROCE	18.00%	8.62%	17.99%	19.86%	18.43%	11.76%	15.78%	19.55%	17.07%	9.01%	4.42%	26.67%
	ROA	10.74%	5.33%	12.08%	11.99%	9.14%	6.26%	8.12%	10.99%	10.15%	5.14%	0.42%	17.23%
UltraTech Cement Ltd. **	**Δ Sales**	0.60%	13.10%	3.78%	1.50%	23.76%	33.28%	2.17%	6.29%	16.60%	20.95%	-23.35%	45.78%
	Δ Expenses	7.05%	14.51%	2.30%	-0.62%	29.36%	37.36%	-1.99%	-0.66%	19.67%	27.42%	-37.95%	63.55%
	PE Ratio	27.18	37.63	35.75	40.29	48.81	45.68	16.27	35.61	25.95	43.45	9.23	62.72
	ROE	12.54%	10.68%	10.95%	10.97%	8.60%	8.64%	14.24%	12.32%	14.34%	9.28%	5.35%	16.77%
	ROCE	8.92%	7.62%	8.78%	13.96%	10.88%	9.60%	12.03%	15.32%	14.78%	12.37%	2.38%	20.27%
	ROA	7.20%	5.72%	6.18%	6.68%	4.10%	**3.48%**	7.59%	6.64%	8.76%	5.65%	3.56%	9.17%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

economically significant event of “demonetization” of 1000 and 2000 rupee denominations. The drop in sales was attributed to the economic slowdown caused by this event (“Shree Cement Ltd Annual Report 2015-2016,” n.d.). Shree Cement Ltd. reported an increase in sales and expenses of 55.86 percent and 48.06 percent respectively in 2017. These increase percentages exceeded the upper limit increase in sales value of 33.56 percent and the upper limit increase in sales value of 47.07 percent. The primary reason was the increase in capacity for cement production undertaken by the company (“Beating the slowdown: Capacity addition helps Shree Cement | Company Top Features - Business Standard,” n.d.).

For UltraTech Cement Ltd., the ROA in 2019 was 3.48 percent. This value was below the lower limit value of 3.56 percent albeit only slightly. The ROA value was impacted by the integration of a company called Binani Cement into UltraTech. Other contributing factors were high leverage (borrowings), and increased input costs (“UltraTech Cement Annual Report 2018-2019,” 2019).

Out of the 12 deviations in financial values studied in the Cement industry, none were attributed to environmental, social, or governance related factors.

3.7.5 The Chemical Industry

The Chemical Industry sector includes all companies involved in the production of fertilizers, industrial, speciality and other chemicals (“Introduction to the Chemical Industry |,” n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.5 below gives the financial data for 10 years of the selected companies in this industry segment.

For Coromandel International Ltd. the increase in sales of 55.12 percent and the increase in expenses of 56.59 percent in 2023 were above the upper limit of 45.29 percent in the increase in sales and the upper limit of 45.61 percent in the increase in expenses. A diversified portfolio, especially the 63% growth in the "Nutrients" segment, resulted in increased sales and associated expenses when compared to the previous year ("Coromandel Annual Report 2022-2023," n.d.).

For P I Industries Ltd., all the financial values were with the statistically significant bounds.

For Pidilite Industries Ltd. the increase in sales of 43.11 percent and the increase in expenses of 52.58 percent in 2022 were above the upper limit of 32.11 percent in the increase in sales and the upper limit of 44.77 percent in the increase in expenses. The acquisition of Tenax India Stone Products and post pandemic recovery were the primary drivers driving the increase ("Pidilite Industries Annual Report 2021-2022," n.d.).

Rallis India Ltd. recorded a drop in sales of 14.97 percent and a drop in expenses of 14.22 percent in 2016. The lower limit of the drop in sales was 2.90 percent and the lower limit of the drop in expenses was 7.31 percent. In 2016, India was impacted by a deficient monsoon. Rallis India being primarily invested in agrichemicals saw a significant drop in its sales ("Rallis India Annual Report 2015-2016," n.d.). In 2019, Rallis India Ltd. recorded an increase in sales of 33.62 percent and an increase in expenses of 36.43 percent, both of which were above the upper limit values of 23.21 percent for sales and 27.63 percent for expenses. The company reported strong performance of business in its Latin America business. It also reported an increase in product realisation. All of these contributed to an increase in sales. The increase in demand resulted in an increase in expenses driven primarily by an increase in the import costs of raw materials from China ("RALLIS INDIA Annual Report 2018-2019," 2019).

For Tata Chemicals Ltd., in 2017, there was a drop in sales of 54.88 percent and a

Table 3.7.5 – Financial Data for 10 years of Selected Companies in the Chemical Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Coromandel International Ltd. *	**Δ Sales**	9.59%	20.30%	1.67%	-12.66%	10.42%	19.33%	-0.66%	7.92%	34.84%	**55.12%**	-22.01%	45.29%
	Δ Expenses	10.44%	20.71%	2.65%	-15.56%	8.57%	19.83%	-3.19%	7.00%	39.93%	**56.59%**	-21.39%	45.61%
	PE Ratio	17.81	19.46	15.51	19.07	22.21	20.60	15.03	17.10	15.35	12.84	9.43	25.32
	ROE	15.63%	18.25%	13.57%	16.50%	23.87%	21.45%	24.67%	25.81%	24.04%	25.46%	5.58%	35.87%
	ROCE	18.00%	20.00%	15.00%	18.00%	23.00%	23.00%	25.00%	31.00%	33.00%	39.00%	2.00%	46.00%
	ROA	4.89%	4.85%	3.96%	5.57%	6.94%	6.71%	10.36%	14.67%	12.59%	14.34%	-5.41%	22.50%
P I Industries Ltd. *	**Δ Sales**	38.58%	21.63%	8.04%	8.59%	0.04%	24.77%	16.40%	31.87%	16.42%	23.50%	-10.32%	45.32%
	Δ Expenses	34.47%	19.72%	6.60%	3.67%	3.36%	27.05%	15.11%	29.32%	17.57%	19.84%	-16.05%	50.02%
	PE Ratio	20.15	33.68	25.02	25.10	33.21	34.72	35.39	46.40	50.69	37.39	12.49	51.53
	ROE	27.07%	27.43%	26.61%	28.24%	19.10%	17.95%	17.43%	13.82%	13.79%	17.08%	2.49%	41.63%
	ROCE	36.00%	41.00%	36.00%	34.00%	25.00%	25.00%	23.00%	21.00%	17.00%	22.00%	2.38%	55.38%
	ROA	14.06%	14.99%	16.02%	20.02%	14.03%	12.97%	10.76%	10.19%	10.75%	14.53%	5.98%	20.21%
Pidilite Industries Ltd. *	**Δ Sales**	16.39%	13.41%	7.57%	2.83%	10.05%	13.82%	3.92%	-1.85%	**43.11%**	19.12%	-11.53%	32.11%
	Δ Expenses	17.74%	13.48%	-0.03%	0.06%	11.63%	18.20%	1.02%	-3.84%	**52.58%**	22.87%	-26.39%	44.77%
	PE Ratio	34.99	60.00	37.63	41.68	48.43	68.45	61.73	81.29	103.31	93.94	-8.70	130.14
	ROE	23.04%	22.57%	30.43%	24.78%	26.93%	22.30%	25.06%	20.23%	18.86%	17.65%	14.38%	31.35%
	ROCE	33.00%	31.00%	43.00%	41.00%	38.00%	35.00%	35.00%	29.00%	27.00%	24.00%	17.88%	48.88%
	ROA	16.23%	15.37%	21.55%	18.02%	20.64%	18.30%	18.94%	14.18%	13.63%	12.99%	8.03%	25.23%

Rallis India Ltd. **	**Δ Sales**	15.08%	-1.07%	**-14.97%**	8.01%	7.96%	**33.62%**	13.48%	8.05%	6.54%	13.24%	-2.90%	23.21%
	Δ Expenses	14.26%	-0.99%	**-14.22%**	6.01%	10.11%	**36.43%**	14.61%	5.72%	10.72%	18.40%	-7.31%	27.63%
	PE Ratio	23.02	30.37	26.23	18.99	32.75	20.67	18.43	21.50	28.19	40.81	7.47	43.23
	ROE	20.52%	18.22%	13.73%	23.63%	12.00%	11.99%	13.15%	14.36%	9.68%	5.31%	4.10%	25.15%
	ROCE	18.69%	16.69%	12.72%	21.95%	11.30%	16.63%	15.63%	17.89%	12.75%	7.72%	5.43%	24.88%
	ROA	12.87%	11.79%	9.63%	17.15%	8.16%	7.13%	7.57%	8.83%	5.74%	3.28%	1.23%	17.27%
Tata Chemicals Ltd. **	**Δ Sales**	-0.03%	15.57%	-18.41%	**-54.88%**	-3.26%	-3.79%	-8.30%	-0.35%	24.27%	30.81%	-35.43%	39.92%
	Δ Expenses	2.59%	16.24%	-19.15%	**-60.89%**	-7.48%	-3.47%	-10.00%	8.73%	15.64%	31.70%	-44.28%	48.82%
	PE Ratio	-3.16	8.45	5.51	6.85	3.16	5.78	0.81	1.82	11.70	10.69	-6.68	16.88
	ROE	7.64%	10.55%	8.23%	7.82%	**15.60%**	6.91%	**57.10%**	3.61%	5.22%	6.42%	1.40%	15.11%
	ROCE	5.63%	7.92%	6.73%	8.83%	8.04%	7.46%	7.18%	4.64%	6.33%	7.80%	4.24%	10.08%
	ROA	3.91%	5.37%	5.07%	5.41%	**12.46%**	5.86%	**51.06%**	3.26%	4.71%	5.74%	3.26%	7.38%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

drop in expenses of 60.89 percent. Both these values were below the lower limit values of 35.43 percent for sales and 44.28 percent for expenses. Tata Chemicals sold its urea and customized fertilisers business which resulted in a drop in sales and subsidy income. The drop in expenses was driven primarily by the decline in sales along with associated factors like a drop in input and inventory costs (“Tata Chemicals Annual Report 2016-2017,” n.d.). In 2018, the ROE and ROA for Tata Chemicals were 15.60 percent and 12.46 percent. Both the values were above the upper limit value of 15.11 percent for ROE and 7.38 percent for ROA. The high ROE and ROA were due to an increase in profitability attributed to effective restructuring with initiatives like the sale of the urea business, and increased operational efficiency (“Tata Chemicals Annual Report 2017-2018,” n.d.). In 2020, the ROE and ROA for Tata Chemicals were 57.10 percent and 51.06 percent. Both the values were above the upper limit value of 15.11 percent for ROE and 7.38 percent for ROA. The high ROE and ROA were due to effective debt management, increased profitability driven by the sale of speciality chemicals, and expansion (“Tata Chemicals Annual Report 2019-2020,” n.d.).

For the Chemicals industry, a total of 14 financial values were flagged as having statistically significant deviations. Enquiries into the reasons for such deviations did not reveal anything specific to ESG.

3.7.6 The Construction EPC Industry

The Construction EPC sector includes all companies involved in infrastructure development projects. EPC stands for Engineering, Procurement, and Construction. Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.6 below gives the financial data for 10 years of the selected companies in this industry segment.

For Dilip Buildcon Ltd., the increase in sales in 2016 of 55.91 percent was above the upper limit value of 51.95 percent. The company's expansion into mining, irrigation, urban development, and other such areas resulted in the significant increase in sales ("Dilip Buildcon Annual Report 2015-2016," n.d.).

The ROA of 12.80 percent for Engineers India Ltd. (EIL) in 2014 was way above the upper limit of 9.46 percent. EIL reported higher operating profit margin even though sales and expenses came down indicating better asset utilization. This resulted in higher ROA value. ("Engineers India Annual Report 2013-2014," n.d.).

For Hindustan Construction Company Ltd. (HCC) the ROE and ROA in 2019 were -142.25 percent and -18.20 percent respectively. The two values were much below the statistically significant lower limits of -78.82 percent for ROE and -5.09 percent for ROA. HCC incured a huge interest expense which resulted in negative earnings subsequently resulting in the high negative values for ROE and ROA (House et al., n.d.). In 2020, HCC reported a drop in sales of 22.14 percent and a drop in expenses of 16.90 percent. Both these drops were below the lower limits of a 15.85 percent drop in sales and a 9.16 percent drop in expenses. The drop was attributed to discontinued/halted projects, high interest expenses, and overall sectoral issues ("Hindustan Construction Company Annual Report 2019-2020," n.d.). In 2021, HCC reported a drop in sales of 28.12 percent, a 20.46 percent drop in expenses, an ROE value of -92.57 percent, and an ROA value of -5.25 percent. All these values were below their respective lower limit values of 15.85 percent for a drop in sales, 9.16 percent for a drop in expenses, -78.82 percent for ROE, and -5.09 percent for ROA.The cause for these values was the impact of

Table 3.7.6 – Financial Data for 10 years of Selected Companies in the Construction EPC Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Dilip Buildcon Ltd. **	**Δ Sales**	21%	13.25%	**55.91%**	24.59%	51.91%	18.08%	-1.63%	2.47%	-2.14%	12.65%	-23.14%	51.95%
	Δ Expenses	28.82%	17.09%	58.10%	23.35%	49.14%	18.09%	1.01%	3.37%	5.92%	8.46%	-24.79%	58.80%
	PE Ratio				13.38	23.76	15.89	8.07	29.76	-6.42	33.00	-13.33	50.82
	ROE	27.58%	16.69%	20.12%	19.47%	25.24%	23.87%	11.78%	8.15%	1.98%	4.81%	11.76%	43.75%
	ROCE	0.17%	8.50%	10.28%	26.07%	24.50%	24.95%	21.66%	20.81%	7.23%	13.23%	-13.32%	46.06%
	ROA	6.97%	3.20%	4.12%	5.42%	6.63%	7.01%	3.80%	2.84%	0.76%	1.91%	2.17%	11.42%
Engineers India Ltd. *	**Δ Sales**	-27.21%	-6.09%	-11.79%	-4.10%	23.40%	36.69%	31.06%	-3.06%	-7.57%	14.43%	-49.72%	63.68%
	Δ Expenses	-30.08%	11.20%	-11.89%	-12.80%	20.02%	51.27%	32.79%	0.25%	-8.39%	17.84%	-56.74%	65.21%
	PE Ratio	15.75	20.81	20.59	29.40	26.12	20.12	8.95	17.39	25.80	12.08	3.57	37.14
	ROE	19.14%	11.88%	9.86%	11.60%	16.37%	15.72%	17.61%	14.22%	7.88%	17.65%	3.22%	25.75%
	ROCE	28.00%	16.00%	16.00%	18.00%	23.00%	25.00%	29.00%	25.00%	25.00%	22.00%	10.00%	34.00%
	ROA	**12.80%**	7.87%	6.75%	7.52%	8.53%	7.90%	8.55%	5.94%	7.97%	7.58%	5.43%	9.46%
Hindustan Construction Company Ltd. **	**Δ Sales**	7.69%	0.60%	2.88%	1.20%	8.25%	-2.17%	**-22.14%**	**-28.12%**	**79.63%**	11.31%	-15.85%	22.49%
	Δ Expenses	0.09%	-0.26%	1.98%	2.44%	8.62%	3.05%	**-16.90%**	**-20.46%**	**53.21%**	6.74%	-9.16%	14.81%
	PE Ratio	32.61	24.40	17.64	53.26	29.43	-1.50	-0.74	-2.68	4.53	-10.07	-45.53	72.40
	ROE	6.38%	5.88%	5.25%	2.20%	2.79%	**-142.25%**	-14.31%	**-92.57%**	-32.69%	35.15%	-78.82%	56.45%
	ROCE	1.82%	1.98%	2.11%	1.06%	1.50%	13.32%	10.22%	7.89%	26.06%	17.71%	-14.17%	28.57%
	ROA	0.93%	0.84%	0.94%	0.53%	0.69%	**-18.20%**	-1.54%	**-5.25%**	-1.35%	3.02%	-5.09%	4.51%

ITD Cementation India Ltd. *	**Δ Sales**	-3.83%	8.87%	96.19%	13.24%	-35.79%	22.16%	-6.38%	3.08%	47.19%	43.85%	-62.89%	99.21%
	Δ Expenses	-2.38%	16.03%	95.23%	11.96%	-40.35%	25.09%	-8.96%	8.98%	47.23%	44.29%	-58.08%	98.03%
	PE Ratio	17.32	39.40	-28.63	45.55	46.45	27.63	11.84	84.86	15.75	14.43	-29.11	87.89
	ROE	3.41%	**-11.66%**	8.73%	11.79%	11.79%	8.01%	4.10%	1.47%	6.08%	10.03%	-5.60%	18.89%
	ROCE	11.00%	5.00%	13.00%	20.00%	24.00%	18.00%	14.00%	9.00%	13.00%	18.00%	1.75%	27.75%
	ROA	8.73%	4.16%	7.84%	11.25%	11.07%	12.60%	10.82%	6.67%	8.10%	7.97%	3.17%	15.71%
NBCC (India) Ltd. **	**Δ Sales**	24.66%	15.23%	23.86%	6.91%	-5.60%	23.64%	-26.73%	-5.97%	11.99%	20.69%	-40.54%	60.97%
	Δ Expenses	25.54%	15.73%	24.94%	6.54%	-6.32%	24.79%	-24.29%	-6.31%	10.71%	19.28%	-42.87%	63.18%
	PE Ratio	39.70	41.41	39.43	44.11	46.70	31.07	36.73	41.76	35.73	27.61	27.45	50.20
	ROE	21.92%	20.94%	20.74%	20.97%	18.31%	24.54%	5.24%	11.92%	10.30%	12.07%	-1.55%	34.47%
	ROCE	18.54%	20.25%	30.55%	28.06%	26.53%	31.58%	14.28%	13.08%	16.95%	22.36%	1.85%	43.17%
	ROA	5.89%	5.84%	5.59%	5.38%	4.36%	4.62%	1.02%	2.42%	2.15%	2.81%	-2.01%	10.07%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source: x* (Business News Today: moneycontrol.com, n.d.)

the pandemic on the financial performace of HCC ("Hindustan Construction Company Annual Report 2020-2021," n.d.). A low baseline and robust post pandemic recovery resulted in an increase in sales of 79.63 percent and an increase in expenses of 53.21 percent. These increases were above the upper limit value of 22.49 percent for sales and 14.81 percent for expenses ("Hindustan Construction Company Annual Report 2021-2022," n.d.).

The ROE for ITD Cementation India Ltd. in 2016 was -11.66 percent. This value was lower than the lower limit outlier value of -5.60 percent. ITD saw delays in project execution, increased costs, and shelving of some NHAI projects which resulted in negative earnings. The negative earnings resulted in the negative ROE ("ITD Cementation India Ltd. Annual Report 2014-2015," n.d.).

For NBCC (India) Ltd., all the financial values were within the statistically significant bounds.

Out of the 13 deviations in financial values studied in the Construction EPC industry, none were attributed to environmental, social, or governance related factors.

3.7.7 The Consumer Durable Industry

The Consumer Durable sector includes all companies involved in the production of long lasting consumer products like refrigerators, televisions, cell phones, etc which are not purchased very often. While there is nothing definitive on the time duration, durables are expected to last at least three years ("Nondurable Goods in Economics: Definition, Nondurable vs. Durable Goods, and Impact on Consumer Behavior - 2024 - MasterClass," n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.7 below gives the financial data for 10 years of the selected companies in this industry segment.

For Amber Enterprises India Ltd, all the finacial values measured were within the statistically significant upper and lower bounds.

The ROE and ROA for Blue Star Ltd in 2015 were reported as 24.40 percent and 6.95 percent respectively. These were above the statistically significant upper bound limits of 24.13 percent for ROE and 6.43 percent for ROA. These increases were due to increased profitability during that financial year which the company achieved through the sale of properties reported as exceptional income ("Blue Star Annual Report 2014-2015," n.d.). Blue Star Ltd reported a decrease in expenses of 18.82 percent which was less than the lower limit decrease of 18.02 percent in 2021. The decrease was in expected lines as sales got severly impacted due to the pandemic ("Blue Star Annual Report 2020-2021," n.d.). In 2022, Blue Star Ltd reported an increase in sales of 38.64 percent and a corresponding increase in expenses of 37.08 percent. Both these values were more than the upper limit increase in sales value of 37.94 percent and the upper limit increase in expenses value of 36.52 percent. These increases were attributed to market recovery post the pandemic ("Blue Star Annual Report 2021-2022," 2022). In 2023, the ROE for Blue Star Ltd was 28.67 percent (above the upper limit of 24.13 percent) and the ROA was 7.64 percent (above the upper limit of 6.43 percent). The increase in sales continued to be robust at 36.39 percent albeit less than the statistically significant upper limit of 37.94. The growth was driven by additional low cost capital raised via QIP (Qualified Institutional Placement). The increased profitability due to the low cost QIP issue resulted in the statistically significant high ROE and ROA ("Blue Star surges 15%, hits record high on launch of Rs 1,000 cr QIP issue | News on Markets - Business Standard," n.d.).

Table 3.7.7 – Financial Data for 10 years of Selected Companies in the Consumer Durable Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Amber Enterprises India Ltd. *	**Δ Sales**	2.00%	29.00%	-9.53%	59.71%	22.47%	14.38%	37.25%	-23.54%	36.67%	60.07%	-42.79%	85.04%
	Δ Expenses	0.52%	27.87%	-11.40%	63.55%	21.24%	14.88%	39.45%	-23.02%	38.98%	61.26%	-48.73%	92.17%
	PE Ratio					54.17	27.71	32.76	216.73	246.85	125.69	-195.67	427.75
	ROE	9.18%	10.90%	8.09%	6.84%	7.02%	9.49%	10.91%	3.38%	3.02%	2.96%	-3.50%	17.16%
	ROCE	12.00%	14.00%	13.00%	15.00%	16.00%	14.00%	13.00%	7.00%	5.00%	6.00%	-0.38%	22.63%
	ROA	7.97%	9.58%	9.61%	10.71%	11.46%	9.05%	8.49%	4.72%	3.68%	4.09%	-0.58%	15.71%
Blue Star Ltd. **	**Δ Sales**	0.77%	9.42%	14.77%	16.82%	4.23%	11.29%	1.10%	-19.66%	**38.64%**	36.39%	-19.74%	37.94%
	Δ Expenses	-0.06%	8.77%	14.68%	16.53%	4.01%	10.69%	1.91%	**-18.82%**	**37.08%**	35.11%	-18.02%	36.52%
	PE Ratio	23.35	51.08	33.51	53.77	50.38	34.35	30.89	54.20	60.41	33.17	3.48	82.86
	ROE	14.33%	**24.40%**	18.22%	12.20%	13.94%	12.67%	14.22%	7.17%	12.66%	**28.67%**	5.79%	24.13%
	ROCE	14.25%	24.22%	14.36%	19.18%	19.21%	25.66%	21.44%	12.64%	19.79%	28.71%	3.63%	35.47%
	ROA	3.39%	**6.95%**	4.77%	4.27%	4.13%	3.75%	3.64%	1.89%	3.16%	**7.64%**	1.66%	6.43%
Dixon Technologies (India) Ltd. *	**Δ Sales**	46.48%	4.99%	12.29%	31.39%	34.35%	14.30%	45.37%	54.55%	31.88%	-6.51%	-24.17%	74.40%
	Δ Expenses	46.90%	4.70%	12.00%	27.56%	34.87%	14.07%	44.46%	55.78%	33.33%	-7.92%	-26.58%	77.67%
	PE Ratio					61.17	42.00	34.40	134.66	134.36	66.74	-59.19	223.44
	ROE	15.18%	12.05%	30.15%	23.04%	18.76%	15.66%	21.51%	21.64%	16.37%	18.10%	7.17%	30.27%
	ROCE	15.00%	13.00%	23.00%	37.00%	33.00%	26.00%	33.00%	31.00%	21.00%	24.00%	5.00%	49.00%
	ROA	9.06%	9.87%	11.82%	11.64%	11.69%	9.13%	13.43%	10.27%	8.98%	10.96%	5.78%	15.22%

Johnson Controls-Hitachi Air Conditioning India Ltd. *	**Δ Sales**	18.25%	**43.02%**	4.30%	16.87%	13.98%	2.56%	-1.96%	**-25.07%**	31.13%	10.44%	-19.37%	40.27%
	Δ Expenses	19.02%	36.36%	5.78%	15.26%	13.55%	4.59%	-2.60%	**-24.46%**	34.91%	16.54%	-15.38%	38.67%
	PE Ratio	58.81	50.83	66.08	60.58	68.18	65.26	69.69	**217.98**	**298.79**	**-33.66**	44.16	84.40
	ROE	3.35%	24.85%	13.96%	18.47%	18.71%	14.02%	12.13%	4.59%	2.18%	-12.46%	-16.89%	37.91%
	ROCE	6.00%	26.74%	16.27%	24.10%	29.27%	20.00%	14.70%	6.76%	3.81%	-11.46%	-19.14%	48.41%
	ROA	2.04%	6.35%	4.87%	6.34%	6.15%	4.89%	5.06%	3.32%	2.24%	0.35%	2.53%	10.92%
Voltas Ltd. *	**Δ Sales**	-7.44%	0.35%	-0.39%	5.07%	7.38%	15.22%	7.68%	-11.50%	11.30%	8.11%	-12.51%	20.32%
	Δ Expenses	-7.29%	-2.51%	1.32%	1.34%	6.81%	18.29%	3.88%	-11.25%	10.99%	12.29%	-18.79%	27.19%
	PE Ratio	21.70	24.09	23.77	26.35	35.89	41.01	30.51	63.13	81.75	**200.55**	-24.76	107.02
	ROE	13.49%	17.90%	13.94%	16.29%	14.26%	12.41%	14.11%	11.44%	10.48%	20.05%	8.02%	20.44%
	ROCE	16.00%	23.00%	19.00%	24.00%	21.00%	17.00%	21.00%	16.00%	14.00%	9.00%	8.50%	28.50%
	ROA	5.60%	8.40%	5.86%	8.49%	9.08%	7.46%	7.58%	6.71%	5.88%	4.42%	2.37%	11.69%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

For Dixon Technologies (India) Ltd, all the financial values were with the statistically significant bounds.

For Johnson Controls-Hitachi Air Conditioning India Ltd, the increase in sales of 43.02 percent in 2015 was above the upper limit value of 40.27 percent. This increase was due to the joint venture between Johnson Controls and Hitachi Appliances (“Johnson-Hitachi Annual Report 2014-2015,” n.d.). In 2021, the company reported a drop in sales of 25.07 percent compared to a lower limit drop of 19.37 percent, and a drop in expenses of 24.46 percent compared to a lower limit drop of 15.38 percent. This was due to the impact of Covid19 on the business (“Johnson-Hitachi Annual Report 2020-2021,” n.d.). The PE ratio of 217.98 in 2021 and 298.79 in 2022 were way more than the upper limit of 84.40. High stock price but very low earnings resulted in these high PE values (“Johnson Controls-Hitachi Air Conditioning India Ltd. Stock Analysis,” n.d.). Earnings in 2023 - was negative resulting in a negative PE ratio of 33.66 which was below the lower limit PE value of 44.16 for the company. The negative earnings was an outcome of the consistent drop in sales that the company witnessed over the past few years (“Hitachi losing cooling effect, no more among Top 3 brands - The Economic Times,” n.d.).

For Voltas Ltd., the PE ratio of 200.55 in 2023 was flagged as an upper outlier as the value was more than the statistically significant upper limit value of 107.02. High stock price due to investor confidence resulted in the high PE ratio. Record volumes and increase in market share was behind the increased investor confidence (“Record volumes, higher market share drive gains for Voltas stock | News on Markets - Business Standard,” n.d.).

Out of the 14 deviations in financial values studied in the Consumer Durable Industry, none were attributed to environmental, social, or governance related factors.

3.7.8 The Consumer Electricals Industry

The Consumer Electricals sector includes all companies involved in the production of electrical equipments. Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.8 below gives the financial data for 10 years of the selected companies in this industry segment.

Bajaj Electricals Ltd reported a negative PE ratio of 30.20 in 2014. This was below the statistically significant negative lower limit of 17.51. Lower margins partially due to the overall challenging business environment and an abnormal increase in site expenses resulted in negative earnings. Site expenses increased due to cleaning up of overrun sites ("Bajaj Electricals Annual Report_2014.cdr | Enhanced Reader," n.d.). The increase in sales of 41.73 percent and the increase in expenses of 43.26 percent in 2019 for Bajaj Electricals were also above the statistically significant upper limits of 38.68 percent for sales and 34.07 percent for expenses respectively. An increase in distribution resulted in the increase in sales. An increase in inflation and associated increase in interest expenses contrbuted to the rise in expenses *An*("Bajaj Electricals - Annual Report 2018-19," n.d.).

For Finolex Cables Ltd, the ROA value of 8.69 percent in 2021 was below the significant lower limit value of 10.06 percent. The pandemic resulted in lower profits during the financial year ending in March 2021. This lower profitability directly impacted the ROA value ("Finolex Cables Annual Report 2020-2021," n.d.). The increase in sales of 37.78 percent in 2022 was also above the significant upper limit of 33.65 percent.

Table 3.7.8 – Financial Data for 10 years of Selected Companies in the Consumer Electricals Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Bajaj Electricals Ltd. *	**Δ Sales**	19.44%	5.73%	8.47%	-7.33%	10.40%	**41.73%**	-25.26%	-8.09%	4.28%	13.62%	-30.29%	38.68%
	Δ Expenses	21.04%	5.69%	4.41%	-7.28%	9.77%	**43.26%**	-24.41%	-10.43%	6.33%	11.43%	-27.41%	34.07%
	PE Ratio	**-30.20**	19.60	22.20	37.60	37.20	38.40	51.70	59.40	65.60	56.00	-17.51	98.39
	ROE	-0.75%	-2.03%	14.59%	12.35%	8.85%	15.50%	-0.01%	11.44%	8.60%	11.75%	-12.95%	27.29%
	ROCE	7.00%	7.77%	20.72%	15.66%	14.02%	17.34%	7.49%	13.76%	12.92%	18.66%	-2.75%	28.73%
	ROA	3.05%	3.13%	8.93%	7.86%	8.45%	6.75%	4.54%	7.09%	5.66%	7.58%	0.36%	12.26%
Finolex Cables Ltd. **	**Δ Sales**	4.90%	4.16%	0.70%	0.79%	15.61%	8.74%	-4.70%	-6.69%	**37.78%**	19.37%	-19.03%	33.65%
	Δ Expenses	3.46%	4.28%	-3.45%	-2.88%	14.69%	9.43%	-4.49%	-3.72%	38.33%	18.86%	-28.32%	38.39%
	PE Ratio	8.15	21.92	17.28	25.00	28.81	21.13	7.74	20.59	14.27	24.76	1.48	37.59
	ROE	18.82%	15.70%	16.95%	16.82%	16.32%	14.10%	14.80%	9.58%	12.39%	13.52%	9.12%	21.24%
	ROCE	16.41%	14.69%	16.35%	22.26%	22.62%	21.24%	18.13%	13.09%	15.97%	17.20%	9.47%	27.06%
	ROA	13.27%	12.15%	13.68%	14.51%	14.46%	12.42%	13.36%	**8.69%**	11.23%	12.28%	10.06%	15.73%
Havells India Ltd. **	**Δ Sales**	12.47%	11.06%	4.06%	13.87%	31.68%	23.37%	-6.32%	11.26%	32.34%	21.33%	-6.51%	40.48%
	Δ Expenses	10.33%	11.42%	3.21%	13.54%	33.25%	24.50%	-4.32%	6.30%	35.51%	25.31%	-19.38%	51.80%
	PE Ratio	26.12	49.46	15.43	58.85	46.04	61.35	40.89	62.97	60.33	69.48	13.80	89.47
	ROE	22.47%	19.56%	**27.05%**	16.46%	19.05%	18.65%	17.02%	20.13%	19.94%	16.25%	13.45%	24.07%
	ROCE	20.22%	18.84%	26.20%	15.84%	17.48%	25.14%	19.44%	24.80%	24.10%	20.29%	10.54%	33.08%
	ROA	14.08%	12.74%	**17.90%**	10.86%	10.89%	11.02%	10.40%	11.78%	11.37%	9.64%	8.42%	14.95%

Polycab India Ltd. **	**Δ Sales**	3.25%	22.46%	11.34%	6.48%	22.42%	17.26%	11.20%	-0.50%	37.63%	15.25%	-12.55%	41.34%
	Δ Expenses	2.89%	20.53%	11.20%	4.96%	20.00%	15.79%	8.96%	-0.46%	**41.06%**	11.46%	-13.52%	38.44%
	PE Ratio							14.52	24.74	37.93	33.93	3.07	54.04
	ROE	6.25%	9.66%	10.48%	11.64%	15.26%	17.60%	19.82%	17.66%	16.87%	19.24%	0.46%	27.96%
	ROCE	16.03%	20.67%	21.62%	18.96%	25.51%	29.15%	26.73%	21.55%	20.19%	25.91%	12.06%	34.06%
	ROA	3.32%	4.72%	4.80%	5.09%	8.10%	8.96%	12.83%	12.35%	12.74%	13.76%	-6.78%	24.30%
Symphony Ltd. **	**Δ Sales**	43.45%	17.00%	-20.41%	61.59%	3.63%	-23.39%	36.95%	-31.39%	29.72%	37.01%	-91.50%	114.10%
	Δ Expenses	42.04%	16.05%	-31.00%	73.57%	2.68%	-16.67%	32.49%	-27.76%	41.54%	34.08%	-89.10%	116.94%
	PE Ratio	39.49	78.59	62.93	61.31	66.74	75.55	38.09	105.38	64.26	44.85	12.39	109.92
	ROE	42.48%	40.11%	39.94%	37.61%	30.32%	15.10%	28.65%	14.77%	13.40%	18.06%	-19.44%	74.63%
	ROCE	42.34%	39.84%	39.62%	51.52%	41.79%	24.33%	37.08%	19.21%	17.62%	23.54%	-2.61%	67.65%
	ROA	30.59%	30.29%	33.78%	31.88%	26.70%	13.13%	24.91%	12.74%	10.94%	14.98%	-11.79%	55.90%
V-Guard Industries Ltd. **	**Δ Sales**	11.63%	14.98%	6.80%	12.28%	10.66%	11.27%	**-3.04%**	8.54%	**28.22%**	16.54%	1.23%	22.15%
	Δ Expenses	11.43%	15.47%	3.61%	10.93%	13.20%	10.46%	**-4.62%**	7.74%	**31.29%**	19.57%	-1.30%	24.62%
	PE Ratio	19.88	38.75	23.71	50.92	71.07	57.34	35.89	54.56	41.06	60.27	6.54	86.71
	ROE	22.02%	18.72%	23.72%	22.79%	17.70%	18.39%	18.63%	16.47%	16.17%	11.29%	10.15%	27.82%
	ROCE	30.77%	28.63%	33.88%	31.79%	23.34%	23.54%	23.95%	22.79%	20.24%	13.09%	11.97%	41.20%
	ROA	18.71%	9.75%	15.58%	15.47%	11.52%	12.20%	12.85%	10.69%	10.94%	6.60%	4.66%	20.91%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

A robust recovery post the pandemic coupled with the low baseline values of the previous year contributed to this increase (“Finolex Cables Annual Report 2021-2022,” n.d.).

Havells India Ltd reported high ROE and ROA values of 27.05 percent and 17.90 percent in 2016. Both these values were above the upper limit of 24.07 percent for ROE and 14.95 percent for ROA. During the financial year 2015-2016, Havells India provided better compensation and extended more benefits to the existing shareholders. This was the major contrbuting factor for the observed deviations (“Havells Annual Report 2015-2016,” n.d.).

The 41.06 percent increase in expenses for Polycab India Ltd in 2022 was above the upper limit of 38.44 percent. The increase in expenses was primarily due to the post pandemic growth in sales and associated incidental expenses (“Polycab Audited Consolidated Financial Statement FY 22-23,” n.d.).

For Symphony Ltd., none of the financial values calculated or recorded showed statistically significant deviations from the outlier limits.

V-Guard Industries Ltd saw sales drop by 3.04 percent which was lower than the significant lower limit of 1.23 percent and a subsequent drop in expenses of 4.62 percent which was the lower than the siginificant lower limit of 1.30 percent. V-Guard imports products from countries like China where the pandemic originated in 2019. This directly resulted in the observed deviations (“V-Guard Industries Limited Annual Report 2019-2020,” n.d.). In 2022, the increase in sales was 28.22 percent and the increase in expenses was 31.29 percent. These were above the upper limit value of 22.15 percent for increase in sales and 24.62 percent for increase in expenses. These deviant increases were driven by the post Covid increase in demand (“V-Guard Industries Limited Annual Report 2021-2022,” n.d.).

Out of the 12 deviations in financial values studied in the Consumer Electricals Industry, none were attributed to environmental, social, or governance related factors.

3.7.9 The Consumer Products Industry

Crisil classifies all companies involved in the production of consumer nondurables which cannot be classified as FMCG or Consumer Services ("Standardized industry classification framework as mandated by SEBI," n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.9 below gives the financial data for 10 years of the selected companies in this industry segment.

For Bata India Ltd., the drop in sales of 42.31 percent (lower limit drop of 31.22 percent), the drop in expenses of 27.41 percent (lower limit drop of 22.16 percent), the negative PE ratio of 202.33 (lower limit of -0.80), the negative ROE ratio of 5.13 percent (lower limit of -0.24 percent) and the negative ROA ratio of 2.70 percent (lower limit of 1.28 percent) were all statistically significant deviations. The impact of Covid19 on the business resulted in the poor financial performance ("Bata India Ltd Annual Report 2020-2021," n.d.). The high PE ratio of 244.72 in 2022 was also a statistically significant deviation (upper limit of 85.57). The high PE ratio was driven by substantially high share prices due to market confidence given the strong recovery post the Covid19 induced disruptions shown by the company even when the increase in earnings were not as high ("Bata India Ltd Annual Report 2021-2022," n.d.).

For Page Industries Ltd., the ROA in 2019 was 29.16 percent. This value was higher than the upper limit value of 27.39 percent. This was because there was an

Table 3.7.9 – Financial Data for 10 years of Selected Companies in the Consumer Products Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Bata India Ltd. **	**Δ Sales**	12%	30.56%	-10.56%	2.68%	6.62%	11.82%	4.18%	**-42.31%**	35.66%	42.78%	-31.22%	60.19%
	Δ Expenses	11.32%	35.28%	-8.84%	1.54%	3.61%	7.63%	4.70%	**-27.41%**	20.50%	32.79%	-22.16%	42.42%
	PE Ratio	35.47	30.30	30.06	45.91	42.54	54.88	48.09	**-202.33**	**244.72**	56.43	-0.80	85.57
	ROE	23.46%	23.22%	18.91%	11.97%	15.11%	18.87%	17.23%	**-5.13%**	5.56%	22.25%	-0.24%	34.41%
	ROCE	20.72%	20.64%	17.01%	11.10%	21.72%	26.05%	20.54%	-0.36%	8.48%	21.83%	-0.76%	34.81%
	ROA	13.79%	14.11%	12.52%	8.25%	10.42%	13.30%	8.75%	**-2.70%**	2.86%	9.77%	1.28%	20.20%
Page Industries Ltd. **	**Δ Sales**	35.05%	29.93%	15.35%	20.23%	19.57%	12.27%	2.82%	-3.97%	36.99%	22.93%	-9.66%	50.88%
	Δ Expenses	33.69%	30.98%	14.87%	21.54%	16.99%	11.06%	9.88%	-4.35%	33.33%	26.47%	-14.75%	56.61%
	PE Ratio	47.26	78.46	58.62	61.50	73.22	71.00	55.36	99.70	90.16	74.31	32.21	104.54
	ROE	53.21%	50.68%	46.04%	39.99%	40.95%	50.83%	41.86%	38.48%	49.28%	41.66%	27.32%	64.13%
	ROCE	40.33%	38.33%	36.61%	56.68%	59.08%	76.19%	51.85%	48.92%	63.29%	53.32%	18.47%	82.48%
	ROA	22.96%	23.80%	24.62%	23.07%	24.56%	**29.16%**	22.68%	20.03%	25.46%	21.21%	19.97%	27.39%
Relaxo Footwears Ltd. *	**Δ Sales**	20.24%	22.15%	15.75%	-2.19%	19.00%	18.08%	5.17%	-2.13%	12.47%	4.88%	-15.78%	39.50%
	Δ Expenses	18.45%	20.19%	15.07%	-1.86%	17.05%	19.86%	1.70%	-6.84%	20.08%	9.48%	-20.14%	43.29%
	PE Ratio	26.90	37.96	36.37	49.96	47.98	54.50	65.71	74.67	114.07	**137.11**	-7.48	120.37
	ROE	23.73%	28.02%	25.06%	19.78%	21.16%	15.88%	17.78%	18.54%	13.22%	8.33%	6.24%	33.20%
	ROCE	26.00%	30.00%	30.00%	26.00%	30.00%	26.00%	24.00%	26.00%	18.00%	**12.00%**	17.75%	35.75%
	ROA	22.51%	23.87%	24.15%	21.57%	24.17%	20.33%	22.41%	22.88%	17.55%	**13.46%**	16.17%	28.10%

Supreme Industries Ltd. *	**Δ Sales**	16.37%	7.38%	**-30.42%**	**50.75%**	11.37%	12.93%	-1.79%	15.31%	22.31%	18.38%	-5.87%	32.13%
	Δ Expenses	17.59%	6.38%	**-30.38%**	**48.14%**	13.03%	15.43%	-3.13%	8.44%	28.78%	22.53%	-14.71%	42.89%
	PE Ratio	23.41	26.60	42.43	32.24	35.12	31.63	23.58	26.52	26.85	36.89	14.75	46.19
	ROE	27.28%	26.61%	16.83%	25.38%	22.78%	20.83%	20.67%	30.86%	25.19%	19.66%	12.32%	34.69%
	ROCE	37.00%	36.00%	24.00%	36.00%	33.00%	30.00%	27.00%	40.00%	34.00%	27.00%	15.38%	48.38%
	ROA	27.02%	28.27%	19.06%	27.15%	26.81%	24.30%	23.08%	29.99%	24.86%	21.07%	17.80%	32.70%
Titan Company Ltd. **	**Δ Sales**	8.05%	8.50%	-5.39%	14.41%	21.19%	22.54%	4.72%	3.11%	32.11%	40.48%	-19.43%	47.18%
	Δ Expenses	8.83%	8.96%	-4.21%	13.13%	18.71%	22.82%	4.64%	7.54%	26.07%	39.35%	-13.03%	42.69%
	PE Ratio	31.70	42.64	44.59	57.74	74.03	72.20	55.23	**142.16**	103.62	68.70	7.77	113.05
	ROE	29.36%	26.61%	20.08%	17.66%	22.38%	22.23%	22.23%	**11.61%**	23.25%	27.78%	12.89%	33.50%
	ROCE	28.55%	25.88%	19.49%	26.39%	32.27%	32.40%	28.37%	17.89%	30.04%	34.67%	17.45%	40.27%
	ROA	12.13%	14.01%	11.06%	9.15%	12.37%	11.98%	11.50%	**5.52%**	10.82%	13.28%	8.74%	14.46%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

increase in operating profit and a decline in asset value by 4.7% from INR 14.123 million to INR 13.505 million (“Page Industries Annual Report 2018-2019,” 2019).

For Relaxo Footwears Ltd, the 2023 PE ratio of 137.11 was higher than the upper outlier value of 120.37. The high PE was because the share price was very high compared to the earnings reported. The ROCE of 12 percent and ROA of 13.46 percent in that same year was below the lower outlier values of 17.75 percent for ROCE and 16.17 percent for ROA. The lower operating profit resulted in the low ROCE and ROA values (“Relaxo Annual Report 2022-2023,” 2023).

Supreme Industries Ltd saw a drop in sales of 30.42 percent below the lower limit of -5.87 percent, and a drop in expenses of 30.38 percent below the lower limit of -14.71 percent in 2015-2016. In the following financial year, 2016-2017, the increase in sales of 50.75 percent was above the upper limit of 32.13 percent, and increase in expenses 48.14 percent was above the upper limit of 42.89 percent. The drop in 2015-2016 was because of a change in financial reporting from June to March. Hence only 9 month data from June 2015 to March 2016 was reported in March 2016 (“Supreme Industries Annual Report 2015-2016,” n.d.). Subsequently, the increase in sales and expenses in 2016-2017 was calculated from the low 9 month values reported in 2015-2016 (“Supreme Industries Annual Report 2016-2017,” n.d.).

For Titan Company Ltd. the 2021 PE ratio of 142.16 was higher than the upper outlier value of 113.05. The high PE was because the share price was very high compared to the earnings reported. Earnings were low due to the impact of the pandemic. The ROE of 11.61 percent and ROA of 5.52 percent in that same year was below the lower outlier values of 12.89 percent for ROE and 8.74 percent for ROA. Pandemic impacted lower operating profit resulted in the low ROE and ROA values (“TITAN COMPANY LIMITED 37 th Annual Report 2020-21,” n.d.).

Out of the 17 deviations in financial values studied in the Consumer Products industry, none were attributed to environmental, social, or governance related factors.

3.7.10 The Financial Services Industry

Crisil classifies all companies involved in facilitating brokerage and other financial transactions in this segment (“Standardized industry classification framework as mandated by SEBI,” n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.10 below gives the financial data for 10 years of the selected companies in this industry segment..

For Central Depository Services (India) Ltd (CDSL), the growth in revenues in 2014 was 1 percent which was lower than the statistically significant upper limit of 4.35 percent. The primary reasons for the low growth were the overall static trading activity in the stock market, and regulatory changes like consolidation of demat accounts bringing down account related service incomes (“CDSL Annual Report 2013-2014,” 2006). In 2021 and 2022, CDSL showed revenue growths of 47.73 percent and 53.73 percent respectively. These growth figures were above the upper outlier limit of 23.42 percent. The increase in revenues in 2021 is attributable to increased service income from higher number of transactions and corporate actions (“CDSL Annual Report 2020-2021,” n.d.). Similarly, the growth in revenues in 2022 was based on the growth in transaction income and due to the annual increase in the number of active companies (“CDSL Annual Report 2021-2022,” n.d.).

JM Financial Ltd. reported high growth in revenues and expenses of 161.47 percent and 245.54 percent respectively in 2018. These growth figuers exceeded the upper limit value of 127.13 percent for revenues and 214.34 percent for expenses. The growth in revenues was due to the company's expansion into the retail sector and an increase in loans due to this. The increase in expenses was directly associated with the increase in revenues ("JM Financial Ltd. Annual Report 2017-2018," n.d.).

Motilal Oswal Financial Services Ltd (MOFSL), saw a drop in expenses of 70.03 percent in 2017. This is less than the lower outlier value of -46.61 percent. Expenses declined primarily due to a drop in employee benefit expenses, and finance costs ("Motilal Oswal Financial Services Annual Report 2016-2017," n.d.). The increase in sales of 924.11 percent and the increase in expenses of 4860.47 percent in 2018 were more than the upper limit of 68.37 percent for an increase in sales and 86.54 percent for an increase in expenses. In the financial year 2017-2018, MOFSL made a strategic shift towards linear sources of earnings like asset management and housing finance which contributed towards more stable and predictable revenue realizations. The increase in expenses were due to operational and employee expenses necessitated by the aforesaid strategic shift ("Motilal Oswal Financial Services Annual Report 2017-2018," n.d.).

For Multi Commodity Exchange of India Ltd (MCX), expenses in 2015 declined by 29.57 percent which was below the lower outlier value of -22.61 percent for a decline in expenses. This was because a lower number of contracts were traded on the Exchange compared to the previous year ("MCX Annual Report 2014-2015," n.d.). In 2020, the ROCE for MCX was 14.92 percent which was slightly more than the upper outlier value of 14.17 percent. An increase in the profit margin of around 10 percent directly contributed to the high ROCE ("MCX Annual Report 2019-2020," n.d.). In 2023, MCX reported an increase in expenses of 56.43 percent. This increase was above the upper outlier limit of 29.30 percent. Technology upgrades, and regulatory and compliance costs primarily contributed towards the rise in expenses *ua*("MCX Annual Report 2022-2023," n.d.).

Table 3.7.10 – Financial Data for 10 years of Selected Companies in the Financial Services Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Central Depository Services (India) Ltd. **	**Δ Sales**	**1.00%**	13.36%	11.29%	16.60%	15.27%	5.37%	12.15%	**47.73%**	**53.73%**	13.33%	4.35%	23.42%
	Δ Expenses	7.89%	5.48%	-4.51%	15.06%	14.35%	8.69%	44.92%	-7.18%	34.72%	39.78%	-29.49%	65.38%
	PE Ratio					28.63	22.33	21.10	34.22	49.71	34.41	8.21	50.06
	ROE	12.65%	12.12%	18.03%	14.67%	15.46%	15.55%	13.57%	23.44%	31.02%	28.17%	1.48%	34.45%
	ROCE	11.86%	12.11%	17.97%	19.83%	21.14%	20.17%	16.94%	30.08%	39.18%	35.23%	1.23%	43.82%
	ROA	10.00%	10.03%	15.99%	13.12%	13.55%	13.77%	11.82%	19.20%	25.69%	23.69%	2.77%	27.78%
JM Financial Ltd. **	**Δ Sales**	55.19%	19.84%	51.00%	3.30%	**161.47%**	-36.53%	12.05%	23.52%	65.49%	-21.14%	-67.50%	127.13%
	Δ Expenses	66.67%	93.55%	90.42%	22.54%	**245.54%**	-20.00%	-5.30%	7.50%	29.25%	-13.94%	-131.9%	214.34%
	PE Ratio	9.01	11.31	7.50	14.97	17.96	13.81	9.99	13.65	8.34	9.53	2.19	20.72
	ROE	4.35%	4.75%	6.78%	6.18%	7.69%	4.48%	4.94%	5.00%	8.77%	7.15%	1.41%	10.45%
	ROCE	4.29%	5.02%	7.88%	7.97%	10.14%	5.15%	6.00%	6.11%	10.84%	8.04%	1.37%	12.01%
	ROA	3.96%	4.00%	4.94%	5.19%	7.15%	4.18%	4.47%	4.62%	8.12%	6.68%	1.17%	9.39%
Motilal Oswal Financial Services Ltd. **	**Δ Sales**	2.84%	32.24%	-14.16%	19.66%	**924.11%**	-8.12%	4.62%	67.20%	19.55%	3.11%	-36.37%	68.37%
	Δ Expenses	55.50%	24.08%	-10.17%	**-70.03%**	**4860.47%**	0.23%	30.06%	13.18%	38.80%	12.60%	-46.61%	86.54%
	PE Ratio	32.35	27.66	22.98	29.16	23.37	29.84	40.14	7.27	9.90	9.69	-11.58	54.42
	ROE	7.49%	10.52%	7.87%	12.89%	16.51%	12.42%	7.11%	20.17%	16.66%	12.77%	-2.08%	26.21%
	ROCE	7.07%	8.21%	6.66%	15.35%	15.49%	11.88%	8.19%	19.66%	16.32%	12.63%	-2.70%	26.35%
	ROA	5.27%	5.67%	4.57%	7.44%	7.45%	5.64%	3.19%	7.91%	6.54%	4.09%	1.04%	10.92%

Multi Commodity Exchange of India Ltd. **	**Δ Sales**	-31.77%	-24.46%	5.75%	6.97%	-7.90%	11.12%	25.24%	-5.48%	-11.46%	29.34%	-41.56%	41.07%
	Δ Expenses	-3.87%	**-29.57%**	13.75%	7.59%	1.86%	9.35%	10.00%	-7.07%	-0.97%	**56.43%**	-22.61%	29.30%
	PE Ratio	16.45	45.52	37.22	48.55	31.41	28.13	24.24	34.26	50.32	51.92	0.69	76.05
	ROE	11.60%	9.00%	7.69%	8.25%	6.83%	9.33%	13.48%	11.88%	7.61%	8.13%	2.95%	15.88%
	ROCE	11.22%	8.78%	7.58%	11.30%	9.01%	10.88%	**14.92%**	14.04%	11.09%	10.39%	6.47%	14.17%
	ROA	8.77%	6.85%	6.12%	6.76%	5.42%	8.40%	11.80%	10.53%	6.53%	6.99%	3.45%	11.81%
UTI Asset Management Company Ltd. **	**Δ Sales**	2.61%	29.00%	14.86%	13.82%	23.96%	-4.66%	-14.53%	9.34%	12.52%	3.84%	-14.61%	32.13%
	Δ Expenses	-6.43%	**33.99%**	13.80%	11.15%	14.87%	-0.77%	-5.91%	-0.21%	10.22%	2.45%	-21.28%	33.79%
	PE Ratio								21.02	30.21	19.21	11.86	33.87
	ROE	14.59%	15.06%	14.69%	16.03%	17.63%	14.46%	11.91%	12.09%	13.27%	12.67%	9.60%	18.19%
	ROCE	18.60%	20.36%	20.86%	21.35%	24.44%	19.52%	14.24%	15.54%	16.77%	16.60%	10.50%	26.87%
	ROA	12.22%	12.55%	13.30%	14.51%	**15.82%**	13.19%	10.54%	10.84%	12.09%	11.72%	9.62%	15.46%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

UTI Asset Management Company Ltd recorded a 33.99 percent increase in expenses in 2015 compared to 2014. This increase slightly exceeded the upper limit for increase in expenses of 33.79 percent. An increase in employee and other expenses like rent, legal and professional fees, etc. contributed towards the rise *l* ("UTI AMC Annual Report 2014-2015," n.d.). The ROA for the company in 2018 was 15.82 percent which was more than the upper outlier value of 15.46 percent albeit very slightly. The primary reason was the increase in profit margin which was around 43 percent compared to 38 percent in the previous year ("UTI AMC Annual Report 2017-2018," n.d.).

Out of the 13 deviations observed in the financial values of the five companies studied under the Financial Services industry, we did not observe any deviation because of ESG factors.

3.7.11 The FMCG Industry

FMCG is the accronym for fast-moving consumer goods. These products sell quickly and at relatively low cost. Examples of FMCG products are softdrinks, dairy products, baked goods, etc ("Fast-Moving Consumer Goods (FMCG) Industry: Definition, Types, and Profitability," n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.11 below gives the financial data for 10 years of the selected companies in this industry segment.

The PE ratio of Britannia Industries Ltd in 2014 was 25.59 which was below the statistically significant lower bound of 26.78. Less than expected profits resulted in lower share prices given less than favourable investor sentiments ("Britannia Industries Share Prices," n.d.). The PE ratio in 2019 was 63.97. This was above the upper outlier of 63.46.

Table 3.7.11 – Financial Data for 10 years of Selected Companies in the Fast-Moving Consumer Goods (FMCG) Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Britannia Industries Ltd. **	**Δ Sales**	11.84%	14.53%	10.77%	6.38%	10.52%	12.82%	6.08%	11.92%	8.36%	15.35%	3.36%	18.14%
	Δ Expenses	8.26%	12.86%	5.84%	5.85%	9.67%	11.75%	5.31%	9.11%	12.57%	14.16%	-2.42%	21.24%
	PE Ratio	**25.59**	37.60	39.10	45.78	59.42	**63.97**	46.11	46.85	50.66	44.85	26.78	63.46
	ROE	43.33%	50.37%	44.05%	32.67%	29.29%	27.78%	34.72%	53.02%	66.72%	67.24%	4.42%	81.12%
	ROCE	41.74%	49.41%	43.43%	32.36%	29.06%	42.19%	38.79%	60.59%	72.25%	57.73%	15.34%	79.83%
	ROA	20.05%	25.28%	24.42%	22.82%	20.48%	19.85%	20.46%	23.73%	22.89%	24.76%	14.79%	29.92%
Godrej Consumer Products Ltd. *	**Δ Sales**	13.93%	8.58%	2.80%	4.26%	10.80%	7.95%	-3.61%	14.25%	11.16%	10.28%	-3.65%	19.91%
	Δ Expenses	13.07%	7.72%	-0.89%	1.57%	8.83%	6.00%	-3.36%	14.28%	13.49%	11.01%	-12.13%	27.36%
	PE Ratio	37.68	40.90	48.16	54.18	52.77	33.81	24.34	46.89	41.40	61.08	18.79	71.32
	ROE	20.12%	21.04%	19.40%	24.60%	26.11%	**32.22%**	18.95%	18.23%	15.43%	12.34%	10.46%	31.65%
	ROCE	23.00%	24.00%	27.00%	27.00%	29.00%	32.00%	28.00%	27.00%	24.00%	22.00%	18.38%	33.38%
	ROA	12.59%	13.29%	14.10%	13.76%	15.10%	**26.33%**	17.00%	15.90%	16.65%	14.34%	9.92%	20.39%
Hindustan Unilever Ltd. *	**Δ Sales**	8.60%	9.95%	0.83%	2.67%	8.26%	10.71%	1.47%	18.59%	11.30%	15.53%	-6.56%	21.78%
	Δ Expenses	7.96%	8.79%	-1.13%	2.10%	5.44%	8.58%	-1.36%	18.80%	11.59%	17.63%	-9.00%	22.82%
	PE Ratio	33.19	43.32	45.33	44.09	55.35	61.03	73.74	71.46	54.21	59.44	20.04	84.99
	ROE	111.54%	108.33%	63.15%	66.37%	71.61%	76.95%	82.00%	16.77%	18.10%	20.12%	-43.92%	155.54%
	ROCE	154.00%	150.00%	120.00%	97.00%	109.00%	119.00%	120.00%	38.00%	24.00%	26.00%	-48.13%	220.88%
	ROA	34.60%	37.51%	39.95%	40.29%	41.98%	47.67%	48.89%	16.91%	18.24%	19.36%	-4.41%	69.14%

**Marico Ltd. ** **	**Δ Sales**	13.32%	23.08%	6.56%	-0.50%	5.38%	16.42%	-1.80%	8.51%	17.57%	-0.65%	-21.03%	37.65%
	Δ Expenses	8.06%	27.82%	2.52%	-5.32%	9.04%	17.53%	-4.13%	8.87%	21.31%	-2.02%	-25.32%	39.85%
	PE Ratio	32.17	43.39	44.30	47.65	51.71	40.17	34.75	45.32	53.16	47.65	30.96	57.67
	ROE	29.25%	23.26%	27.01%	28.81%	23.61%	32.35%	34.86%	36.44%	38.14%	32.06%	17.30%	44.39%
	ROCE	33.41%	29.61%	36.75%	39.16%	34.71%	33.48%	43.69%	44.22%	45.98%	40.55%	20.11%	56.58%
	ROA	18.36%	16.87%	20.09%	22.39%	17.86%	23.72%	24.34%	24.67%	25.86%	23.16%	10.70%	32.27%
**Tata Consumer Products Ltd. ** **	**Δ Sales**	17.58%	5.99%	4.96%	-0.95%	6.48%	7.35%	**60.79%**	25.47%	12.13%	6.44%	-9.06%	31.39%
	Δ Expenses	14.91%	6.81%	6.58%	-0.72%	-0.62%	10.14%	**65.56%**	**27.12%**	9.43%	5.69%	-5.79%	25.43%
	PE Ratio	20.13	29.59	35.73	66.72	35.20	28.14	56.83	81.10	90.97	56.45	-18.89	114.13
	ROE	17.39%	11.61%	19.61%	7.29%	12.68%	9.29%	4.83%	5.53%	7.54%	7.46%	-0.29%	20.03%
	ROCE	14.60%	9.59%	18.33%	7.06%	12.35%	12.92%	7.16%	7.69%	9.51%	9.71%	1.20%	19.73%
	ROA	12.09%	7.90%	13.86%	6.25%	10.92%	8.21%	4.34%	4.61%	6.22%	6.09%	-0.06%	16.42%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

Britannia Industries reported a higher than expected operating profit thereby boosting investor sentiments resulting in the high PE ("Britannia Industries Q2 Result 2019:: Britannia Industries Profit Beats Estimates On Lower Tax Expense," n.d.).

For Godrej Consumer Products Ltd (GCPL), the ROE of 32.22 percent and the ROA of 26.33 percent in 2019 was above the upper limit bounds of 31.65 percent for ROE and 20.39 percent for ROA. Owing to a robust market presence and effective business strategies, GCPL was able to record an operating profit of 27 percent which was the highest till that year. This directly resulted in higher ROE and ROA ("GODREJ CONSUMER 2018-19 Annual Report Analysis," n.d.).

In the case of Hindustan Unilever Ltd, all the financial values recorded or calculated were within the statistically significant lower and upper bounds.

For Marico Ltd, no deviations in the fianncial values beyond the upper and lower outlier limits were observed.

For Tata Consumer Products Ltd, the increase in sales and expenses in 2020 were 60.79 percent and 65.56 percent respectively. These were above the statistically significant upper limits of 31.39 percent and 25.43 percent for changes in sales and expenses respectively. The merger of Tata Chemicals' consumer products division with Tata Consumer Products resulted in the increase in revenues and expenses ("Tata Consumer Products Ltd Annual Report 2019-2020," n.d.). In 2021, the company recorded an increase in expenses of 27.12 percent which was more than the upper outlier limit of 25.43 percent. Due to the impact of the pandemic, employee benefit expenses increased pushing the value beyond the upper limit ("Tata Consumer Products Ltd Annual Report 2020-2021," n.d.).

Out of the 7 deviations in financial values observed under the FMCG industry, we did not observe any deviation because of ESG factors.

3.7.12 The Healthcare Industry

Crisil classifies all organizations involved in providing medical facilities, medical and diagnostic services in this segment (“Standardized industry classification framework as mandated by SEBI,” n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.12 below gives the financial data for 10 years of the selected companies in this industry segment.

For Dr Lal Pathlabs Ltd, the increase in sales of 30 percent in 2014 was more than the upper limit bound of 28.24 percent. The increase in sales was primarily due to an increase in diagnostic centers and collection points across India. In the same year, the ROE of 39.09 percent was also above the upper limit ROE value of 32.90 percent. This was because the reassessment of the ESOP scheme resulted in additional returns for shareholders (“Dr Lal PathLabs SEBI Submission 2014,” n.d.). In 2022, the increase in expenses of 25.57 percent was above the upper limit of 24.69 percent. The increase in expenses was directly associated with the increase in revenues. Revenues had increased due to the acquisition of Suburban diagnostics leading to an increase in diagnostic centers (“Dr Lal PathLabs Annual Report 2021-2022,” n.d.). In 2023, Dr Lal Pathlabs’ sales declined by 5.72 percent and expenses declined by 2.83 percent. Both the declines were below the lower limit values of 7.10 percent for sales and 7.15 percent for expenses. The decline in revenues was due to a significant drop in Covid19 and allied tests. In addition to this there was an increase in working capital on account of investments in mutual funds during the year (*Dr Lal PathLabs Annual Report 2022-2023*, n.d.).

Table 3.7.12 – Financial Data for 10 years of Selected Companies in the Healthcare Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Dr Lal Pathlabs Ltd. **	**Δ Sales**	**30.00%**	18.15%	21.03%	15.82%	15.98%	14.76%	9.89%	15.82%	24.90%	**-5.72%**	7.10%	28.24%
	Δ Expenses	24.01%	18.21%	14.69%	14.28%	17.81%	14.91%	11.91%	13.54%	**25.57%**	**-2.83%**	7.15%	24.69%
	PE Ratio			57.76	52.01	42.76	43.67	51.68	77.33	63.07	63.82	29.31	83.62
	ROE	**39.09%**	30.06%	26.27%	26.00%	21.66%	20.99%	21.96%	23.01%	23.30%	17.30%	15.03%	32.90%
	ROCE	31.31%	25.95%	25.01%	25.68%	32.70%	31.44%	28.67%	29.44%	27.65%	22.52%	18.11%	38.49%
	ROA	22.32%	19.58%	21.25%	22.54%	18.78%	18.32%	16.93%	17.80%	15.54%	12.60%	11.62%	26.36%
Fortis Healthcare Ltd. **	**Δ Sales**	10.12%	38.43%	-8.41%	7.31%	-2.08%	48.11%	38.88%	-49.71%	20.84%	20.65%	-50.37%	84.67%
	Δ Expenses	8.93%	**55.64%**	-5.78%	13.17%	-14.59%	26.80%	-11.03%	-3.78%	15.43%	15.41%	-36.33%	46.47%
	PE Ratio	-25.2	83	21.6	-50.30	-5.49	31.40	-59.50	42.20	41.20	33.30	-109.52	128.47
	ROE	0.64%	-0.92%	-2.03%	-1.74%	-1.50%	1.47%	**5.78%**	0.04%	-0.14%	1.07%	-4.83%	4.44%
	ROCE	0.47%	-0.78%	-1.72%	-0.08%	1.59%	**4.26%**	**8.99%**	1.07%	1.37%	1.73%	-2.40%	4.15%
	ROA	0.46%	-0.65%	-1.49%	-1.44%	-1.27%	1.21%	**4.85%**	0.03%	-0.12%	0.92%	-4.00%	3.69%
Healthcare Global Enterprises Ltd. **	**Δ Sales**	19.95%	20.38%	11.49%	16.60%	9.25%	8.49%	7.10%	**-9.65%**	**36.24%**	17.88%	-7.44%	35.55%
	Δ Expenses	**29.34%**	10.06%	10.92%	10.11%	8.88%	12.75%	14.59%	**-6.83%**	**21.80%**	14.58%	3.29%	21.37%
	PE Ratio			9.71	14.30	11.40	14.40	14.80	11.80	12.20	13.00	7.76	18.26
	ROE	-15.18%	-0.87%	-0.54%	3.57%	4.09%	1.12%	-8.67%	-20.73%	3.48%	3.50%	-22.04%	18.82%
	ROCE	-8.12%	-0.45%	-0.42%	6.71%	6.81%	5.82%	3.74%	0.82%	4.96%	6.76%	-10.01%	16.38%
	ROA	-6.43%	-0.34%	-0.34%	2.11%	2.23%	0.51%	-3.01%	**-12.16%**	2.32%	2.32%	-9.16%	9.01%

**Narayana Hrudayalaya Ltd. ** **	**Δ Sales**	31.90%	20.74%	11.84%	12.93%	12.14%	12.25%	8.05%	**-23.55%**	**45.54%**	21.74%	-2.45%	35.86%
	Δ Expenses	29.54%	22.88%	8.15%	10.04%	16.92%	13.87%	7.17%	**-14.27%**	24.93%	15.50%	-10.54%	40.54%
	PE Ratio			89.86	100.85	89.52	135.35	32.24	**-117.33**	44.51	31.29	-58.91	183.52
	ROE	6.32%	3.65%	5.91%	8.98%	5.21%	4.28%	5.81%	**7.22%**	10.90%	**18.08%**	-1.19%	14.02%
	ROCE	4.39%	2.91%	5.18%	7.80%	3.52%	6.66%	8.40%	**4.77%**	13.78%	**20.45%**	-3.03%	15.02%
	ROA	3.19%	2.23%	4.14%	6.40%	2.93%	2.41%	3.05%	**3.74%**	5.85%	9.57%	-1.78%	9.75%
Thyrocare Technologies Ltd. *	**Δ Sales**	11.87%	19.41%	28.50%	28.55%	15.05%	8.02%	6.93%	18.54%	16.91%	**-13.53%**	-6.34%	34.51%
	Δ Expenses	18.34%	33.98%	29.28%	28.24%	5.39%	15.49%	7.21%	27.97%	11.16%	13.61%	-12.83%	52.78%
	PE Ratio			85.31	59.06	36.70	29.45	24.79	62.27	21.18	31.12	-19.08	107.23
	ROE	22.37%	17.37%	15.65%	11.16%	21.15%	20.89%	20.97%	26.88%	29.20%	10.93%	7.10%	31.04%
	ROCE	19.28%	24.16%	22.96%	26.71%	20.56%	31.34%	40.25%	34.81%	39.07%	15.46%	1.99%	53.12%
	ROA	0.19%	0.16%	0.14%	0.11%	0.20%	0.20%	0.18%	0.23%	0.25%	0.09%	0.07%	0.27%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

In 2015, the increase in expenses for Fortis Healthcare Ltd was 55.64 percent. This increase was more than the upper outlier value of 46.47 percent. This increase was due to business expansion and associated costs ("Fortis Healthcare Limited Annual Report 2014-2015," n.d.). In 2019, the ROCE for Fortis was 4.26 percent which was slightly higher than the upper bound of 4.15 percent. The slight deviation was due to the increase in sales, operational improvement and reduction in debt ("Fortis Healthcare Limited Annual Report 2018-2019," n.d.). In 2020, the ROE of 5.78 percent (upper bound 4.44 percent), ROCE of 8.99 percent (upper bound 4.15 percent), and ROA of 4.85 percent (upper bound 3.69 percent) were above the respective upper bound values. Effective cost negotiations and process optimizations increased shareholder profitability resulting in higher ROE, ROCE and ROA ("Fortis Healthcare Limited Annual Report 2019-2020," n.d.).

For Healthcare Global Enterprises Ltd, expenses increased by 29.34 percent. The increase was more than the upper outlier value of 21.37 percent. Purchase of stock-in-trade and other expenses like medical consultancy, legal etc. contributed to the increase in expenses ("HealthCare Global Enterprises Limited Annual Report 2013-2014," n.d.). In 2021, Healthcare Global saw its sales and expenses decline by 9.65 and 6.83 percent respectively. These declines were more than lower bound decline in sales of -7.44 percent and the lower bound decline in expenses of 3.29 percent. Impairment loss and - and the impact of Covid19 on healthcare operations resulted in the decline in sales and expenses. Negative earnings also resulted in an ROA value of -12.16 percent which was less than the lower bound value of -9.16 percent ("HealthCare Global Enterprises Limited Annual Report 2020-2021," n.d.). In 2022, Healthcare Global recorded an increase in sales of 36.24 percent which was higher than the upper bound limit of 35.55 percent. The company also saw an increase in expenses of 21.80 percent which was also higher that the upper bound value of 21.37 percent. This was due to a good recovery post the pandemic (“HealthCare Global Enterprises Limited Annual Report 2021-2022,” n.d.).

All the financial values, percentage change in sales and expenses, PE, ROE, ROCE and ROA ratios, for Narayana Hrudayalaya Ltd in 2021 were lower than the statistically significant lower bound values for these measures. An analysis of the annual report of the company showed that the reason behind this was the impact of the pandemic (“Narayana Hrudayalaya Ltd Annual Report 2020-2021,” n.d.). The subsequent post pandemic business recovery in 2022 saw sales increase by 45.54 percent which was above the upper limit of 35.86 percent (“Narayana Hrudayalaya Ltd Annual Report 2021-2022,” n.d.). In 2023, the ROA of Narayana Hrudayalaya was 18.08 percent. This exceeded the upper bound of 14.02 percent. The ROCE was 20.45 percent exceeding the upper limit of 15.02 percent. Earnings per share had almost doubled from 6.6 to 13.1 during the financial year. This contributed towards the high ROE and ROCE values (“Narayana Hrudayalaya Ltd Annual Report 2022-2023,” n.d.).

Thyrocare Technologies Ltd’s sales decreased by 13.53 percent in 2023. This decrease was more than the statistically significant decrease value of 6.34 percent. This was because of the low earnings reported by its Covid focussed labs (“Thyrocare Annual Report 2022-2023,” n.d.).

Out of the 26 deviations in financial values analysed for the 5 companies selected under the Healthcare industry, non of the deviations were reported to be caused due to ESG related factors or regulations.

3.7.13 The Heavy Engineering Industry

The Heavy Engineering industry includes organizations involved in the manufacture, support and use of big and heavy products which use heavy equipments,

Table 3.7.13 – Financial Data for 10 years of Selected Companies in the Heavy Engineering Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
AIA Engineering Ltd. *	**Δ Sales**	12%	17.44%	-13.09%	13.52%	4.07%	32.00%	-9.20%	-4.04%	24.63%	31.25%	-39.27%	60.09%
	Δ Expenses	0.08%	19.47%	-17.69%	15.58%	11.82%	34.50%	-11.57%	-6.54%	33.76%	19.37%	-41.38%	55.94%
	PE Ratio	16.22	27.41	19.40	32.78	30.66	33.16	22.25	34.19	24.69	25.93	8.79	46.33
	ROE	18.69%	20.68%	19.67%	16.81%	14.73%	14.54%	15.95%	13.34%	13.03%	18.55%	8.48%	24.76%
	ROCE	33.00%	36.00%	38.00%	23.00%	21.00%	18.00%	26.00%	15.00%	17.00%	24.00%	0.00%	50.00%
	ROA	22.64%	23.09%	22.02%	20.03%	15.16%	16.46%	16.45%	13.90%	14.16%	18.71%	6.43%	30.57%
Bharat Heavy Electricals Ltd. **	**Δ Sales**	-17.80%	-22.89%	-10.40%	3.83%	1.39%	5.00%	-29.13%	-19.79%	22.06%	10.66%	-55.29%	40.71%
	Δ Expenses	-10.99%	-18.07%	0.16%	-2.44%	-1.93%	3.63%	-21.86%	-6.22%	-0.69%	10.82%	-24.42%	14.56%
	PE Ratio	13.69886	39.66198	-39.575	87.17	67.70	25.97	-4.94	-6.29	38.53	51.09	-73.06	121.01
	ROE	10.47%	4.16%	-2.20%	1.53%	2.47%	3.84%	-5.04%	**-10.25%**	1.52%	1.64%	-8.42%	10.65%
	ROCE	10.90%	4.84%	-1.81%	2.38%	4.42%	5.63%	-0.41%	**-9.15%**	2.24%	2.66%	-6.47%	11.46%
	ROA	0.05%	0.02%	-0.01%	0.01%	0.01%	0.02%	-0.02%	**-0.05%**	0.01%	0.01%	-0.04%	0.05%
ISGEC Heavy Engineering Ltd. **	**Δ Sales**	1.52%	21.09%	18.50%	-20.57%	-14.48%	55.90%	17.92%	-11.54%	2.88%	4.84%	-48.23%	58.30%
	Δ Expenses	0.74%	26.76%	18.50%	-20.57%	-14.48%	55.89%	17.92%	-11.54%	2.88%	4.84%	-48.72%	58.60%
	PE Ratio	18.99	35.10	16.29	18.29	30.40	31.15	12.99	14.83	34.67	16.32	-5.69	52.96
	ROE	7.13%	18.60%	19.84%	16.75%	9.72%	9.52%	10.41%	13.03%	6.32%	9.14%	-0.64%	25.70%
	ROCE	4.74%	13.28%	15.44%	13.99%	7.79%	13.12%	12.98%	14.99%	7.88%	12.43%	1.83%	21.01%
	ROA	1.80%	5.02%	5.57%	5.60%	3.57%	3.01%	3.45%	4.55%	2.29%	3.32%	0.37%	7.63%

KEC International Ltd. *	**Δ Sales**	17.29%	0.50%	16.66%	-1.61%	19.44%	11.96%	3.49%	13.19%	6.08%	22.59%	-15.36%	36.63%
	Δ Expenses	15.52%	1.37%	11.61%	-2.31%	18.91%	11.26%	3.39%	13.78%	7.86%	27.33%	-11.36%	30.95%
	PE Ratio	30.82	15.66	17.96	21.60	24.38	15.40	7.79	19.21	23.74	**53.99**	4.26	36.20
	ROE	5.60%	12.11%	11.46%	19.21%	23.05%	20.36%	20.21%	16.45%	9.17%	4.67%	-5.58%	35.29%
	ROCE	20.00%	14.00%	20.00%	20.00%	28.00%	30.00%	24.00%	24.00%	19.00%	13.00%	12.13%	31.13%
	ROA	7.61%	7.49%	8.85%	10.45%	10.42%	10.60%	10.35%	8.86%	6.14%	4.44%	3.20%	14.72%
Thermax Ltd. *	**Δ Sales**	-8.66%	7.47%	-5.76%	-13.23%	-27.55%	29.85%	-9.21%	-2.61%	28.23%	28.04%	-57.03%	70.86%
	Δ Expenses	-7.38%	7.09%	-4.30%	-14.42%	-26.59%	32.19%	-8.79%	-2.87%	30.30%	25.28%	-52.19%	64.49%
	PE Ratio	36.26	60.73	32.03	52.38	58.27	35.58	41.54	77.53	74.01	60.69	2.87	95.43
	ROE	12.07%	9.77%	11.68%	8.79%	8.55%	10.80%	7.02%	6.35%	8.94%	11.64%	4.38%	15.66%
	ROCE	20.00%	21.00%	18.00%	17.00%	14.00%	16.00%	11.00%	10.00%	9.00%	14.00%	2.75%	26.75%
	ROA	7.57%	7.59%	8.38%	8.60%	6.36%	6.73%	6.73%	5.48%	5.55%	6.76%	4.76%	9.28%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

large machine tools, and huge structures ("Industry-Overview Heavy Engineering Industry," n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.13 below gives the financial data for 10 years of the selected companies in this industry segment.

All the financial measures recorded and calculated for AIA Engineering Ltd were within the statistically significant lower and upper outliers values.

For Bharat Heavy Electricals Ltd (BHEL), the ROE value of -10.25 percent, ROCE value of -9.15 percent, and ROA value of -0.05 percent in 2021 were below the lower bound values for ROA at -8.42 percent, ROCE at -6.47 percent, and ROA at -0.04 percent in 2021. Covid19 induced restrictions resulted in operating losses during the financial year. The negative earnings resulted in the negative profitability measures ("BHEL Annual Report 2020-2021," n.d.).

In the case of ISGEC Heavy Engineering Ltd all the financial measures recorded and calculated were within the statistically significant lower and upper outliers values

For KEC International Ltd, the PE ratio in 2023 was 53.99. This ratio exceeded the upper limit value of 36.20. This was due to high share price given good revenue reporting ("KEC INTERNATIONAL 2022-23 Annual Report Analysis," n.d.).

Thermax Ltd did not report any statistically significant deviations in its financial values during the studied period.

In the case of the Heavy Engineering industry there were only 4 financial values which showed statistically significant deviations from the calculated upper and lower outliers. 3 of these deviations were for Bharat Heavy Electricals Ltd and 1 deviation was for KEC International Ltd. However, none of these were due to ESG related considerations.

3.7.14 The Holding Industry

A holding company is a company whose primary business is holding a controlling interest in the securities of other companies (“Holding Company - Definition, What is Holding Company, Advantages of Holding Company, and Latest News - ClearTax,” n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.14 below gives the financial data for 10 years of the selected companies in this industry segment.

For Bajaj Finserv Ltd the increase in expenses in 2018 was 39.43 percent. This value exceeded the upper limit of 22.43 percent. The increase in expenses were due to an increase in employee benefit expenses on account of substantial growth in revenues, increase in financing costs like interest expenses, loan losses and provisions etc (“Bajaj Finserv Annual Report 2017-2018,” n.d.). The increase in expenses continued into 2019 with the increase in expenses being 44.12 percent. The increase in expenses were due to an increase in employee benefit expenses on account of substantial growth in revenues, exchanges loses, comissions to non-executive directors etc (“Bajaj Finserv Annual Report 2018-2019,” n.d.). In 2020, the ROE for the company was 18.86 percent and the ROA was 18.52 percent. The upper limit bounds for ROE and ROA were 17.15 percent and 16.88 percent respectively. 2020 saw a robut growth in revenues for the third consequitive year for Bajaj Finserv. This resulted in a significant jump in profitability on the back of a strong performance by subsidiaries like Bajaj Alliance General Insurance and a growth in the loan portfolio (“Bajaj Finserv Annual Report 2019-2020,” n.d.).

In 2017, Cholamandalam Financial Holdings Ltd saw sales decline by 98.99 percent. This decline was more than the lower bound decline of 29.27 percent for sales. The decline in revenues resulted in a corresponding decline in expenses. The decline in expenses was 99.90 percent and this was more than the lower bound decline in expenses of 65.97 percent. A combination of adverse economic conditions, increased NPAs, operational cost pressures, and regulatory challenges that collectively impacted its financial health during that financial year (“Cholamandalam Financial Holdings Annual Report 2016-2017,” n.d.). In 2018, sales increased by 61.35 percent. This exceeded the upper limit for increase in sales of 51.41 percent. The major contributing factors for the deviation were expansion of assets under management, diversification of financial services, and the very low baseline of the previuos year (“Cholamandalam Financial Holdings Annual Report 2017-2018,” n.d.). The increase in expenses of 53.85 percent in 2020 was a deviation from the upper outlier limit of 52.14 percent. A significant increase in credit loss provisions was the major contributor to this increase (“Cholamandalam Financial Holdings Annual Report 2019-2020,” 2020). In 2021, Cholamandalam’s revenues declined by 36.08 percent which was more than statistically significant decline limit of 29.27 percent. The revenue decline was due to the pandemic. On the other hand, expenses increased by a massive 505 percent against an upper outlier value of 52.14 percent. Gross incurred claims, interest expenses, and employee benefit expenses were the major contributors to the increase in expenses (“Cholamandalam Financial Holdings Annual Report 2020-2021,” 2021).

Table 3.7.14 – Financial Data for 10 years of Selected Companies in the Holding Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Bajaj Finserv Ltd. **	**Δ Sales**	3.32%	34.56%	18.80%	-34.38%	52.88%	77.82%	81.73%	-51.91%	85.96%	57.42%	-91.11%	171.01%
	Δ Expenses	12.37%	3.42%	5.75%	7.70%	**39.43%**	**44.12%**	8.74%	10.24%	12.83%	4.35%	-3.48%	22.43%
	PE Ratio	8.12	13.32	14.62	28.84	31.06	34.79	21.69	34.42	59.59	31.44	-9.55	59.61
	ROE	3.38%	4.91%	6.05%	2.53%	4.91%	9.71%	**18.86%**	4.70%	9.71%	13.95%	-2.68%	17.15%
	ROCE	3.36%	4.88%	6.00%	3.73%	5.74%	10.21%	19.12%	6.39%	12.80%	18.46%	-5.49%	22.74%
	ROA	3.28%	4.77%	5.93%	2.48%	4.83%	9.54%	**18.52%**	4.62%	9.55%	13.77%	-2.68%	16.88%
Cholamandalam Financial Holdings Ltd. **	**Δ Sales**	3.63%	8.18%	2.86%	**-98.99%**	**61.35%**	13.60%	23.67%	**-36.08%**	43.72%	0.36%	-29.27%	51.41%
	Δ Expenses	4.09%	9.10%	2.48%	**-99.90%**	-15.79%	-18.75%	**53.85%**	**505.00%**	-47.11%	-22.66%	-65.97%	52.14%
	PE Ratio	17	18.5	21.3	22.70	16.60	18.20	24.20	24.90	23.80	23.50	10.10	31.90
	ROE	7.59%	9.15%	3.76%	3.74%	5.82%	6.25%	7.45%	1.90%	4.67%	4.68%	-0.76%	11.89%
	ROCE	4.87%	5.59%	3.09%	3.74%	6.02%	6.65%	7.90%	4.86%	6.80%	6.28%	2.32%	9.10%
	ROA	2.78%	3.39%	1.74%	3.73%	5.80%	6.23%	6.30%	1.66%	4.30%	4.49%	-0.88%	9.28%
Equitas Holdings Ltd. * (Data from March 2013 to March 2022)	**Δ Sales**	73.55%	7.06%	**209.72%**	-8.07%	50.00%	63.01%	3.04%	-14.52%	**905.32%**	-89.17%	-119.60%	185.22%
	Δ Expenses	-60.13%	85.25%	286.73%	-21.05%	17.97%	-9.83%	110.63%	-36.09%	46.76%	152.83%	-202.04%	288.07%
	PE Ratio					35.94	35.86	26.47	7.12	6.30	23.76	-22.06	66.85
	ROE	6.76%	10.02%	9.11%	12.46%	7.14%	6.08%	7.23%	7.35%	**15.38%**	4.50%	2.45%	14.19%
	ROCE	0.47%	0.24%	0.48%	0.40%	0.59%	0.91%	0.78%	0.75%	**9.63%**	0.01%	-0.12%	1.31%
	ROA	8.33%	11.24%	10.45%	10.87%	9.27%	4.80%	8.02%	7.71%	8.37%	6.85%	4.25%	13.69%

IDFC Ltd. **	**Δ Sales**	5.86%	11.91%	-97.55%	-29.53%	52.20%	-30.17%	-3.01%	-73.86%	34.73%	**3491.70%**	-118.56%	117.58%
	Δ Expenses	10.65%	19.51%	-99.12%	30.36%	-55.79%	71.83%	42.95%	-57.22%	-29.22%	-14.39%	-164.34%	142.84%
	PE Ratio	4.91	7.43	-6.90	12.44	8.95	-8.86	-2.38	-22.50	**153.96**	2.96	-27.28	30.09
	ROE	11.56%	9.95%	**-12.11%**	0.57%	1.88%	1.30%	0.69%	0.09%	0.23%	**21.31%**	-11.11%	19.36%
	ROCE	13.46%	12.98%	1.70%	0.84%	2.11%	1.10%	0.83%	0.08%	0.38%	21.48%	-13.31%	24.41%
	ROA	2.30%	1.94%	**-12.08%**	0.56%	1.87%	1.30%	0.68%	0.09%	0.23%	**21.20%**	-2.10%	4.34%
L&T Finance Ltd. **	**Δ Sales**	45.11%	12.26%	30.77%	-26.34%	51.73%	10.19%	-0.78%	**-63.36%**	83.12%	2.71%	-62.06%	103.68%
	Δ Expenses	36.79%	-20.57%	-20.69%	17.51%	**165.19%**	20.21%	7.24%	-4.74%	-57.77%	-19.90%	-80.31%	79.43%
	PE Ratio	24.22	14.46	14.95	23.83	28.58	15.67	6.92	24.38	18.63	12.53	0.27	38.43
	ROE	5.56%	7.37%	9.51%	6.04%	3.46%	3.41%	3.40%	1.05%	1.93%	**18.69%**	-2.05%	12.49%
	ROCE	4.15%	5.32%	7.28%	5.46%	4.95%	5.03%	4.38%	1.22%	2.87%	2.09%	0.10%	8.33%
	ROA	3.68%	4.66%	6.34%	3.89%	2.89%	2.65%	2.35%	0.90%	1.90%	**18.57%**	-0.64%	7.53%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

Equitas Holdings merged with Equitas Small Finance Bank (ESFB) and the merger in March 2023. Hence the financial data for March 2023 included the data for ESFB. Hence, for the current analysis, the data considered was from 2013 till 2022. For Equitas Holdings Ltd, the increase in revenues in 2015 was 209.72 percent which exceeded the upper outlier value of 185.22 percent. During the financial year, Equitas Holdings expanded into the Micro, Small and Medium Enterprises (MSMEs). The resulting expansion in its loan protfolio contributed to the increase in revenues ("Equitas Holding Annual Report 2014-2015," n.d.). In 2021, the increase in revenues for the company was 905.32 percent which was much more than the upper outlier value of 185.22 percent. Equitas sold a significant part of its investment in ESFB after the merger was approved in 2021. This resulted in a significant profit of INR 15,681 lakhs (in 00,000s). The increased profits also resulted in an ROE of 15.38 percent and an ROCE of 9.63 percent which exceede the upper outlier values of 14.19 percent and 1.31 percent for ROE and ROCE respectively ("Equitas Holding Annual Report 2020-2021," n.d.).

For IDFC Ltd, the ROE in 2016 was -12.11 percent. This was below the lower limit of -11.11 percent. The ROA that year was -12.08 percent. This was again below the lower limit of -2.10 percent. The main reason was the decline in profitability due to the company transitioning from an infrastructure financing company into a full-fledged bank and the associated costs in such transitions ("IDFC Ltd Annual Report 2015-2016," n.d.). In 2022, the PE ratio of the company was 153.96. The ratio was well above the upper outlier limit of 30.09. A robust recovery post the pandemic resulted in increased investor confidence thereby driving up share prices. This resulted in the high PE ratio ("IDFC Ltd Annual Report 2021-2022," n.d.). In 2023, IDFC Ltd saw an incredible 3491.70 percent increase in revenues. This was way above the upper outlier limit of 117.58 percent. The high revenues increased the company's profitability thereby resulting in high ROE and

ROA ratios of 21.31 percent and 21.20 percent. Both these values were above the upper bound values of 19.36 percent for ROE and 4.34 percent for ROA. The primary contributor to the surge in revenues was the sale of investments by IDFC; specifically the divestment of IDFC Asset Management Company and IDFC AMC Trustee Company ("IDFC Ltd Annual Report 2022-2023," n.d.).

L&T Finance Ltd recorded a 165.19 percent increase in expenses in 2018. This value exceeded the upper limit value of 79.43 percent. Expenses increased due to the company focusing on expansions financed primarily through debt capital. This led to an increase in financing costs ("L&T Finance Ltd Annual Report 2017-2018," n.d.). Like most companies, L&T Finance Ltd was affected by the pandemic induced business restrictions in 2020-2021. Hence, the company recorded a decline in sales of 63.36 percent which was below the lower margin of -62.06 percent ("L&T Finance Ltd Annual Report 2020-2021," n.d.). In 2023, the ROE for L&T Finance was 18.69 percent and the ROA was 18.57 percent. Both the values were above the upper bounds of 12.49 percent for ROE and 7.53 percent for ROA. L&T Finance had been undergoing a strategic transformation. The company was focusing more on retail lending and reducing exposure to wholesale and infrastructure financing. Retail lending offered higher margins and better asset quality. This had a positive impact on profitability and returns. The high ROE and ROA was due to this increased profitability ("L&T Finance Ltd Annual Report 2022-2023," n.d.).

Out of the 24 deviations studied for the Holding industry, none of the deviations were due to the impact of environmental, social, and governance related factors.

3.7.15 The Hotel Industry

The Hotel industry includes hotels and other forms of short duration accomodation like hostels, motels, guest houses, etc ("Hotel Industry: Everything You Need to Know About Hotels!," n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.15 below gives the financial data for 10 years of the selected companies in this industry segment.

Chalet Hotels Ltd's expenses declined by 42.96 percent in 2021. This decline was below the lower outlier value of -19.97 percent. The decline was due to a 69.62 decrease in revenues because of the impact of the pandemic on the hospitality sector ("Chalet Hotels Limited Annual Report 2020-2021," n.d.). In 2023, the company reported an increase in expenses of 49.27 percent which exceeded the upper limit of an increase in expenses of 45.58 percent. That same year Chalet Hotels had recorded a 135.17 percent increase in revenues. Although the value was less than the significant upper bound of 136.58 percent, it increased the associated business operating costs like food and beverages consumed, supplies consumed, etc. In addition to these, Chalet also undertook real estate development to cater to the increasing demand. All these drove the expenses beyond the outlier limit ("Chalet Hotels Limited Annual Report 2022-2023," n.d.).

In 2014, Delta Corp Ltd saw its revenues and expenses jump by 154.74 percent and 111.52 percent respectively. These were more than the upper limit values of 121.05 percent increase for revenues and 75.37 percent increase for expenses. The company in its annual report attributed the increase to expansions and higher footfalls ("Delta Corp Annual Report 2013-2014," n.d.). In 2021, due to the Covid19 induced business restrictions, Delta Corp's revenues declined by 53.59 percent and corresponding expenses declined by 34.55 percent. These values were below the lower limit decline in sales of a negative 44.60 percent and the lower limit decline in expenses of a negative 21.75 percent. The negative earnings also resulted in a PE ratio of -83.27 percent which was below the lower limit PE value of -23.51 (“Delta Corp Annual Report 2020-2021,” n.d.). In 2022, Delta Corp managed a return to profitability with a robust growth in revenues of 64.77 percent. The increase in profitability revived investor confidence and share prices increased resulting in a PE ratio of 113.91. This PE ratio exceeded the upper limit of 99.57 (“Delta Corp Annual Report 2021-2022,” n.d.). In 2023, the ROA of 9.29 percent for Delta Corp was slightly above the upper outlier limit of 9.19 percent. The return to profitability that the company witnessed in the previous year continued throughout 2023 and was the primary contributor to the improved financial measures of the company (“Delta Corp Annual Report 2022-2023,” n.d.).

For EIH Ltd, in 2021, all the financial measures recorded or calculated were below the corresponding lower bound values except for the PE ratio. The change in sales was -66.98 percent (lower limit of -27.60 percent), the change in expenses was -33.69 percent (lower limit of -22.55 percent), ROE ratio was -11.72 percent (lower limit of 3.23 percent), ROCE ratio was -10.67 percent (lower limit of -0.75 percent), and ROA ratio was -9.38 percent (lower limit of 2.24 percent). The poor financials were due to the impact of the pandemic (“EIH Ltd Annual Report 2020-2021,” n.d.). In 2022, EIH recorded an increase in sales of 92.31 percent which exceeded the upper limit of 36.23 percent. This was an indication of the good post pandemic recovery. However, the recovery still was not enough to result in positive earnings. Hence, the PE ratio was -99.24 (lower limit of -29.61), ROE ratio was -4.20 percent (lower limit of 3.23 percent), ROCE ratio was -2.71 percent (lower limit of -0.75 percent), and ROA ratio was -3.26 percent (lower limit of 2.24 percent) (“EIH Ltd Annual Report 2021-2022,” n.d.). The

Table 3.7.15 – Financial Data for 10 years of Selected Companies in the Hotel Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Chalet Hotels Ltd. **	**Δ Sales**		-9.35%	27.35%	50.71%	-6.53%	22.67%	-2.62%	-69.62%	64.43%	135.17%	-92.39%	136.58%
	Δ Expenses		5.82%	27.92%	10.20%	4.61%	20.22%	-12.49%	**-42.96%**	21.00%	**49.27%**	-19.97%	45.58%
	PE Ratio						87.67	40.96	-21.56	-76.02	40.05	-115.35	134.74
	ROE	-14.46%	-17.54%	-20.65%	23.47%	-19.31%	-0.70%	5.26%	-8.15%	-5.29%	12.54%	-47.58%	34.58%
	ROCE	4.30%	1.59%	2.19%	10.21%	6.31%	8.69%	7.26%	-2.28%	0.24%	10.06%	-8.15%	18.22%
	ROA	-3.12%	-3.36%	-3.17%	3.94%	-2.71%	-0.28%	2.10%	-2.98%	-1.59%	3.80%	-9.97%	8.39%
Delta Corp Ltd. **	**Δ Sales**	**154.74%**	20.89%	20.51%	16.52%	41.41%	35.43%	-9.08%	**-53.59%**	64.77%	66.29%	-44.60%	121.05%
	Δ Expenses	**111.52%**	63.29%	18.98%	14.35%	15.65%	18.06%	1.88%	**-34.55%**	35.60%	40.07%	-21.75%	75.37%
	PE Ratio	36.17	57.84	39.8383	56.87	43.05	35.08	9.54	**-83.27**	**113.91**	18.50	-23.51	99.57
	ROE	7.61%	3.70%	4.34%	5.51%	6.25%	9.47%	5.19%	4.31%	3.65%	9.94%	-0.11%	11.70%
	ROCE	6.86%	3.40%	4.08%	9.17%	9.84%	13.34%	10.69%	2.04%	5.75%	12.20%	-4.47%	19.45%
	ROA	6.18%	3.17%	3.81%	4.97%	5.50%	9.15%	5.04%	4.14%	3.46%	**9.29%**	0.72%	9.19%
EIH Ltd. **	**Δ Sales**	8.66%	6.83%	7.41%	-6.31%	4.27%	13.50%	-11.86%	**-66.98%**	**92.31%**	**101.56%**	-27.60%	36.23%
	Δ Expenses	5.66%	6.63%	5.70%	-5.88%	4.21%	10.37%	-5.89%	**-33.69%**	18.65%	**31.59%**	-22.55%	28.63%
	PE Ratio	41.77	104.42	48.82	71.66	54.46	96.04	27.12	-15.72	**-99.24**	32.93	-29.61	125.54
	ROE	3.92%	3.96%	4.41%	3.77%	3.98%	3.96%	4.26%	**-11.72%**	**-4.20%**	**10.26%**	3.23%	4.76%
	ROCE	3.21%	3.29%	3.72%	5.79%	5.91%	8.68%	5.19%	**-10.67%**	**-2.71%**	**14.74%**	-0.75%	9.86%
	ROA	2.78%	2.86%	3.24%	2.77%	2.96%	2.94%	3.18%	**-9.38%**	**-3.26%**	**8.30%**	2.24%	3.65%

**Indian Hotels Co Ltd. ** **	**Δ Sales**	2.73%	6.39%	13.25%	3.24%	7.31%	8.78%	0.24%	**-56.78%**	**73.06%**	**77.07%**	-11.05%	26.04%
	Δ Expenses	3.49%	6.35%	10.01%	8.28%	3.08%	3.43%	1.89%	**-28.68%**	**22.79%**	**24.88%**	-6.44%	19.18%
	PE Ratio	-45.20	-24.70	-72.60	-21.01	72.90	44.90	-26.60	-53.60	59.10	45.90	-169.85	174.95
	ROE	**-21.92%**	-3.13%	5.17%	5.17%	3.36%	5.88%	8.75%	-12.46%	-0.42%	9.53%	-14.69%	17.94%
	ROCE	-10.52%	-1.29%	6.52%	2.94%	2.17%	10.25%	8.96%	-2.61%	3.44%	12.68%	-13.59%	21.51%
	ROA	**-8.72%**	-1.13%	2.65%	2.29%	1.91%	3.34%	4.50%	-5.73%	-0.30%	7.15%	-7.06%	9.30%
Mahindra Holidays & Resorts India Ltd. *	**Δ Sales**	9.99%	2.50%	22.21%	12.71%	-0.84%	-13.72%	6.43%	-15.86%	16.91%	24.45%	-23.80%	39.66%
	Δ Expenses	14.67%	-0.51%	20.98%	14.27%	0.24%	-1.71%	-1.99%	-22.31%	17.29%	27.40%	-28.48%	43.70%
	PE Ratio	23.84	28.18	39.54	25.89	29.57	52.92	**-14.13**	**-214.80**	68.16	47.19	-7.03	76.66
	ROE	11.44%	11.20%	17.15%	24.87%	18.61%	21.46%	**-285.2%**	**-15.45%**	27.02%	29.62%	-7.87%	43.15%
	ROCE	21.00%	18.00%	27.00%	34.00%	31.00%	20.00%	44.00%	44.00%	34.00%	25.00%	4.00%	52.00%
	ROA	6.46%	6.69%	7.53%	8.46%	8.19%	2.62%	4.34%	2.90%	3.74%	5.06%	-1.25%	12.46%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

good recovery continued through the financial year 2022-2023 resulting in positive earnings for the financial year. As a result most of the financial measures exceeded the upper outlier limits. In 2023, the change in sales was 101.56 percent (upper limit of 36.23 percent), the change in expenses was 31.59 percent (upper limit of 28.63 percent), ROE ratio was 10.26 percent (upper limit of 4.76 percent), ROCE ratio was 14.74 percent (upper limit of 9.86 percent), and ROA ratio was 8.30 percent (upper limit of 3.65 percent) (“EIH Ltd Annual Report 2022-2023,” n.d.).

In 2014, Indian Hotels Co Ltd, recorded an ROE ratio of -21.92 percent and an ROA ratio of -8.72 percent. These values were below the lower bound values of -14.69 percent for ROE and -7.06 percent for ROA. High levels of debt resulted in negative earnings due to increased interest expenses. This contributed towards the low ROE and ROA values (“Indian Hotels Company Annual Report 2013-2014,” n.d.). In 2021, the pandemic resulted in lockdowns and travel restrictions which severely impacted the hospitality sector in general. Hence, Indian Hotels Co Ltd saw its sales decline by 56.78 percent and expenses decline by 28.68 percent. These declines were more than the lower outlier values of -11.05 percent for a decline in sales and a decline of -6.44 percent for a decline in expenses (“Indian Hotels Company Annual Report 2020-2021,” 2021). In 2022 the company recorded an increase in revenues of 73.06 percent on the back of a robust post Covid recovery. This was more than the upper bound value of 26.04 percent for an increase in sales. The growth in revenues resulted in a corresponding increase in expenses of 22.79 percent which was more than the upper limit of 19.18 percent (“Indian Hotels Company Annual Report 2021-2022,” n.d.). The post pandemic recovery continued into 2023 with Indian Hotels Company recording a 77.07 percent increase in sales and a corresponding increase in expenses 24.88 percent with both the increases exceeding the respective upper bound limits ("Indian Hotels Company Annual Report 2022-2023," n.d.).

For Mahindra Holidays & Resorts India Ltd, the PE ratio in 2020 was -14.13 and in 2021 the PE ratio was -214.80. The lower bound value for PE ratio was -7.03. The ROE ratio for the same two financial years were -285.23 percent and -15.45 percent respectively. The lower outlier for ROE ratio was -7.87 percent. The values in 2020 were due to the impact of natural disasters like the Kerala floods ("Mahindra Holidays Annual Report 2019-2020," n.d.). The values in 2021 were attributed to the impact of the pandemic on the hospitality sector ("Mahindra Holidays Annual Report 2020-2021," n.d.).

Out of the 35 deviations in financial measures studied for the Hotel industry, none were caused by environmental, social and governance related implementations.

3.7.16 The Industrial and Capital Goods Industry

The Industrial and Capital Goods industry classification is a collection of organizations in the manufacturing sector which is of strategic importance to a country's national security and economic independence like aerospace and defense ("Capital Goods Sector: Definition, Companies, and Example," n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.16 below gives the financial data for 10 years of the selected companies in this industry segment.

For ABB India Ltd, in 2017 sales declined by 29.17 percent and expenses declined by 28.26 percent. The decline in sales exceeded the lower limit decline of -22.02 percent and the decline in expenses exceeded the lower limit decline of -18.63 percent. In

November 2016, India underwent a demonetization process where 500 and 1000 rupee currency notes were made invalid. In the case of ABB India, this resulted in the decline in sales and expenses (“ABB India Limited Annual Report 2016-2017,” n.d.). In 2022, ABB recorded a high ROE of 20.57 percent which exceeded the upper limit for ROE of 18.62 percent. The same year ABB recorded an ROA of 10.90 percent of which exceeded the upper limit of 9.63 percent (“ABB India Limited Annual Report 2021-2022,” n.d.). In 2023, ABB recorded an ROE of 20.89 percent, an ROCE of 27.91 percent, and an ROA of 11.29 percent (“ABB India Limited Annual Report 2022-2023,” n.d.). Which exceeded the numbers recorded by ABB in 2022 with the ROCE value exceeding the upper limit value of 23.44 percent. Robust post Covid19 growth resulted in the high profitability ratios in 2022 and 2023.

For Apar Industries Ltd, the ROE in 2023 was 29.26 percent. This was more than the upper bound of 20.19 percent. The ROA in the same year was 7.92 percent. This value again exceeded the upper bound value of 5.71 percent. Apar Industries benefitted from robust growth in EBITDA from INR 5.7 billion in FY 2021-2022 to INR 13.2 billion in FY 2022-2023 and effective asset utilization as indicated by effective management of financial leverage. In addition to this there was a heightened demand for the company’s green energy solutions (“Apar Industries Ltd. Annual Report 2022-2023,” n.d.).

In 2022, Cummins India Ltd recorded a 38.79 percent increase in expenses which exceeded the upper outlier value of 34.11 percent. The increase in expenses were neccessitated to complement the 36.78 percent growth in revenues (“Cummins India Annual Report 2021-2022,” n.d.).

In the case of EPL Ltd, all the financial measures were within the upper and lower bound values for each metric.

Table 3.7.16 – Financial Data for 10 years of Selected Companies in the Industrial and Capital Goods Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
ABB India Ltd. **	**Δ Sales**	0%	5.20%	6.87%	**-29.17%**	9.76%	9.38%	-20.00%	19.67%	23.31%	22.88%	-22.02%	40.71%
	Δ Expenses	-0.82%	3.83%	5.98%	**-28.26%**	9.27%	8.10%	-17.60%	14.23%	18.99%	17.68%	-18.63%	31.96%
	PE Ratio	73.47	105.69	69.67	52.25	62.62	49.05	89.76	117.16	91.07	55.94	7.92	140.44
	ROE	8.12%	9.96%	11.46%	11.64%	12.74%	8.61%	6.07%	12.84%	**20.57%**	**20.89%**	3.15%	18.62%
	ROCE	16.12%	15.45%	16.78%	10.69%	11.10%	14.96%	7.17%	15.08%	20.86%	**27.91%**	5.24%	23.44%
	ROA	3.34%	4.04%	4.86%	4.72%	5.62%	3.93%	2.88%	6.43%	**10.90%**	**11.29%**	0.55%	9.63%
Apar Industries Ltd. **	**Δ Sales**	-1.15%	11.85%	0.30%	-4.82%	15.35%	37.53%	-7.01%	-15.30%	44.20%	53.02%	-57.75%	85.83%
	Δ Expenses	-0.25%	12.93%	-1.80%	-7.20%	17.58%	38.98%	-6.46%	-15.87%	43.35%	49.10%	-63.69%	92.03%
	PE Ratio	6.20	28.81	14.58	16.26	19.26	18.91	8.17	11.34	9.69	15.04	-2.13	30.47
	ROE	11.33%	7.51%	15.21%	19.23%	14.12%	13.07%	12.76%	10.47%	14.73%	**29.26%**	6.58%	20.19%
	ROCE	9.70%	6.25%	13.50%	17.63%	30.57%	33.39%	30.59%	20.50%	24.22%	48.59%	-9.55%	54.66%
	ROA	2.35%	1.67%	4.16%	5.64%	3.60%	3.09%	3.22%	2.93%	3.79%	**7.92%**	1.32%	5.71%
Cummins India Ltd. **	**Δ Sales**	-13.38%	12.95%	5.16%	7.11%	0.49%	12.07%	-7.77%	-14.39%	36.78%	27.02%	-33.36%	40.38%
	Δ Expenses	-12.33%	12.53%	7.17%	8.77%	1.86%	10.38%	-4.29%	-17.39%	**38.79%**	23.28%	-24.86%	34.11%
	PE Ratio	27.57	31.06	30.94	35.83	27.40	28.62	25.39	41.26	35.06	39.98	16.13	47.33
	ROE	23.39%	27.22%	21.66%	19.63%	17.77%	17.49%	15.07%	14.02%	18.27%	21.04%	11.64%	27.42%
	ROCE	21.82%	25.39%	20.97%	19.16%	17.32%	24.16%	18.16%	17.90%	20.47%	27.00%	10.66%	31.32%
	ROA	15.90%	18.18%	16.79%	14.57%	12.80%	12.34%	10.56%	10.84%	13.02%	15.04%	7.61%	20.53%

EPL Ltd. **	**Δ Sales**	11.95%	12.03%	-1.60%	6.80%	4.51%	1.40%	2.15%	8.26%	15.61%	20.54%	-11.16%	25.91%
	Δ Expenses	11.90%	13.32%	-5.57%	9.01%	1.29%	4.97%	-2.45%	4.47%	16.62%	24.17%	-14.23%	29.28%
	PE Ratio	8.38	13.96	14.75	19.62	21.92	19.10	23.61	31.18	28.53	22.77	4.49	34.74
	ROE	7.45%	11.81%	20.94%	10.46%	12.39%	9.46%	15.18%	20.83%	21.91%	22.88%	-4.38%	36.09%
	ROCE	5.30%	7.20%	15.40%	8.04%	10.69%	13.95%	18.37%	22.18%	21.91%	21.12%	-8.89%	38.03%
	ROA	4.30%	5.67%	12.63%	6.80%	8.19%	6.36%	9.80%	14.16%	14.48%	15.36%	-4.49%	24.74%
Sterlite Technologies Ltd. **	**Δ Sales**	-18.55%	12.09%	-33.25%	10.44%	27.37%	**69.62%**	-2.13%	-12.39%	20.97%	8.87%	-52.68%	61.61%
	Δ Expenses	-19.07%	11.45%	-39.33%	15.45%	20.90%	**62.14%**	2.80%	-8.73%	30.99%	1.49%	-44.73%	58.10%
	PE Ratio	-21.15	**-675.79**	19.16	24.90	37.47	15.62	5.94	27.96	**144.13**	41.71	-31.74	75.19
	ROE	4.12%	6.77%	22.21%	17.89%	23.80%	33.70%	23.95%	14.31%	4.43%	4.03%	-22.57%	50.98%
	ROCE	8.44%	12.03%	25.55%	20.11%	25.08%	39.58%	31.56%	19.89%	9.30%	26.49%	-4.40%	44.65%
	ROA	1.41%	1.99%	7.27%	5.67%	7.52%	9.03%	7.11%	3.88%	1.10%	0.99%	-6.96%	15.74%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

For Sterlite Technologies Ltd, the PE ratio in 2016 was -675.79 which was below the lower limit value of -31.74. The price per share was around INR 45 and earnings per share was a very slight negative at -0.07 ("Sterlite Technologies Annual Report 2014-2015," n.d.). In 2019, Sterlite Technologies recorded an increase in revenues of 69.62 percent which exceeded the upper bound value of 61.61 percent. The increase in expenses was also 62.14 percent which was greater than the upper limit value of 58.10 percent. The growth in revenues was primarily due to the acquisition of Metallurgica Bresciana and capacity expansion projects. The increase in expenses was primarily to accommodate the growth in revenues ("Sterlite Technologies Annual Report 2018-2019," n.d.). In 2022, the PE ratio of the company was 144.13 which exceeded the upper limit value of 75.19. This was because EPS was quite low (INR 1.56) but the share price was quite high (INR 224.45). The high share price was due to market optimism based on risk management initiatives and growth in revenues realized by Sterlite Technologies compared to the previous fiscal ("Sterlite Technologies Annual Report 2021-2022," n.d.).

Out of the 14 deviations in the financial measures observed for the Industrial and Capital Goods industry, ESG related implementations cause only two deviations. These were the high values of ROE and ROA for Apar Industries in FY 2022-2023.

3.7.17 The Insurance Industry

All companies which provide a cover for various forms of risks through the medium of insurance policies fall in this category. Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.17 below gives the financial data for 10 years of the selected companies in this industry segment.

General Insurance Corporation (GIC) of India recorded an ROE ratio of -1.42 percent and an ROCE ratio of -1.21 percent in 2020. These values were lower than the lower bound for ROE at 1.84 percent and the lower bound for ROCE at 4.79 percent. The company experienced underwriting losses which resulted in a negative operating profit for FY 2019-2020. The negative ROE and ROCE were the direct outcomes of the negative profit ("General Insurance Corporation of India Annual Report 2019-2020," n.d.). The company recorded an ROE ratio of 15.03 percent and an ROCE ratio of 12.97 percent in 2023. These values were higher than the upper bound for ROE at 14.43 percent and the upper bound for ROCE at 8.90 percent. GIC's profit on the sale of investments increased by almost 11 percent during the financial year. GIC also brought down its CSR spendings by more than 50 percent. Such factors increase profitability which directly caused the profitability ratios like ROE and ROCE to be high ("General Insurance Corporation of India Annual Report 2022-2023," n.d.).

For ICICI Lombard General Insurance Company Ltd, none of the financial values captured or recorded deviated beyond the statistically significant lower and upper outlier values.

For ICICI Prudential Life Insurance Company Ltd, the increase in revenues in 2021 was 295.68 percent. This value was more than the upper outlier value of 149.46 percent. In that year, the increase in expenses was 291.61 percent. This value was more than the upper outlier value of 155.18 percent. The increase in revenues was primarily due to significant growth in new business premiums and investment income. The increase in expenses were due to commissions, employee expenses, legal and professional charges, and interest expenses ("ICICI Prudential Annual Report 2020-21," n.d.).

For Max Financial Services Ltd, none of the financial values captured or recorded deviated beyond the statistically significant lower and upper outlier values.

Table 3.7.17 – Financial Data for 10 years of Selected Companies in the Insurance Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
General Insurance Corporation of India. **	**Δ Sales**	3%	31.13%	10.44%	58.68%	38.86%	2.16%	23.96%	-11.89%	1.84%	-3.95%	-39.20%	70.46%
	Δ Expenses	8.26%	0.22%	11.55%	65.05%	43.79%	2.95%	35.45%	-18.30%	1.10%	-14.52%	-43.10%	73.02%
	PE Ratio	27.00	32.59	3.09	3.64	18.43	12.68	-2.05	10.95	11.43	35.98	-23.62	53.94
	ROE	6.99%	6.42%	7.25%	10.98%	10.39%	7.00%	**-1.42%**	6.35%	7.67%	**15.03%**	1.84%	14.43%
	ROCE	6.99%	6.74%	7.52%	7.47%	7.01%	6.38%	**-1.21%**	6.29%	6.31%	**12.97%**	4.79%	8.90%
	ROA	3.68%	3.44%	3.57%	3.29%	2.94%	1.87%	-0.30%	1.42%	1.38%	4.01%	-1.48%	6.55%
ICICI Lombard General Insurance Company Ltd. *	**Δ Sales**	8.48%	-2.72%	42.49%	24.65%	-8.09%	61.51%	3.17%	5.78%	31.55%	11.54%	-35.18%	68.82%
	Δ Expenses	9.23%	-2.67%	18.26%	25.28%	8.67%	32.34%	2.64%	8.72%	40.78%	10.84%	-13.58%	45.79%
	PE Ratio				43.30	38.00	55.30	49.00	51.60	37.80	30.40	19.30	68.90
	ROE	21.73%	20.29%	15.68%	17.99%	18.98%	19.43%	19.46%	19.39%	13.83%	16.56%	13.11%	23.26%
	ROCE	26.00%	27.17%	23.12%	23.88%	26.68%	30.57%	27.14%	26.58%	20.30%	22.01%	17.74%	32.60%
	ROA	1.53%	1.51%	4.87%	3.94%	0.88%	5.00%	4.78%	4.04%	2.19%	2.44%	7.18%	11.67%
ICICI Prudential Life Insurance Company Ltd. *	**Δ Sales**	9.30%	57.41%	-39.49%	81.39%	2.69%	6.77%	-49.30%	**295.68%**	-25.10%	-20.71%	-128.08%	149.46%
	Δ Expenses	5.72%	60.92%	-42.05%	89.46%	2.92%	9.81%	-47.56%	**291.61%**	-23.95%	-21.03%	-130.25%	155.18%
	PE Ratio				32.64	34.45	44.15	47.87	66.92	94.83	77.05	-9.72	121.01
	ROE	35.62%	31.16%	31.00%	26.25%	24.63%	16.58%	14.79%	10.50%	8.29%	8.06%	-15.79%	57.17%
	ROCE	38.00%	34.00%	32.00%	29.00%	29.00%	19.00%	17.00%	14.00%	9.00%	10.00%	-10.00%	56.00%
	ROA	1.85%	1.64%	1.76%	1.45%	1.25%	0.33%	0.19%	0.15%	0.47%	0.35%	2.84%	4.25%

Max Financial Services Ltd. ＊＊	**Δ Sales**	-33.99%	-42.02%	-65.59%	27.39%	3.08%	20.29%	55.76%	-37.82%	-34.34%	-71.20%	-126.40%	101.42%
	Δ Expenses	-5.66%	-86.00%	-25.86%	18.95%	17.60%	123.11%	-63.23%	80.65%	-69.15%	-29.09%	-164.65%	128.57%
	PE Ratio	34.41	35.61	36.35	39.01	42.50	44.65	71.49	69.72	102.68	57.90	-7.62	111.40
	ROE	5.81%	11.31%	6.89%	8.42%	7.49%	2.46%	11.95%	1.49%	1.52%	0.20%	-7.89%	17.84%
	ROCE	5.69%	11.31%	6.88%	8.40%	7.45%	3.81%	16.37%	1.94%	2.17%	0.28%	-5.79%	16.54%
	ROA	5.25%	11.13%	6.62%	8.29%	6.95%	2.24%	10.79%	1.48%	1.51%	0.20%	-7.70%	17.35%
SBI Life Insurance Company Ltd. ＊	**Δ Sales**	16.06%	35.00%	-17.06%	58.08%	11.53%	30.93%	-1.81%	**87.03%**	1.31%	-2.83%	-53.55%	86.50%
	Δ Expenses	15.95%	34.38%	-18.22%	60.18%	11.05%	31.75%	-1.58%	**90.92%**	1.50%	-2.15%	-52.62%	85.53%
	PE Ratio					58.96	43.97	45.07	60.51	74.50	64.05	26.61	85.10
	ROE	21.68%	20.09%	17.83%	17.19%	17.62%	17.51%	16.27%	14.00%	12.96%	13.22%	9.74%	22.61%
	ROCE	27.00%	25.45%	23.02%	22.55%	23.65%	23.39%	21.94%	17.13%	15.32%	15.47%	10.46%	31.46%
	ROA	0.84%	1.07%	1.10%	1.05%	1.09%	1.00%	0.82%	0.38%	0.27%	0.05%	0.37%	1.92%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

For SBI Life Insurance Company Ltd, the increase in revenues in 2021 was 87.03 percent. This value was more than the upper outlier value of 86.50 percent. In that year, the increase in expenses was 90.92 percent. This value was more than the upper outlier value of 85.53 percent. The growth in revenues was due to an over 20 percent growth in renewal premiums and an over 50 percent growth in individual single premiums. The growth in expenses was due to increased claims given the pandemic, operating and commission expenses, and a significant increase in actuarial liability from INR 206 billion to INR 539 billion ("SBI Life Annual Report 2020-2021," n.d.).

Out of the 8 deviations in the financial measures observed for the Insurance industry, ESG related implementations cause only two deviations. These were the high values of ROE and ROCE for General Insurance Corporation of India in FY 2022-2023 due to a significant cut in its CSR expenditure.

3.7.18 The Internet Industry

The Internet industry consists of companies that primarily provide products and services online through their websites ("Internet industry | The IT Law Wiki | Fandom," n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.18 below gives the financial data for 10 years of the selected companies in this industry segment.

The financial data for Indiamart Intermesh Ltd is available in the Bombay Stock Exchange only from 2019 as the company did not raise public money before that period. The ROE ratio for Indiamart in 2020 was recorded as 53.26 percent. This exceeded the upper limit value of 43.18 percent. The high ROE was due to a significant jump in profitability due to an increase of around 30 percent in operating income ("IndiaMART InterMESH Ltd. Annual Report 2019-2020," n.d.).

For Infibeam Avenues Ltd, in 2015, the ROE, ROCE, and ROA ratios of -3.09 percent, -3.02 percent, and -2.94 percent respectively were below the lower limit values of -2.28 percent for ROE, -2.11 percent for ROCE, and -1.87 percent for ROA. The company reported losses due to additional costs related to platform and geographical expansion, and costs related to increasing market share like discounts and promotions offered ("Infibeam Avenues Ltd. Annual Report 2015-2016," n.d.). In 2017, the ROCE ratio for the company was 6.13 percent which was more than the upper bound value of 5.89 percent. Growth in revenues powered by strategic acquisitions like CCAvenue and DRC Systems increased proft margins directly inflating the profitability measures like ROCE ("Infibeam Avenues Ltd. Annual Report 2016-2017," n.d.). In 2018, Infibeam's expenses increased by 579.14 percent which exceeded the upper limit bound of 460.60 percent. The increase in expenses was driven by the increase in revenues including items like operating and direct expenses, and employee costs ("Infibeam Avenues Ltd. Annual Report 2017-2018," n.d.). In 2023, the ROE, ROCE, and ROA ratios of 4.57 percent, 5.92 percent, and 3.54 percent respectively were above the upper limit values of 4.18 percent for ROE, 5.89 percent for ROCE, and 3.46 percent for ROA. Infibeam's profit surged in FY 2022-23 on absolute terms on the back of high transactions from the government e-marketplace. Transaction processing value increased by more than 50 percent. Increased profitability reflected in the high profitability values ("Infibeam Avenues Ltd. Annual Report 2022-2023," n.d.).

Info Edge (India) Ltd recorded a decrease in sales of 10.51 percent in 2021 which was more than the lower limit value of -3.91 percent. Pandemic induced business

Table 3.7.18 – Financial Data for 10 years of Selected Companies in the Internet Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Indiamart Intermesh Ltd. *	**Δ Sales**							25.55%	6.57%	12.93%	25.03%	-9.39%	45.90%
	Δ Expenses							-6.63%	-26.39%	32.23%	54.21%	-85.50%	111.66%
	PE Ratio							38.28	81.91	42.62	56.43	9.64	94.70
	ROE							**53.26%**	17.73%	16.37%	13.18%	-0.98%	43.18%
	ROCE							86.00%	40.00%	22.00%	17.00%	-25.38%	97.63%
	ROA							15.43%	13.25%	10.53%	7.79%	3.91%	19.73%
Infibeam Avenues Ltd. **	**Δ Sales**	314.18%	172.16%	46.84%	106.62%	272.85%	66.43%	6.68%	-0.85%	100.67%	57.46%	-109.92%	315.19%
	Δ Expenses	231.13%	214.73%	2.85%	10.87%	**579.14%**	72.78%	4.64%	-0.82%	107.66%	53.03%	-266.44%	460.60%
	PE Ratio				111.54	88.03	21.62	20.21	87.34	59.85	27.14	-70.57	182.64
	ROE	-0.86%	**-3.09%**	0.60%	0.02%	0.52%	1.49%	1.48%	1.85%	2.54%	**4.57%**	-2.28%	4.18%
	ROCE	-0.82%	**-3.02%**	0.63%	**6.13%**	1.66%	1.97%	2.46%	2.36%	3.03%	**5.92%**	-2.11%	5.89%
	ROA	-0.82%	**-2.94%**	0.57%	0.01%	0.47%	1.29%	1.33%	1.50%	1.95%	**3.54%**	-1.87%	3.46%
Info Edge (India) Ltd. **	**Δ Sales**	13.51%	25.30%	17.19%	7.23%	17.12%	19.44%	12.48%	**-10.51%**	**42.33%**	34.69%	-3.91%	40.47%
	Δ Expenses	19.88%	25.30%	30.46%	2.06%	6.85%	21.51%	18.09%	-5.19%	31.36%	24.45%	-13.49%	48.23%
	PE Ratio	75.45	41.96	68.39	-41.04	27.96	37.27	-104.91	38.93	4.55	-44.79	-135.91	147.47
	ROE	16.85%	11.66%	8.02%	10.30%	8.65%	12.12%	8.45%	5.93%	**63.85%**	3.76%	2.31%	17.82%
	ROCE	16.75%	11.61%	7.99%	10.28%	17.65%	18.55%	18.04%	7.65%	3.93%	7.86%	-6.41%	31.72%
	ROA	13.09%	9.98%	6.88%	8.45%	6.93%	9.57%	6.61%	5.10%	**55.18%**	3.18%	1.88%	14.68%

Just Dial Ltd. **	**Δ Sales**	33.20%	27.41%	17.33%	7.52%	5.21%	16.14%	11.01%	**-24.53%**	-6.74%	28.29%	-22.87%	53.55%
	Δ Expenses	21.73%	33.21%	23.05%	17.74%	0.71%	6.51%	6.44%	**-23.09%**	20.29%	16.47%	-15.92%	43.74%
	PE Ratio	90.18	67.19	37.32	30.22	20.86	18.91	6.99	24.94	83.84	30.80	-34.89	116.49
	ROE	22.56%	20.62%	21.11%	13.40%	14.62%	20.70%	21.15%	16.94%	**2.03%**	4.44%	2.75%	31.96%
	ROCE	22.35%	20.50%	20.97%	17.09%	19.42%	27.40%	25.67%	18.98%	**2.49%**	**5.14%**	10.90%	28.67%
	ROA	15.76%	14.39%	14.80%	9.58%	10.15%	13.34%	14.86%	11.99%	**1.75%**	3.75%	2.26%	22.16%
Nazara Technologies Ltd. **	**Δ Sales**				-9.95%	-9.53%	-1.36%	45.85%	83.51%	36.88%	75.49%	-104.61%	159.84%
	Δ Expenses				-4.52%	-4.35%	25.04%	65.25%	62.91%	28.96%	84.79%	-70.26%	144.69%
	PE Ratio								485.31	188.06	86.77	-161.49	635.59
	ROE				**10.06%**	-4.68%	0.87%	2.21%	0.17%	-3.76%	-2.62%	-9.42%	7.20%
	ROCE				14.42%	14.36%	1.23%	3.18%	-0.14%	-3.80%	-2.30%	-16.21%	23.76%
	ROA				**8.65%**	4.23%	0.82%	2.03%	0.14%	3.67%	2.59%	9.96%	8.26%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

restrictions resulted in the decline in revenues from the recruitment and real estate solutions offered by the company ("Info Edge (India) Annual Report 2020-2021," n.d.). In the following year, the revenues increased by 42.33 percent indicating a robust post pandemic recovery. This exceeded the upper bound value of 40.47 percent. The resulting increase in profitability resulted in high ROE and ROA ratios of 63.85 percent and 55.18 percent respectively. Both these ratios were more than the respective upper limit values of 17.82 percent and 14.68 percent ("Info Edge (India) Annual Report 2021-2022," n.d.).

Just Dial Ltd recorded a decline in revenues of 24.53 percent and a decline in expenses of 23.09 percent in 2021. The decline in revenues exceeded the lower limit decline in revenues of -22.87 percent and the decline in expenses exceeded the lower limit decline in expenses of -15.92 percent. Covid19 related business disruptions were directly responsible for the declines ("Just Dial Ltd. Annual Report 2020-2021," n.d.). In 2022, the ROE, ROCE, and ROA ratios of 2.03 percent, 2.49 percent, and 1.75 percent respectively were below the lower limit values of 2.75 percent for ROE, 10.90 percent for ROCE, and 2.26 percent for ROA. For Just Dial, the post pandemic recovery was not as per expectations. Expenses were also high due to an increase in employee benefit expenses compared to the previous year. As a result, profits were low which resulted in low profitability ratios ("Just Dial Ltd. Annual Report 2021-2022," n.d.). The ROCE ratio in 2023 was 5.14 percent which was below the lower limit value of 10.90 percent. The company's non-current liabilities increased resulting a high capital base without a proportionate increase in operating profit. This affected the ROCE ratio ("Just Dial Ltd. Annual Report 2022-2023," n.d.).

For Nazara Technologies Ltd, financial statements are available only from 2017. In 2017, the ROE ratio was 10.06 percent and the ROA ratio was 8.65 percent. The ROE upper limit was 7.20 percent and the ROA upper limit was 8.26 percent. In FY 2016-

2017, strategic acquisitions made by Nazara Technologies like acquiring 52 percent shareholding in Next Wave resulted in increased revenues and profits. This resulted in high profitability ratios including ROE (“Nazara Technologies Ltd Annual Report 2016-2017,” n.d.).

A total of 21 deviations in the financial values of 5 companies under the Internet industry were studied. None of the deviations were noted as being a result of ESG implementation by a company.

3.7.19 The IT Industry

IT (Information Technology) industry segment includes all companies which are involved in providing information technology based solutions to the business problems faced by their clients. This work usually involves software development, data management, and hardware and network maintenance (“IT Definition, History, Components, Careers, and Certifications,” n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.19 below gives the financial data for 10 years of the selected companies in this industry segment.

In 2014, the ROE of HCL Technologies Ltd was 38 percent which exceeded the upper limit value of 32.44 percent. This high ROE was attributed to efficient working capital management, high conversion of profits into cash, and high profitability due to a revenue growth of over 30 percent (“HCL Tech Annual Report 2013-2014,” n.d.). In 2016, there was a decline in revenues of 21.52 percent (lower limit bound of -6.23 percent), a decline in expenses of -19.08 percent (lower limit bound of -5.45 percent) and the ROCE ratio was 21.37 percent (lower limit bound of 24.33 percent). The decline in

Table 3.7.19 – Financial Data for 10 years of Selected Companies in the IT (Information Technology) Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
HCL Technologies Ltd. **	Δ Sales	33%	6.97%	**-21.52%**	**40.76%**	12.34%	17.75%	23.78%	10.38%	13.32%	13.94%	-6.23%	39.37%
	Δ Expenses	15.55%	9.18%	**-19.08%**	**39.16%**	13.77%	23.71%	30.38%	10.05%	16.60%	15.37%	-5.45%	38.36%
	PE Ratio	16.13	17.67	20.49	14.50	15.46	14.57	10.71	23.93	23.39	19.83	6.50	28.63
	ROE	**38.00%**	32.00%	21.95%	26.46%	26.70%	26.88%	24.04%	20.07%	25.53%	27.87%	19.60%	32.44%
	ROCE	36.33%	31.86%	**21.37%**	31.49%	32.52%	32.00%	28.84%	27.76%	30.14%	34.76%	24.33%	37.23%
	ROA	27.43%	25.47%	17.74%	21.23%	22.43%	21.85%	16.75%	15.79%	20.35%	21.47%	12.55%	28.12%
Infosys Ltd. *	Δ Sales	20.61%	6.67%	14.13%	9.83%	4.47%	18.03%	8.13%	8.68%	20.98%	19.31%	-7.82%	35.08%
	Δ Expenses	23.54%	4.78%	14.83%	9.95%	6.09%	21.93%	8.41%	4.14%	23.85%	22.61%	-16.98%	46.09%
	PE Ratio	18	18.8	15.9	15.00	19.00	19.10	28.70	37.20	35.60	24.60	3.99	41.89
	ROE	23.93%	24.39%	21.85%	21.81%	24.69%	23.72%	25.35%	25.34%	**29.34%**	**31.95%**	21.40%	27.72%
	ROCE	36.00%	36.00%	32.00%	29.00%	30.00%	31.00%	32.00%	35.00%	39.00%	**44.00%**	24.13%	43.13%
	ROA	36.00%	22.45%	22.74%	22.37%	23.72%	23.99%	24.26%	25.94%	26.98%	28.20%	19.05%	29.40%
Mindtree Ltd. *	Δ Sales	23.33%	28.36%	17.49%	31.19%	12.06%	4.32%	28.53%	10.58%	2.62%	32.10%	-15.36%	54.80%
	Δ Expenses	17.72%	26.83%	17.80%	35.03%	17.65%	4.20%	26.15%	12.18%	-5.56%	31.98%	-6.11%	46.31%
	PE Ratio	17.76	22.84	19.35	22.78	23.92	21.61	29.89	38.75	33.14	25.46	11.58	39.10
	ROE	25.83%	27.48%	26.64%	22.88%	16.24%	20.80%	22.81%	19.99%	25.71%	30.20%	13.59%	34.15%
	ROCE	35.00%	38.00%	36.00%	34.00%	23.00%	26.00%	31.00%	25.00%	36.00%	42.00%	14.13%	49.13%
	ROA	26.75%	29.06%	26.71%	25.05%	20.78%	19.82%	25.47%	20.97%	26.04%	26.92%	14.87%	33.87%

Tata Consultancy Services Ltd. **	**Δ Sales**	33.82%	15.13%	14.83%	8.52%	6.06%	26.79%	6.57%	1.42%	18.72%	16.60%	-9.64%	34.89%
	Δ Expenses	26.58%	22.11%	11.59%	11.47%	6.00%	26.48%	8.11%	1.90%	19.00%	21.92%	-10.72%	41.72%
	PE Ratio	23.30	22.20	17.90	20.10	23.80	25.00	34.40	36.80	29.40	27.80	12.69	38.79
	ROE	41.93%	42.40%	35.49%	30.31%	33.27%	38.10%	44.72%	41.39%	49.48%	52.46%	24.15%	56.14%
	ROCE	40.74%	41.32%	34.90%	38.05%	41.50%	50.71%	52.79%	52.75%	60.23%	65.07%	23.04%	70.62%
	ROA	32.07%	30.53%	29.80%	26.35%	27.72%	30.21%	31.68%	28.30%	31.49%	32.63%	24.24%	36.07%
Wipro Ltd. **	**Δ Sales**	16.83%	8.27%	8.43%	2.75%	-3.09%	7.42%	4.32%	-0.38%	**22.02%**	9.07%	-5.50%	17.55%
	Δ Expenses	12.48%	7.77%	11.00%	3.29%	-2.24%	9.87%	2.58%	-4.49%	22.55%	18.00%	-11.27%	26.14%
	PE Ratio	26.30	27.30	25.00	26.90	25.50	15.70	23.60	32.70	17.90	17.60	8.19	37.89
	ROE	25.16%	23.66%	19.89%	17.47%	18.27%	15.41%	18.68%	22.23%	22.32%	14.62%	10.73%	29.24%
	ROCE	23.96%	22.73%	18.75%	22.61%	23.87%	20.44%	23.62%	27.49%	27.32%	19.40%	16.55%	28.37%
	ROA	16.15%	15.34%	13.91%	12.92%	13.16%	11.36%	13.29%	15.30%	15.09%	10.75%	9.58%	18.65%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

sales and expenses were due to the drop in the demand for physical servers especially in the US and European markets. The decline in sales resulted in a decline in profitability. In addition to this, trade receivables increased significantly from around INR 62 million to around INR 72 million indicating that capital was tied up in outstanding payments from customers. Low profitability coupled with capital being tied up contributed to the low ROCE ("HCL Tech Annual Report 2015-2016," n.d.). In 2017, the increase in revenues was 40.76 percent. This exceeded the upper bound value of 39.37 percent for an increase in revenues. The increase in expenses in the same year was 39.16 percent. This also exceeded the upper bound value of 38.36 percent for an increase in expenses. The increase in revenues and expenses were due to acquisition of new clients and contracts in IT and engineering services, and geographical expansion through the acquisition of Butler America Aerospace and amalgamation of the business undertaking of Geometric Limited ("HCL Tech Annual Report 2016-2017," n.d.).

Infosys Ltd recorded an ROE ratio of 29.34 percent in 2022. This was more than the upper bound value for the ROE ratio of 27.72 percent. During FY 2021-2022, Infosys recorded the highest annual growth which translated into higher returns for shareholders. Hence, the ROE was high ("Infosys Integrated Annual Report 2021-2022," n.d.). In 2023, the ROE ratio continued to rise and was 31.95 percent. In addition to this ratio, the ROCE value also exceeded the upper bound value of 43.13 percent and was recorded at 44 percent. This year, the high ROE and ROCE values were driven by share buybacks and significant revenue growth of over 20 percent boosting profitability ("Infosys Integrated Annual Report 2022-2023," n.d.).

No statitically significant deviations were observed in the fianncial values recorded or calculated for Mindtree Ltd.

For Tata Consultancy Services Ltd, none of the financial values were above or below the statistically significant upper or lower values calculated for the company.

For Wipro Ltd, the increase in revenues in 2022 was 22.02 percent. This was more than the upper bound value of 17.55 percent. The growth in revenues was led by a surge in demand for IT services, completion of acquisitions like Capco, new client contracts, and the depreciation of the Indian Rupee ("Wipro Ltd. Annual Report 2021-2022," n.d.).

None of the 10 deviations in the IT industry were due to ESG factors.

3.7.20 The Lending Industry

The Lending industry includes any organization which can lend capital to an individual or another organization upon the receipt of a request for borrowing ("Lending Company Definition | Law Insider," n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.20 below gives the financial data for 10 years of the selected companies in this industry segment.

For Axis Bank Ltd, all the financial data recorded and calculated were within the statistically significant upper and lower limits for each of the six financial metrics analysed.

In the case of Equitas Small Finance Bank Ltd, financial data is available only from 2017. This is because the bank began operations in 2016 and became a scheduled bank only in 2017. In 2018, the increase in expenses was 57.83 percent, the ROCE was 1.72 percent, and the ROA was 0.23 percent. The increase in expense exceeded the upper outlier value of 35.94 percent. The ROCE value was lower than the lower outlier value of

2.04 percent. The ROA value was lower than the lower outlier value of 0.54 percent. Interests paid on deposits contributed primarily to the increase in expenses. The bank also faced increase costs due to a focus on expansion of its brach network. As expenses increased, profitability dropped. There was also a deterioration in asset quality in the microfinance segment thereby requiring higher provisioning for such assets. This had a detrimental impact on the return on assets and capital ("Equitas Small Finance Bank Annual Report 2017-2018," n.d.).

For Housing Development Finance Corporation Ltd, the ROA in 2020 was 3.39 percent which exceeded the upper limit value 2.86 percent. This high was due to increased profitability where the demand for loan assets remained stable despite the onset of the pandemic towards the beginning of 2020 ("Housing Development Finance Corporation Annual Report 2019-2020," n.d.). In 2021, the decline in sales was recorded as 18.02 percent and the decline in expenses was recorded as 13.15 percent. Both these values were below the lower limit decline in sales of -14.27 percent and the decline in expenses of -10.64 percent. FY 2020-2021 witnessed the full impact of the pandemic on most businesses. The decline in revenues and expenses in this instance was also due to Covid19 ("Housing Development Finance Corporation Annual Report 2020-2021," n.d.). In 2023, the ROCE was recorded as 41.15 percent. This exceeded the upper outlier value for ROCE at 22.07 percent. During FY 2022-23, the company's asset quality improved reducing credit costs. Reduced credit costs meant increase in profitability and lower provisioning for bad debt. This had a positive impact on the ROCE ratio ("Housing Development Finance Corporation Annual Report 2022-2023," n.d.).

For ICICI Bank Ltd, revenues in 2018 declined by 1.73 percent which was below the lower limit value of -0.12 percent. This decline was due to a decrease in interest

Table 3.7.20 – Financial Data for 10 years of Selected Companies in the Lending Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Axis Bank Ltd. **	**Δ Sales**	13%	15.24%	14.86%	11.66%	0.91%	20.03%	14.76%	0.40%	5.24%	23.08%	-5.60%	27.59%
	Δ Expenses	11.47%	14.63%	15.49%	24.73%	7.45%	12.34%	20.66%	-6.07%	-3.23%	32.36%	-7.90%	35.72%
	PE Ratio	10.87	17.83	12.67	29.74	28.74	39.67	39.61	29.70	16.55	24.42	-2.42	49.01
	ROE	16.26%	16.46%	15.46%	6.59%	0.43%	7.01%	1.91%	6.48%	11.30%	7.63%	-5.36%	26.29%
	ROCE	3.10%	2.99%	3.15%	3.05%	2.34%	2.47%	2.68%	2.70%	2.20%	1.57%	1.38%	4.03%
	ROA	1.62%	1.59%	1.56%	0.61%	0.03%	0.58%	0.17%	0.66%	1.10%	0.72%	-0.70%	2.73%
Equitas Small Finance Bank Ltd. **	**Δ Sales**					46.91%	34.25%	22.26%	23.39%	10.65%	20.87%	5.75%	47.00%
	Δ Expenses					**57.83%**	24.67%	22.89%	20.27%	15.13%	14.57%	4.69%	35.94%
	PE Ratio								17.87	22.79	12.99	8.08	27.68
	ROE				5.17%	1.55%	9.34%	8.87%	11.31%	6.61%	11.12%	-0.62%	16.74%
	ROCE				2.96%	**1.72%**	2.79%	3.20%	3.70%	3.37%	3.50%	2.04%	4.28%
	ROA				1.12%	**0.23%**	1.33%	1.26%	1.55%	1.04%	1.64%	0.54%	1.98%
Housing Development Finance Corporation Ltd. **	**Δ Sales**	14.42%	13.53%	12.69%	7.12%	22.76%	6.56%	35.47%	**-18.02%**	-0.39%	25.49%	-14.27%	41.64%
	Δ Expenses	14.98%	12.47%	10.62%	7.60%	22.67%	9.96%	26.94%	**-13.15%**	-7.84%	30.79%	-10.64%	39.57%
	PE Ratio	17.35	23.64	17.14	21.59	25.54	20.87	13.20	24.05	19.18	18.41	9.35	31.40
	ROE	19.46%	19.34%	20.78%	18.77%	16.79%	12.45%	20.62%	11.05%	11.42%	12.12%	1.36%	30.27%
	ROCE	4.59%	4.51%	4.79%	16.00%	10.81%	11.18%	12.74%	9.70%	9.11%	**41.15%**	-3.85%	22.07%
	ROA	2.40%	2.35%	2.45%	2.20%	2.74%	2.09%	**3.39%**	2.11%	2.14%	2.23%	1.73%	2.86%

ICICI Bank Ltd. **	**Δ Sales**	12.77%	12.20%	11.09%	8.23%	**-1.73%**	7.64%	17.11%	7.50%	6.94%	**23.04%**	-0.12%	20.28%
	Δ Expenses	11.72%	11.82%	16.46%	9.47%	2.74%	13.63%	11.76%	-1.71%	-0.42%	19.15%	-8.72%	26.31%
	PE Ratio	8.35	3.73	4.55	23.30	23.30	36.10	25.00	22.80	19.00	18.00	-8.04	42.11
	ROE	13.39%	13.89%	11.19%	10.11%	6.63%	3.19%	6.99%	11.21%	13.94%	16.13%	-1.22%	22.76%
	ROCE	2.96%	3.20%	3.47%	3.59%	2.91%	2.52%	2.67%	3.10%	2.92%	3.27%	2.40%	3.76%
	ROA	1.64%	1.72%	1.34%	1.26%	0.77%	0.34%	0.72%	1.31%	1.65%	2.01%	-0.24%	2.78%
Mahindra & Mahindra Financial Services Ltd. **	**Δ Sales**	27.17%	12.75%	5.74%	5.63%	7.18%	**31.78%**	16.29%	2.65%	-7.59%	13.76%	-9.35%	30.66%
	Δ Expenses	36.43%	20.07%	12.37%	15.42%	-9.51%	26.44%	38.49%	13.40%	-17.16%	-0.70%	-30.85%	58.26%
	PE Ratio	18.31	19.29	21.92	42.68	29.44	17.36	10.31	31.79	17.30	13.81	1.94	42.93
	ROE	17.41%	14.67%	11.04%	6.17%	11.18%	14.27%	7.97%	2.27%	6.32%	11.61%	-3.58%	23.91%
	ROCE	3.92%	17.78%	2.76%	1.38%	12.80%	14.79%	14.83%	11.59%	11.52%	7.92%	-9.14%	28.35%
	ROA	2.80%	2.37%	1.69%	0.87%	2.03%	2.32%	1.22%	0.43%	1.31%	2.06%	-0.28%	3.77%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

income on the back of NPAs and write-offs ("ICICI Bank Annual Report 2017-2018," n.d.). In 2023, ICICI Bank's revenues increased by 23.04 percent. This value was more than the upper outlier value of 20.28 percent. This increase was attributed to an over 30 percent increase in interest income during the FY ("ICICI Bank Annual Report 2022-2023," n.d.).

For Mahindra & Mahindra Financial Services Ltd, the increase in revenues of 31.78 percent in 2019 exceeded the upper outlier value for an increase in revenues of 30.66 percent. The company attributed this primarily to new loan growth in rural and semi-urban areas ("Mahindra Finance Annual Report 2018-2019," n.d.).

Of the 10 deviant financial values studied in this section, there were no deviations which occurred due to the companies implementing ESG attributes.

3.7.21 The Logistics Industry

The Logistics industry includes any organization which is involved in offering transportation and warehousing services to other organizations ("What is Logistics? | Definition from TechTarget," n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.21 below gives the financial data for 10 years of the selected companies in this industry segment.

For Blue Dart Express Ltd, the PE ratio in 2020 was -124.50. This value was below the lower limit bound of -21.46. Blue Dart reported a net loss in 2020 on account of expenses incurred towards exceptional items like organizational restructuring ("Blue Dart Express Ltd. Annual Report 2019-2020," n.d.). In 2022, Blue Dart's revenues grew by 34.78 percent. This exceeded the upper limit value of 32.88 percent. That year, the

Table 3.7.21 – Financial Data for 10 years of Selected Companies in the Logistics Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Blue Dart Express Ltd. **	**Δ Sales**	-10%	16.04%	12.63%	4.89%	3.87%	13.16%	-0.10%	3.52%	**34.78%**	17.70%	-13.96%	32.88%
	Δ Expenses	-7.54%	17.36%	9.20%	8.68%	4.41%	17.44%	3.54%	-0.89%	24.32%	21.19%	-16.73%	37.91%
	PE Ratio	71.93	133.76	72.85	88.19	61.72	94.89	**-124.50**	129.76	42.55	39.74	-21.46	162.02
	ROE	19.58%	42.69%	40.36%	26.75%	22.87%	13.17%	-6.56%	14.18%	39.42%	29.07%	-16.42%	68.79%
	ROCE	18.79%	19.39%	23.04%	19.53%	33.99%	19.18%	5.79%	20.98%	**50.99%**	36.44%	1.20%	49.28%
	ROA	13.36%	13.01%	16.45%	11.15%	11.58%	6.39%	-2.45%	5.24%	18.51%	15.70%	-3.72%	26.42%
Gateway Distriparks Ltd. **	**Δ Sales**	6.04%	**22.01%**	6.18%	5.64%	2.36%	9.33%	0.24%	-6.42%	**69.41%**	2.11%	-7.38%	18.10%
	Δ Expenses	0.61%	13.02%	12.06%	9.15%	-0.60%	4.72%	7.40%	-11.20%	**68.32%**	-0.09%	-16.78%	28.21%
	PE Ratio									14.82	13.22	12.42	15.61
	ROE	20.56%	29.32%	14.50%	9.42%	16.70%	29.96%	22.44%	29.16%	13.99%	13.53%	-5.93%	47.52%
	ROCE	9.47%	14.89%	10.55%	9.08%	12.25%	19.13%	11.98%	15.58%	13.39%	13.56%	5.43%	20.03%
	ROA	6.28%	11.07%	5.67%	3.27%	7.78%	12.06%	8.60%	10.97%	9.53%	9.82%	0.61%	16.72%
Redington Ltd. **	**Δ Sales**	8.13%	6.77%	5.02%	24.68%	-3.14%	10.46%	12.40%	19.92%	20.69%	30.38%	-12.96%	40.56%
	Δ Expenses	8.32%	6.67%	5.07%	25.03%	-2.94%	10.95%	10.17%	21.45%	18.27%	31.00%	-13.27%	41.02%
	PE Ratio	14.35	13.57	10.82	9.48	12.20	7.86	5.18	9.80	8.85	9.35	4.66	16.17
	ROE	0.17%	13.37%	13.12%	12.94%	10.88%	9.48%	27.17%	12.73%	36.68%	34.50%	-7.22%	42.29%
	ROCE	18.79%	13.30%	13.06%	12.88%	21.73%	21.40%	39.59%	24.20%	42.74%	42.97%	-16.93%	67.35%
	ROA	7.91%	6.00%	4.83%	4.59%	4.13%	2.92%	8.56%	5.00%	11.88%	10.96%	-0.97%	14.02%

Transport Corporation of India Ltd. **	**Δ Sales**	3.90%	8.66%	2.76%	-19.74%	20.87%	17.39%	-1.68%	-2.14%	18.03%	18.97%	-28.24%	45.54%
	Δ Expenses	3.69%	8.09%	2.37%	-19.67%	19.24%	17.33%	-1.44%	-3.05%	13.62%	19.60%	-25.83%	41.74%
	PE Ratio	9.74	14.45	14.64	20.16	16.82	17.25	10.14	13.42	15.99	15.33	9.28	21.01
	ROE	14.02%	13.39%	17.17%	12.09%	15.32%	15.24%	13.30%	12.47%	20.36%	19.35%	8.25%	21.79%
	ROCE	11.81%	11.11%	13.34%	9.21%	11.86%	18.50%	16.34%	15.95%	22.54%	21.16%	2.62%	27.17%
	ROA	6.83%	7.16%	8.51%	6.20%	8.12%	8.39%	8.03%	8.49%	**16.38%**	**15.92%**	5.69%	10.20%
VRL Logistics Ltd. *	**Δ Sales**	12.65%	11.99%	2.97%	4.68%	6.61%	9.74%	0.43%	**-16.79%**	**35.78%**	10.65%	-8.98%	24.03%
	Δ Expenses	13.73%	8.60%	3.97%	9.14%	6.57%	10.50%	-2.65%	**-16.55%**	**31.24%**	13.02%	-7.04%	24.05%
	PE Ratio			32.27	40.41	37.56	27.82	15.47	45.46	27.26	17.28	4.51	58.53
	ROE	18.61%	25.61%	20.28%	13.02%	15.60%	14.23%	14.61%	7.55%	24.57%	33.12%	0.56%	37.26%
	ROCE	16.00%	24.51%	24.17%	17.30%	21.63%	20.78%	15.25%	9.68%	23.05%	28.71%	4.98%	35.23%
	ROA	21.35%	29.09%	28.84%	24.48%	27.23%	25.04%	24.75%	20.70%	29.39%	21.23%	12.67%	37.90%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

ROCE ratio was 50.99 percent which exceeded the upper limit value of 49.28 percent. The growth in revenues was attributed to the boom in e-commerce in India and to the post pandemic recovery. The increase in profitability and increased efficiency in working capital management contributed to the high ROCE (“Blue Dart Express Ltd. Annual Report 2021-2022,” n.d.).

For Gateway Distriparks Ltd, the increase in revenues of 22.01 percent in 2015 exceeded the upper outlier value of 18.10 percent. This is attributed to increase in the container throughputs for both its Container Freight Stations (CFS) and its Rail business (“Gateway Distriparks Ltd. Annual Report 2014-2015,” n.d.). The company saw revenues increase by 69.41 percent and expenses increase by 68.32 percent. Both these increases exceeded the upper limits for an increase in sales of 18.10 percent and an increase in expenses of 28.21 percent. Gateway Distriparks Ltd and Gateway East India Private Limited were amalgamated with Gateway Rail Freight Limited in December 2021 and the name of the company was changed from Gateway Rail Freight Limited to Gateway Distriparks Limited (GDL). This amalgamation along with robust performance of affiliate Snowman Logistics resulted in a consolidated increase in revenues and expenses (“Gateway Distriparks Ltd. Annual Report 2021-2022,” n.d.).

Redington Ltd did not have any financial value which deviated beyond the statistically significant upper and lower limits for the 10-year period considered in this study.

For Transport Corporation of India Ltd, the ROA ratios in 2022 and 2023 were 16.38 percent and 15.92 percent respectively. These ratios exceeded the upper limit value of 10.20 percent for the ROA ratio. The high ROA in 2022 was due to increased profitability and effective asset utilization (“Transport Corporation of India Annual Report 2021-2022,” n.d.). Increase in profitability and effective asset utilization continued into FY 2022-23 and this resulted in the high ROA albeit slightly less than the previous FY (“Transport Corporation of India Annual Report 2022-2023,” n.d.).

For VRL Logistics Ltd, the decline in revenues and expenses were 16.79 percent and 16.55 percent respectively during the FY 2020-21. The decline in revenues and expenses exceeded the statistically significant decline in revenues of 8.98 percent and the statistically significant decline in expenses of 7.04 percent. This decline was due to an over 60 percent decline in the company’s passenger travel segment and an over 14 percent decline in its goods transport segment given the lockdowns due to Covid19 (“VRL Logistics Annual Report 2020-2021,” n.d.). During the FY 2021-22, VRL Logistics’s revenues increased by 35.78 percent and expenses increased by 31.24 percent. The increase in revenues was more than the upper limit of 24.03 percent. The increase in expenses was also more than the upper limit of 24.05 percent. Post pandemic business recovery was the primary reason for the high revenue and expenses. Revenues also increased due to the sale of the company’s power generation segment. The company opened 91 new branches during the FY. This also contributed to the increase in expenses (“VRL Logistics Annual Report 2021-2022 ,” n.d.).

Out of the 12 deviations in financial values studied for the 5 companies in the Logistics industry, there were no deviations which resulted from a company taking up some ESG related initiatives.

3.7.22 The Media Industry

The Media industry includes any organization which is involved in generating and distributing audio, video, and text content over various platforms like print and television (“What is Media Industry | IGI Global,” n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings.

The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.22 below gives the financial data for 10 years of the selected companies in this industry segment.

For DB Corp Ltd, the decline in expenses in 2020 was 8.59 percent. This decline was more than the limit for decline in expenses which was 7.08 percent. The company cited a decline in newsprint prices as the major reason for the decline in expenses. The other reasons were a decrease in employee costs, and the automation and upgrading of assets which reduced operating expenses (“DB Corp Annual Report 2019-2020,” n.d.). In 2021, there were significant drops in revenues and expenses. Revenues dropped by 31.93 percent (decline limit of 16.72 percent) and expenses dropped by 28.91 percent. The decline in sales and expenses were primarily driven by the impact of the pandemic (“DB Corp Annual Report 2020-2021,” n.d.).

For Jagran Prakashan Ltd, there was a decline in revenues and expenses of 36.06 percent and 37.08 percent respectively in 2021. The limit for a decline in revenues was 13.64 percent and the limit for a decline in expenses was 12.21 percent. The primary contributor to the decline was the Covid19 pandemic. In addition to this, cost cutting measures implemented by the company like decreasing outdoor and event businesses, and increasing the focus on digital expansion, also contributed to the decline in expenses (“Jagran Prakashan Annual Report 2020-2021,” n.d.). In 2023, the expenses for the company increased by 24.33 percent. This was more than the upper limit of 22.36 percent for an increase in expenses. The increase in expenses were primarily due to operational and direct expenses associated with an increase in sales of 13.78 percent (“Jagran Prakashan Annual Report 2022-2023,” n.d.).

None of the financial values recorded or calculated for Network 18 Media & Investments Ltd fell beyond the upper and lower bound values calculated.

Table 3.7.22 – Financial Data for 10 years of Selected Companies in the Media Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
DB Corp Ltd. **	**Δ Sales**	17%	8.22%	2.17%	9.42%	3.42%	5.40%	-9.81%	**-31.93%**	17.49%	21.15%	-16.72%	34.49%
	Δ Expenses	13.37%	7.95%	4.40%	6.03%	9.19%	10.84%	**-8.59%**	**-28.91%**	18.75%	21.71%	-7.08%	24.62%
	PE Ratio	18.50	21.26	19.52	18.71	17.69	11.94	5.07	11.12	10.57	10.27	-1.21	30.58
	ROE	26.76%	24.63%	22.26%	23.59%	16.77%	14.95%	16.32%	7.73%	7.54%	8.61%	-9.40%	42.85%
	ROCE	22.85%	21.74%	19.97%	33.21%	23.86%	21.45%	19.36%	9.82%	9.96%	11.30%	-0.57%	36.46%
	ROA	17.34%	16.66%	15.00%	18.06%	13.29%	11.41%	11.03%	5.69%	5.60%	6.50%	-5.29%	29.16%
Jagran Prakashan Ltd. *	**Δ Sales**	12.54%	4.59%	5.54%	6.27%	0.21%	3.85%	-8.66%	**-36.06%**	23.65%	13.78%	-13.64%	25.74%
	Δ Expenses	9.09%	0.25%	2.28%	6.53%	4.71%	9.50%	-8.87%	**-37.08%**	18.77%	**24.33%**	-12.21%	22.36%
	PE Ratio	14.90	13.67	14.94	18.06	17.95	14.33	4.68	18.39	7.70	9.57	0.70	27.10
	ROE	23.44%	27.11%	21.51%	16.13%	14.70%	13.89%	14.25%	4.45%	10.41%	11.44%	-0.12%	32.34%
	ROCE	22.00%	22.00%	24.00%	26.00%	23.00%	21.00%	18.00%	11.00%	18.00%	16.00%	10.88%	29.88%
	ROA	19.03%	19.81%	22.16%	19.91%	19.62%	17.24%	14.73%	7.69%	11.45%	8.58%	1.02%	31.01%
Network 18 Media & Investments Ltd. **	**Δ Sales**	-44.97%	-43.33%	-11.99%	7.52%	130.23%	-75.61%	97.61%	40.07%	38.03%	9.93%	-148.09%	152.15%
	Δ Expenses	-37.89%	-33.92%	8.24%	19.99%	30.66%	27.48%	-1.64%	-20.84%	2.24%	42.82%	-78.51%	88.07%
	PE Ratio	-97.21	-4.94	47.88	-15.92	-40.70	-12.27	-8.12	118.05	42.95	-67.40	-132.74	129.21
	ROE	-2.20%	-25.32%	-3.46%	-4.67%	-3.13%	-37.29%	-40.16%	-12.79%	-9.55%	-19.01%	-53.71%	26.21%
	ROCE	-2.17%	-0.37%	-3.46%	-4.66%	0.53%	-10.08%	-9.29%	-2.89%	0.90%	-5.32%	-11.66%	5.68%
	ROA	-1.76%	-19.47%	-2.57%	-2.99%	-1.73%	-15.40%	-12.67%	-3.60%	-2.45%	-5.06%	-23.20%	9.95%

PVR Inox Ltd. *	**Δ Sales**	89.70%	8.89%	24.28%	16.40%	12.19%	35.31%	8.06%	**-93.12%**	**436.73%**	**193.40%**	-89.87%	175.68%
	Δ Expenses	89.36%	11.70%	20.70%	18.13%	9.35%	32.37%	-9.87%	-74.99%	99.46%	127.91%	-87.83%	172.88%
	PE Ratio	36.22	22.75	36.83	73.65	48.04	42.76	23.50	-9.97	-24.02	-44.87	-66.39	105.88
	ROE	14.04%	3.12%	11.13%	9.93%	11.60%	12.69%	1.84%	**-40.79%**	**-35.63%**	-4.57%	-24.64%	33.15%
	ROCE	13.00%	9.00%	17.00%	14.00%	15.00%	18.00%	12.00%	-6.00%	-3.00%	3.00%	-10.88%	30.13%
	ROA	15.88%	14.40%	15.76%	14.38%	17.10%	15.28%	14.49%	**-4.47%**	1.44%	6.36%	-2.55%	26.55%
T.V. Today Network Ltd. *	**Δ Sales**	24.42%	22.37%	22.04%	12.15%	10.52%	2.96%	15.49%	-8.66%	18.79%	-5.58%	-19.72%	45.80%
	Δ Expenses	0.78%	23.09%	21.75%	16.47%	4.93%	5.59%	18.35%	-8.95%	17.44%	8.94%	-14.45%	37.67%
	PE Ratio	11.47	15.95	**29.20**	15.06	**24.52**	14.47	7.13	12.05	12.22	12.25	6.63	21.19
	ROE	16.18%	18.01%	13.42%	17.59%	17.98%	14.63%	15.98%	13.28%	15.68%	10.65%	8.45%	22.51%
	ROCE	25.00%	29.00%	31.00%	27.00%	31.00%	25.00%	25.00%	21.00%	22.00%	**13.00%**	14.13%	37.13%
	ROA	21.91%	22.82%	24.98%	21.26%	24.91%	18.70%	19.77%	16.48%	17.32%	12.24%	10.27%	29.99%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

For PVR Inox Ltd, sales decreased by 93.12 percent. The decline was more than the lower limit of -89.87 percent. PVR Inox's multiplex business suffered a lot due to the pandemic induced lockdowns. The negative earnings led to a drastic drop in profitability of around 47 percent resulting in negative PE, ROE, ROCE, and ROA ratios. The ROE was -40.79 percent which was below the lower limit value of -24.64 percent. The ROA was -4.47 percent which was below the lower limit value of -2.55 percent ("PVR Inox Annual Report 2020-2021," n.d.). Post the pandemic, PVR saw an over 300 percent rise in multiplex admissions, and ticket prices increased by more than 30 percent. These factors contributed to a significant increase in revenues of 436.73 percent which exceeded the upper bound value of 175.68 percent. However, due to substantial depreciation and financing costs, PVR registered negative earnings. Depreciation expenses were high due to the high investment in assets for media companies like PVR Inox. Interest expenses were high due to the debt raised to navigate the business challenges during the pandemic. This resulted in an ROE ratio of -35.63 percent. This ROE value was below the lower limit of -24.64 percent ("PVR Inox Annual Report 2021-2022," n.d.). In 2023, PVR registered another robust growth in revenues of 193.40 percent which again exceeded the upper outlier value for an increase in revenues. Indians were witness to several blockbuster movies like RRR during FY 2022-23 which kept multiplex occupancy high. This drove up revenues ("PVR Inox Annual Report 2022-2023," n.d.).

For T.V. Today Network Ltd, the PE ratio in 2016 was 29.20 and in 2018 it was 24.52. These values exceeded the upper bound for PE ratio of 21.19. In 2016, the primary cause for the high ratio was high share prices on the back of positive market sentiment given that the company registered an over 20 percent growth in revenues during the FY ("TV Today Network Annual Report 2015-2016," n.d.). In 2018 also the high PE was due to high share prices on the back of revenue growth. During FY 2017-2018, the company launched 9 channels under the "Tak" brand name becoming the fastest growing digital video brand. This gave a further boost to market sentiments ("TV Today Network Annual Report 2017-2018," n.d.). In 2023, the ROCE ratio for TV Today Network was 13 percent. This was below the lower limit value of 14.13 percent. The radio business of the company showed a decline in valuation of almost INR 100 million. Revenues also declined by over 5 percent denting the company's profitability. These things contributed to the low ROCE ("TV Today Network Annual Report 2022-2023," n.d.).

Of the 15 deviations in financial values were studied for the 5 companies in the Media industry, there were no deviations which resulted from a company taking up some ESG related initiatives.

3.7.23 The Metals Industry

The Metal industry includes any organization which is involved in the extraction, refining, alloying, and fabrication of metals ("metallurgical industry," n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.23 below gives the financial data for 10 years of the selected companies in this industry segment.

For Hindalco Industries Ltd, sales declined by 12.04 percent in 2020. This decline was more than the statistically significant decline of 7.25 percent. For Hindalco, China and Europe are major markets and these regions saw pandemic lockdowns towards the end of 2019. This had an impact on Hindalco's sales. In addition to this, the drop in aluminium prices also affected revenues ("Hindalco Industries Limited Annual Report 2019-2020," n.d.). In 2022, the increase in revenues for the company was 58.43 percent which exceeded the upper bound of 28.88 percent. While all the profitability ratios increased, the high ROCE value of 14 percent exceeded the upper bound of 9 percent. Along with post Covid recovery, the growth in revenues can be attributed to several factors like an increase in aluminum prices and the 57 percent growth in revenues recorded by the aluminum segment, commissioning of the 500,000 tonne brownfield alumina facility at Utkal, and the acquisition of two downstream facilities in India, Asoj (Copper Continuous Cast Rods) and Kuppam (Aluminium Extrusions).("Hindalco Industries Limited Annual Report 2021-2022," n.d.)

For Hindustan Zinc Ltd, in 2023, the ROE ratio of 81.29 percent, the ROCE ratio of 50.00 percent, and the ROA ratio of 49.39 percent exceeded the respective upper bound values of 37.33 percent, 45.25 percent, and 43.81 percent. Hindustan Zinc saw an increase in profitability due to an increase in metal prices and higher volumes as the company reported its highest ever mined metal production of 1,062 kt and refined metal production of 1,032 kt. Another major contributor to the increase in profitability were a number of sustainable initiatives. For example, energy saving initiatives like utilising solar energy allowed the company to save over 500 thousand gigajoules. The implementation of Zero Liquid Discharge (ZLD) plants at Dariba, Debari, and Chanderiya resulted in more than 90 percent water recovery reducing the requirement for freshwater and hence reducing costs. Similaryly, the company achieved an over 30 percent waste recycling leading to cost effective production ("Hindustan Zinc Annual Report 2022-2023," n.d.).

In 2016, JSW Steel Ltd recorded a PE ratio of -92.48. This was less than the lower limit value of 2.56. During FY 2015-2016, low sales and high coking coal costs resulted in negative earnings for the company. The negative earnings resulted in

Table 3.7.23 – Financial Data for 10 years of Selected Companies in the Metals Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Hindalco Industries Ltd. *	**Δ Sales**	7%	23.96%	-0.74%	7.78%	15.90%	6.87%	**-12.04%**	6.11%	**58.43%**	13.64%	-7.25%	28.88%
	Δ Expenses	6.57%	22.59%	-0.60%	3.91%	17.31%	10.13%	-11.87%	5.55%	46.23%	23.03%	-21.10%	46.69%
	PE Ratio	24.10	26.64	57.07	27.10	30.84	34.04	4.74	33.29	11.40	7.63	-12.58	59.83
	ROE	5.36%	2.23%	-0.62%	4.12%	11.09%	9.56%	6.46%	5.23%	17.56%	10.65%	-4.56%	19.34%
	ROCE	4.00%	5.00%	4.00%	6.00%	6.00%	4.00%	4.00%	3.00%	**14.00%**	8.00%	1.00%	9.00%
	ROA	5.82%	6.24%	5.51%	8.43%	9.32%	10.21%	8.48%	8.40%	12.56%	10.08%	2.11%	14.56%
Hindustan Zinc Ltd. *	**Δ Sales**	7.37%	8.45%	-4.11%	21.80%	27.84%	-4.37%	-12.11%	21.92%	30.10%	15.82%	-35.93%	56.58%
	Δ Expenses	8.84%	9.25%	7.97%	-4.91%	30.24%	6.48%	-7.25%	13.06%	20.60%	25.52%	-10.94%	36.51%
	PE Ratio	7.89	8.38	9.49	14.67	13.69	14.70	9.65	14.45	13.61	11.78	2.43	21.36
	ROE	18.45%	18.86%	21.87%	27.00%	25.82%	23.68%	16.88%	24.70%	28.09%	**81.29%**	8.99%	37.33%
	ROCE	20.00%	25.00%	20.00%	26.00%	33.00%	28.00%	22.00%	26.00%	37.00%	**50.00%**	9.25%	45.25%
	ROA	16.60%	15.21%	11.76%	18.80%	28.58%	25.13%	18.88%	25.53%	36.32%	**49.39%**	1.15%	43.81%
JSW Steel Ltd. *	**Δ Sales**	27.63%	1.74%	-20.35%	42.45%	27.11%	16.13%	-16.75%	10.06%	**68.00%**	10.83%	-31.69%	63.01%
	Δ Expenses	25.12%	1.93%	-18.48%	33.87%	29.44%	11.60%	-11.85%	-0.54%	68.92%	33.80%	-48.86%	81.65%
	PE Ratio		12.20	**-92.48**	12.91	11.21	9.27	8.77	14.31	8.57	**40.14**	2.56	19.12
	ROE	2.13%	8.06%	-1.77%	15.56%	22.19%	21.95%	11.01%	17.34%	30.71%	6.31%	-14.34%	41.89%
	ROCE	14.00%	12.00%	7.00%	15.00%	17.00%	22.00%	11.00%	17.00%	**27.00%**	10.00%	2.63%	25.63%
	ROA	11.81%	10.93%	7.84%	13.99%	16.22%	16.49%	8.96%	13.71%	19.91%	8.72%	0.15%	24.97%

Steel Authority of India Ltd. *	**Δ Sales**	4.94%	-1.95%	-15.14%	14.73%	29.48%	16.35%	-7.92%	12.08%	**49.72%**	0.94%	-26.98%	41.69%
	Δ Expenses	9.42%	-6.30%	1.44%	6.71%	19.16%	8.17%	-10.10%	9.59%	**45.76%**	17.41%	-16.28%	34.49%
	PE Ratio	11.12	13.68	-4.26	-9.19	-10.30	9.45	4.49	7.85	3.32	15.69	-21.97	30.31
	ROE	6.13%	4.65%	**-10.40%**	-7.44%	-0.76%	5.92%	5.11%	9.14%	**22.58%**	3.98%	-8.06%	14.56%
	ROCE	5.00%	5.00%	**-6.00%**	-3.00%	3.00%	8.00%	8.00%	11.00%	**24.00%**	6.00%	-3.25%	14.75%
	ROA	4.42%	4.68%	**-2.79%**	0.11%	4.07%	8.30%	8.07%	10.82%	**17.75%**	6.16%	-1.97%	14.36%
Tata Steel Ltd. **	**Δ Sales**	8.69%	-0.31%	-0.63%	14.98%	24.73%	20.93%	-16.68%	39.53%	53.70%	1.42%	-35.36%	59.27%
	Δ Expenses	6.71%	9.52%	-3.80%	23.13%	18.96%	12.50%	-7.32%	27.59%	28.54%	28.31%	-21.19%	55.08%
	PE Ratio	11.76	-8.66	-18.78	-12.22	4.79	5.74	19.51	12.97	3.98	14.58	-32.76	39.93
	ROE	10.48%	9.65%	6.95%	6.93%	6.77%	14.95%	9.04%	18.08%	**26.31%**	11.49%	-2.45%	24.00%
	ROCE	6.95%	6.50%	8.97%	9.89%	12.87%	17.12%	9.49%	14.89%	**27.99%**	13.66%	0.88%	22.81%
	ROA	5.77%	5.56%	3.97%	3.09%	3.33%	7.66%	4.48%	9.46%	**14.87%**	6.62%	0.86%	12.35%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

the negative PE ratio ("JSW Steel Annual Report 2015-2016," n.d.). In 2022, JSW Steel recorded a 68.00 percent increase in sales and this was more than the upper bound value of 63.01 percent. That same year the ROCE ratio was 27.00 percent which was more than the upper outlier value of 25.63 percent. The growth in revenues was driven by strong domestic and export demand. The high ROCE was primarily due to higher profitability and improved working capital management ("JSW Steel Annual Report 2021-2022," n.d.). In 2023, the PE ratio was 40.14 compared to the statistically significant high of 19.12. During FY 2022-2023, the increase in expenses of 33.80 percent outweighed the growth in revenues of 10.83 percent reducing the earnings. Geopolitical tensions like the Russia-Ukraine war increased input costs. Market sentiments remained bullish given strong domestic demand which resulted in high share prices. Hence, the PE ratio was high ("JSW Steel Annual Report 2022-2023," n.d.).

For Steel Authority of India Ltd (SAIL) the ROE ratio was -10.40 percent, the ROCE ratio was -6.00 percent, and the ROA ratio was -2.79 percent in 2016. The three ratios were below the respective lower limit values of -8.06 percent, -3.25 percent, and -1.97 percent. SAIL saw a decline in the net sales realization of saleable steel by about 20% across its five integrated steel plants. Expenses also increased due to a rise in input costs and contributions to the District Mineral Foundation and National Mineral Exploration Trust, from 2015. These factors resulted in negative profitability which resulted in the negative ROE, ROCE, and ROA values ("SAIL Annual Report 2015-2016," n.d.). In 2022, SAIL recorded an increase in sales of 49.72 percent, an increase in expenses of 45.76 percent, an ROE ratio of 22.58 percent, an ROCE ratio of 24 percent, and an ROA ratio of 17.75 percent. The five values were more than the respective upper limit values of 41.69 percent, 34.49 percent, 14.56 percent, 14.75 percent, and 14.36 percent. The growth in revenues was due to increased production and sales realization.

The increase in expenses was due to high input and financing costs. Increase in profitability, operational efficiency like improved capacity utilization, a reduction in debt, and dividend distribution resulted in high ROE, ROCE, and ROA (“SAIL Annual Report 2021-2022,” n.d.).

For Tata Steel Ltd the ROE ratio was 26.31 percent, the ROCE ratio was 27.99 percent, and the ROA ratio was 14.87 percent in 2022. The three ratios were above the respective upper limit values of 24 percent, 22.81 percent, and 12.35 percent. These high ratios were due to increased profitability resulting from a revenue growth of 53.7 percent, reduction in debt, and strategic initiatives like amalgamation of Bamnipal Steel Limited and Tata Steel BSL Limited into Tata Steel (“TATA Steel Annual Report 2021-2022,” n.d.).

A total of 21 deviations were studied for the 5 companies selected under the Metal Industry. Three of these deviations for Hindustan Zinc could be partially attributed to sustainability initiatives. Sustainability initiatives fall directly under ESG factors.

3.7.24 The Oil and Gas Industry

The Oil and Gas industry includes any organization which is involved in the exploration, extraction, and refining of crude oil and natural gas (“The Oil & Gas Industry - Overview, Prices, Streams,” n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.24 below gives the financial data for 10 years of the selected companies in this industry segment.

All the financial values recorded or computed for GAIL (India) Ltd from FY 2013-14 till FY 2022-23 were with the statistically significant lower and upper limit values.

Gujarat State Petronet Ltd (GSPL) saw huge increases in expenses in 2019 and 2020 which were beyond the upper limit value for an increase in expenses of 81.48 percent. In 2019, the increase in expenses was 81.52 percent and in 2020 it was 136.23 percent. The increase in expenses in 2019 were due increases in gas transmissions costs, financing costs, and employee benefit costs ("Gujarat State Petronet Annual Report 2018-2019," n.d.). The factors which contributed towards the rise in expenses in FY 2018-19 also contributed towards the increase in expenses in FY 2019-20 ("Gujarat State Petronet Annual Report 2019-2020," n.d.).

Indraprastha Gas Ltd saw significant increase in revenues and expenses in 2023 which exceeded the upper bound value for an increase in revenues of 61.17 percent and the upper bound value for an increase in expenses of 74.90 percent. The growth in revenues was 83.48 percent and the rise in costs was 108.16 percent. The significant increase in sales was driven by high gas prices, increased sales volumes due to overall economic conditions and expansion of CNG stations, and favourable government policies promoting clean energy. The rise in expenses was primarily due to high input cost of gas, operational and expansion related expenses, increase in excise duty, costs involved in regulatory compliances and high depreciation ("Indraprastha Gas Ltd. Annual Report 2022-2023," n.d.).

For Mahanagar Gas Ltd (MGL), the increase in revenues and expenses in 2022 were 65.40 percent and 116.31 percent respectively. The increase in revenues and expenses in 2023 were 76.94 percent and 94.06 percent respectively. These values

Table 3.7.24 – Financial Data for 10 years of Selected Companies in the Oil and Gas Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
GAIL (India) Ltd. *	**Δ Sales**	21%	-1.32%	-8.61%	-6.91%	11.45%	40.00%	-4.32%	-21.08%	61.51%	57.43%	-68.52%	97.51%
	Δ Expenses	23.63%	2.44%	-8.63%	-11.99%	10.23%	42.51%	-3.28%	-20.73%	54.75%	76.83%	-74.92%	105.42%
	PE Ratio	9.97	15.57	23.42	18.93	15.44	11.98	3.66	9.80	5.64	12.31	1.31	24.07
	ROE	14.75%	9.29%	5.13%	8.57%	11.51%	14.23%	19.12%	11.54%	19.12%	8.65%	0.10%	23.33%
	ROCE	18.00%	12.00%	9.00%	14.00%	17.00%	22.00%	17.00%	13.00%	24.00%	10.00%	4.00%	26.00%
	ROA	11.95%	8.08%	7.68%	10.33%	12.72%	14.52%	12.04%	8.94%	15.70%	6.95%	1.92%	18.92%
Gujarat State Petronet Ltd. *	**Δ Sales**	-10.40%	1.33%	-6.85%	3.63%	29.57%	40.92%	25.89%	-12.02%	-2.84%	-12.77%	-54.28%	65.09%
	Δ Expenses	20.79%	11.48%	-7.35%	10.32%	32.37%	**81.52%**	**136.23%**	-22.43%	1.31%	-18.87%	-57.19%	81.48%
	PE Ratio	9.38	14.36	17.16	16.42	14.41	10.77	5.63	9.60	8.92	9.11	1.34	22.24
	ROE	12.28%	12.87%	11.67%	12.25%	30.53%	30.30%	35.40%	25.14%	20.69%	17.37%	-12.45%	53.89%
	ROCE	17.00%	17.00%	15.00%	16.00%	16.00%	18.00%	18.00%	16.00%	15.00%	14.00%	12.63%	19.63%
	ROA	16.52%	15.82%	14.83%	13.90%	17.09%	20.38%	24.10%	25.23%	22.89%	21.25%	6.26%	32.20%
Indraprastha Gas Ltd. *	**Δ Sales**	16.24%	-5.95%	0.13%	3.50%	18.89%	27.11%	12.50%	-23.82%	56.05%	**83.48%**	-35.15%	61.17%
	Δ Expenses	20.27%	-7.78%	0.80%	-2.05%	19.63%	32.12%	9.83%	-30.37%	68.76%	**108.16%**	-47.07%	74.90%
	PE Ratio	11.62	13.42	19.03	24.88	29.16	27.18	23.89	35.66	19.86	20.77	8.19	37.66
	ROE	20.43%	20.86%	16.95%	19.51%	19.09%	19.05%	22.45%	17.13%	18.96%	20.39%	16.82%	22.58%
	ROCE	29.00%	31.18%	27.24%	31.67%	32.12%	31.46%	30.92%	24.29%	27.49%	27.28%	21.24%	37.47%
	ROA	27.43%	25.80%	22.91%	23.56%	22.81%	21.15%	21.41%	17.40%	18.12%	17.32%	12.08%	30.19%

Mahanagar Gas Ltd. *	**Δ Sales**	24.51%	11.13%	-0.79%	-2.13%	9.79%	24.99%	6.49%	-27.58%	**65.40%**	**76.94%**	-34.74%	60.64%
	Δ Expenses	35.36%	14.91%	-2.25%	-11.42%	4.54%	31.16%	0.72%	-36.51%	**116.31%**	**94.06%**	-55.24%	88.04%
	PE Ratio				22.49	19.81	19.08	10.19	18.64	12.89	12.30	2.33	29.71
	ROE	22.92%	21.39%	17.99%	21.38%	22.81%	22.78%	26.87%	19.17%	16.59%	19.11%	13.61%	28.31%
	ROCE	35.00%	33.03%	30.02%	33.65%	36.89%	37.25%	36.55%	26.58%	23.23%	26.79%	14.76%	49.00%
	ROA	24.79%	22.61%	21.48%	24.55%	25.92%	25.73%	25.50%	20.30%	17.66%	19.63%	13.50%	32.42%
Petronet LNG Ltd. *	**Δ Sales**	19.96%	4.64%	-31.31%	-9.28%	24.30%	25.48%	-7.67%	-26.60%	65.89%	38.76%	-59.97%	76.28%
	Δ Expenses	22.75%	5.00%	-32.88%	-13.79%	23.89%	28.65%	-10.37%	-32.23%	77.81%	45.18%	-73.53%	88.05%
	PE Ratio	14.43	14.58	20.59	17.73	16.67	17.51	11.10	11.43	8.67	10.60	2.02	26.47
	ROE	14.28%	15.51%	13.81%	21.07%	21.38%	21.41%	24.63%	25.32%	24.97%	21.69%	6.42%	34.38%
	ROCE	16.00%	15.41%	16.37%	26.30%	29.96%	30.33%	27.62%	28.74%	29.79%	26.55%	2.84%	45.54%
	ROA	12.58%	12.94%	12.77%	18.75%	21.17%	21.84%	21.34%	24.83%	24.87%	21.66%	3.28%	32.90%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

exceeded the upper limit for an increase in revenues of 60.64 percent and the upper limit for an increase in expenses of 88.04 percent. In 2019, MGL added over 2 million domestic households as its customers and added 24 new CNG stations. This was the major contributor to the growth in revenues. Expenses during the same time increased due to high input cost of gas and spendings towards infrastructure expansion (“Mahanagar Gas Ltd. Annual Report 2021-2022,” n.d.). The factors which contributed towards the rise in revenues and expenses in FY 2021-22 also contributed towards the increase in revenues and expenses in FY 2022-23 (“Mahanagar Gas Ltd. Annual Report 2022-2023,” n.d.).

In the case of Petronet LNG Ltd, none of the financial values were beyond the upper and lower outlier values computed for each financial metric.

In the Oil and Gas Industry, 8 financial values deviated beyond the statistically significant upper and lower values calculated for each of the 6 financial metric captured. Out of these, ESG related factors contributed towards a deviation in two financial values for Indraprastha Gas Ltd. These two values were the company’s increase in revenues and expenses in FY 2022-23.

3.7.25 The Paints Industry

The Paints industry includes any organization which is involved in the large scale production of decorative and industrial paint (“Paint Products - Paints Sector India - Equitymaster,” n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.25 below gives the financial data for 10 years of the selected companies in this industry segment.

For Asian Paints Ltd, in 2022, revenues grew by 35.79 percent and expenses increased by 44.61 percent. The growth in revenues was more than the upper outlier value of 28.64 percent. The increase in expenses was more than the upper outlier value of 34.97 percent. The increase in revenues was driven primarily by post Covid recovery, and growth in value-for-money, premium, luxury and waterproofing solutions offered by the company. The increase in expenses was primarily due to increase in input costs and other operational costs associated with an increase in revenues (“Asian Paints Annual Report 2021-2022,” n.d.).

For Akzo Nobel India Ltd, the ROA ratio of 17.95 percent in 2018 was more than the upper bound value of 14.89 percent. During the FY 2017-18, the company saw a revival in revenue growth. This increased profitability and hence directly contributed towards the high ROA. Asset utilization improved with the commissioning of new plants and the launch of innovative products. These also contributed to the high ROA (“Akzo Nobel India Limited Annual Report 2017-2018,” n.d.). Akzo Nobel India recorded a growth in revenues of 29.73 percent and an increase in revenues of 29.55 percent. These values exceeded the respective upper limits of 22.83 percent for a growth in revenues and of 28.77 percent for an increase in expenses. Post Covid recovery, and a significant growth in decorative and protective coating segments of the company were the primary driver for the increase in sales. The increase in expenses were due to high raw material costs, and high energy costs (“Asian Paints Annual Report 2021-2022,” n.d.).

No outliers among the financial values recorded for Berger Paints India Ltd were observed. All the values were within the statistically significant limits.

Table 3.7.25 – Financial Data for 10 years of Selected Companies in the Paints Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Asian Paints Ltd. **	**Δ Sales**	16%	11.74%	8.75%	0.59%	11.57%	15.45%	5.25%	7.58%	**35.79%**	19.33%	-4.58%	28.64%
	Δ Expenses	17.12%	11.36%	5.46%	-1.32%	12.53%	16.64%	4.44%	4.88%	**44.61%**	17.36%	-12.95%	34.97%
	PE Ratio	53.80	50.80	45.10	54.30	60.80	63.10	96.50	107.00	79.60	64.50	21.08	108.68
	ROE	32.46%	31.37%	32.18%	25.39%	24.29%	24.11%	28.07%	25.24%	23.48%	26.30%	15.50%	39.57%
	ROCE	29.99%	29.39%	30.14%	35.75%	35.25%	33.01%	33.91%	31.99%	30.27%	33.43%	24.75%	39.22%
	ROA	17.49%	18.25%	19.09%	17.39%	16.35%	15.58%	19.53%	17.35%	15.74%	18.19%	14.15%	20.69%
Akzo Nobel India Ltd. **	**Δ Sales**	4.41%	4.74%	7.25%	-5.71%	5.41%	7.15%	-8.82%	-9.44%	**29.73%**	20.75%	-18.78%	22.83%
	Δ Expenses	8.62%	2.14%	7.34%	-7.57%	7.84%	6.60%	-10.38%	-8.63%	**29.55%**	20.20%	-25.49%	28.77%
	PE Ratio	28.04	35.11	29.74	36.15	20.86	38.88	42.42	50.32	29.94	31.24	17.18	50.81
	ROE	17.74%	20.28%	27.78%	24.51%	31.07%	18.60%	19.20%	16.13%	23.05%	25.49%	9.01%	34.99%
	ROCE	15.95%	18.49%	36.10%	29.60%	20.89%	26.33%	24.51%	20.06%	26.95%	31.85%	7.26%	41.94%
	ROA	7.36%	10.35%	10.01%	13.11%	**17.95%**	10.06%	10.20%	8.20%	11.19%	12.23%	7.10%	14.89%
Berger Paints India Ltd. **	**Δ Sales**	11.80%	12.45%	8.50%	2.55%	11.62%	16.75%	4.91%	4.02%	28.42%	22.34%	-8.99%	30.47%
	Δ Expenses	11.80%	11.56%	5.39%	1.07%	11.98%	18.01%	1.83%	4.19%	32.18%	24.21%	-13.53%	34.52%
	PE Ratio	61.30	68.60	59.00	68.10	78.50	87.50	86.00	104.00	72.20	75.50	44.38	107.98
	ROE	20.71%	20.59%	23.50%	23.21%	20.14%	18.50%	26.03%	20.75%	19.92%	19.28%	16.05%	26.53%
	ROCE	19.95%	19.84%	22.72%	30.94%	30.67%	30.26%	32.75%	27.24%	25.49%	25.27%	12.54%	41.38%
	ROA	10.84%	11.51%	14.13%	14.38%	12.32%	11.44%	16.09%	12.68%	11.31%	11.19%	7.71%	17.41%

Indigo Paints Ltd. **	**Δ Sales**					42.70%	29.69%	16.60%	16.05%	26.13%	18.16%	-0.73%	46.52%
	Δ Expenses					33.39%	22.54%	11.08%	12.53%	27.59%	15.57%	-6.27%	45.89%
	PE Ratio								160.96	90.94	36.38	-29.78	219.39
	ROE					2.57%	20.80%	26.74%	12.57%	12.93%	16.99%	-9.42%	35.88%
	ROCE					5.72%	20.89%	30.84%	17.45%	17.11%	19.71%	-1.91%	33.63%
	ROA					0.91%	7.20%	11.33%	8.73%	9.13%	12.42%	-5.21%	19.49%
Kansai Nerolac Paints Ltd. **	**Δ Sales**	10.15%	12.84%	7.96%	6.28%	13.71%	12.37%	**-5.07%**	**-4.86%**	**26.50%**	18.89%	-3.48%	23.67%
	Δ Expenses	11.28%	11.00%	4.85%	0.37%	16.02%	16.77%	-5.21%	-6.60%	36.52%	18.23%	-21.16%	39.23%
	PE Ratio	30.89	42.86	45.03	40.33	52.78	52.87	39.00	61.05	67.34	42.85	23.13	70.68
	ROE	14.51%	17.01%	**38.92%**	18.03%	16.52%	13.64%	14.13%	13.01%	8.97%	10.55%	7.59%	22.47%
	ROCE	13.16%	15.62%	**36.83%**	17.42%	16.06%	20.19%	17.56%	17.27%	12.03%	13.68%	9.13%	22.57%
	ROA	9.16%	11.59%	**27.25%**	14.06%	12.69%	10.85%	11.65%	10.19%	6.93%	8.00%	4.90%	16.95%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

Indigo Paints Ltd started publishing financial statements only from FY 2017-18 in accordance with accounting standards. In the data collected for Indigo Paints Ltd from FY 2017-2018 to FY 2022-2023, no statistically significant deviations were observed.

For Kansai Nerolac Paints Ltd (KNPL), the ROE, ROCE and ROA ratios in 2016 were 38.92 percent, 36.83 percent, and 27.25 percent respectively. The three values exceeded the upper limit values of 22.47 percent for ROE, 22.57 percent for ROCE, and 16.95 percent for ROA. The company sold its factory in Perungudi, Chennai. This improved profitability and contrbuted significantly to the high ROE, ROCE, and ROA values. Effective cost management by reducing procurement and operational expenses, expansion of manufacturing capacities, and high dividend payouts also had a positive impact on ROE, ROCE, and ROA ratios ("Kansai Nerolac Paints Limited Annual Report 2015-2016," n.d.). In 2020, the company recorded a 5.07 percent decline in sales. This decline was more than the limit for a decline in sales of 3.48 percent. During the FY 20219-2020, there was an unprecedented slowdown in the automotive sector which is a major market for KNPL's industrial paints. The drop in demand for automotive paints resulted in the decline in sales ("Kansai Nerolac Paints Limited Annual Report 2019-2020," n.d.). In 2021, the sales of KNPL declined by another 4.86 percent. Covid19 induced business restrictions resulted in this decline in sales for the company ("Kansai Nerolac Paints Limited Annual Report 2020-2021," n.d.). During FY 2021-22, KNPL registered a 26.50 percent growth in revenues. This exceeded the upper limit for a growth in revenues of 23.67 percent. This growth in revenues was the outcome of robust post pandemic business recovery which saw KNPL introduce new products in the decorative and industrial segments. KNPL also expanded into business areas like adhesives, construction chemicals, and high-end wood finishes. All these contributed towards new sources of earnings for the company ("Kansai Nerolac Paints Limited Annual Report 2021-2022," n.d.).

In the Paints Industry, we analysed 11 deviations in the financial values of 5 leading companies in the sector. However, we did not find any evidence of ESG related considerations resulting in these deviations.

3.7.26 The Pharmaceuticals Industry

The Pharmaceuticals industry includes any public or private organization which is involved in the discovery and manufacture of drugs and medications ("Pharmaceutical industry | Definition, Overview, History, Characteristics, Examples, & Facts | Britannica," n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.26 below gives the financial data for 10 years of the selected companies in this industry segment.

For Abbott India Ltd there were no outliers among the financial values studied between FY 2013-14 and FY 2022-23.

In 2019, Aurobindo Pharma Ltd's expenses increased by 31.03 percent. This exceeded the upper limit of 28.56 percent. The primary reason for an increase in expenses were operational expenses to support the growth in revenues of 20.35 percent. In addition to these, significant increase in employee benefit expenses, and financing costs were also contributing factors ("Aurobindo Pharma Annual Report 2018-2019," n.d.). In 2022, Aurobindo Pharma's sales declined by 27.14 and expenses declined by 16.16 percent. The lower limit for a decline in sales for the company was 10.28 percent and the lower limit for a decline in expenses for the company was 7.06 percent. The decline in sales

Table 3.7.26 – Financial Data for 10 years of Selected Companies in the Pharmaceuticals Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Abbott India Ltd. **	**Δ Sales**	3%	0.59%	14.20%	11.02%	13.64%	11.52%	11.27%	5.30%	14.14%	8.73%	-4.28%	23.54%
	Δ Expenses	3.82%	-1.57%	13.80%	11.34%	10.73%	10.82%	8.54%	1.56%	13.08%	8.13%	-4.56%	20.68%
	PE Ratio	18.75	36.60	39.08	35.58	28.81	34.39	55.24	45.99	46.99	49.27	16.61	64.82
	ROE	25.19%	24.42%	21.35%	19.95%	23.70%	22.42%	24.38%	26.54%	28.32%	29.78%	17.55%	31.40%
	ROCE	39.00%	39.97%	37.55%	33.96%	40.61%	37.88%	35.15%	35.22%	38.38%	41.12%	29.92%	45.62%
	ROA	23.46%	22.73%	22.56%	19.24%	21.72%	20.57%	21.34%	24.00%	25.75%	26.47%	17.79%	27.51%
Aurobindo Pharma Ltd. **	**Δ Sales**	31.81%	13.59%	14.61%	4.15%	6.24%	20.35%	9.74%	20.07%	**-27.14%**	10.60%	-10.28%	36.10%
	Δ Expenses	15.91%	9.81%	15.83%	4.96%	5.86%	**31.03%**	7.62%	8.22%	**-16.16%**	13.33%	-7.06%	28.56%
	PE Ratio	12.71	22.64	21.53	17.19	13.49	19.43	8.51	9.68	14.79	15.75	3.96	27.82
	ROE	29.21%	28.29%	23.69%	20.23%	18.15%	13.47%	14.37%	19.54%	8.49%	6.86%	0.00%	36.52%
	ROCE	34.38%	33.00%	32.91%	25.92%	23.86%	19.25%	19.87%	25.69%	9.92%	9.47%	1.77%	48.80%
	ROA	0.14%	0.15%	0.13%	0.13%	0.11%	0.08%	0.10%	0.13%	0.07%	0.05%	0.02%	0.20%
Biocon Ltd. **	**Δ Sales**	13.75%	5.64%	3.52%	8.56%	-5.32%	18.02%	-27.05%	-0.53%	-11.62%	17.60%	-28.97%	37.31%
	Δ Expenses	13.87%	4.64%	4.42%	6.12%	4.07%	18.35%	**-31.98%**	1.01%	-1.87%	20.73%	-13.46%	27.17%
	PE Ratio	20.51	18.87	17.56	37.00	95.69	40.47	43.39	66.26	62.14	53.54	-28.40	113.03
	ROE	13.65%	13.98%	6.14%	7.94%	3.53%	6.92%	5.85%	3.54%	1.06%	**26.09%**	-8.04%	24.38%
	ROCE	**12.61%**	**13.04%**	5.91%	7.67%	3.45%	4.91%	5.13%	4.47%	1.69%	1.44%	-1.58%	12.52%
	ROA	10.25%	10.83%	5.19%	6.95%	3.08%	5.97%	5.30%	3.27%	0.97%	**21.86%**	-4.76%	17.94%

Cipla Ltd. *	**Δ Sales**	15.30%	7.14%	19.60%	-11.14%	5.78%	8.64%	2.30%	-10.71%	36.08%	-6.74%	-31.64%	40.80%
	Δ Expenses	22.96%	9.41%	23.30%	-9.03%	0.43%	7.34%	0.84%	-17.25%	41.71%	-5.81%	-39.99%	55.31%
	PE Ratio	42.60	30.50	46.90	42.10	31.30	23.10	29.50	29.70	32.90	25.90	14.18	55.18
	ROE	13.81%	10.93%	11.81%	8.02%	9.91%	10.18%	9.81%	13.12%	12.08%	11.97%	6.87%	15.15%
	ROCE	19.00%	15.31%	13.23%	8.28%	10.20%	11.94%	12.53%	17.73%	17.04%	17.99%	3.88%	25.77%
	ROA	16.02%	13.80%	11.78%	11.96%	12.47%	13.03%	13.69%	17.11%	16.95%	17.06%	6.44%	22.89%
Dr Reddy's Laboratories Ltd. *	**Δ Sales**	16.22%	2.91%	2.81%	-5.56%	-3.71%	13.54%	11.52%	12.65%	7.91%	17.75%	-12.89%	29.04%
	Δ Expenses	8.88%	9.47%	8.03%	**-3.89%**	1.15%	3.75%	8.17%	13.88%	15.58%	7.80%	-2.07%	16.15%
	PE Ratio	22.21	25.44	24.30	33.76	36.46	23.68	25.60	38.48	32.75	17.08	9.34	48.01
	ROE	24.96%	23.71%	16.95%	10.54%	7.53%	13.91%	12.99%	11.06%	11.36%	19.36%	-0.29%	30.18%
	ROCE	23.00%	16.00%	12.00%	11.00%	5.00%	12.00%	19.00%	15.00%	12.00%	19.00%	2.63%	27.63%
	ROA	20.44%	19.01%	17.64%	11.42%	10.52%	14.18%	10.67%	14.57%	12.67%	19.67%	1.33%	29.07%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

was mainly due to stiff competition in generic drugs, and regulatory issues, especially in the US market, a major revenue contributor. The decline in expenses was due to the decline in sales ("Aurobindo Pharma Annual Report 2021-2022," n.d.).

For Biocon Ltd, the ROCE ratio in 2014 was 12.61 percent and in 2015 was 13.04 percent. These exceeded the upper outlier value of 12.52 percent. Successful product launches like CANMAb and ALZUMAb, and a shift towards higher margin products like the Small Molecules Vertical, boosted profitability for the company. Strategic partnerships like partnering with Mylan for biosimilars improved capital use efficiency. Hence, the ROCE in 2014 was high ("Biocon Annual Report 2013-2014," n.d.). The high ROCE in 2015 was for very similar reasons. Biocon recorded an exceptional gain of over INR 1000 million from the sale of a 10% equity stake in Syngene International Ltd. This increased profitability. A new insulin manufacturing facility was commissioned in Malaysia. This improved production capabilities and cost efficiencies ("Biocon Annual Report 2014-2015," n.d.). In 2020, Biocon Ltd recorded a 31.98 percent decline in sales. This decline was more than the limit for decline at 13.46 percent. During FY 2019-20 there was a decline in sales of 27.05 percent which was only slightly less than the lower limit for a drop in sales of 28.97 percent. Operational and employee expenses declined due to this decline in sales. Along with that, there was also a decline in non-operational expenses like financing costs. Such factors contributed to the decline in sales ("Biocon Annual Report 2019-2020," n.d.). For Biocon Ltd, the ROE ratio of 26.09 percent and the ROA ratio of 21.86 percent recorded in 2023 exceeded the respective upper limit values of 24.38 percent for ROE and 17.94 percent for ROA. Acquisition like Viatris' biosimilars business, and strategic partnerships with Zentiva in Europe and Farmanguinhos in Brazil not only increased profitability but also enhanced asset quality and cost efficiency. These factors contributed towards the high ROE and ROA ratios during FY 2022-23 (“Biocon Annual Report 2022-2023,” n.d.).

For Cipla Ltd none of the financial values deviated beyond the statistically significant lower and upper values calculated for each of the 6 financial metric consdiered in this study.

For Dr Reddy's Laboratories Ltd, in 2017, expenses declined by 3.89 percent. This decline was more than the limit for decline of 2.07 percent. During FY 2016-17, the company saw a decline of 5.56 percent in sales as well. The drop in expenses was directly related to the drop in sales. Stiff competition from generic drug manufacturers drove prices down. There were delays in USFDA approvals for new products like Esomeprazole, and Imatinib. During that time, the Indian government also imposed price regulations which impacted some of Dr Reddy's products. These contributed to the drop in sales and expenses (“Dr Reddy’s Laboratories Annual Report 2016-2017,” n.d.).

There were 9 deviations in the financial values for the 5 companies studied under the Pharmaceuticals Industry. An analysis of the financial statements to identify the cause did not provide enough evidence to conclude that the contributing factor may have been related to a company’s ESG compliance.

3.7.27 The Thermal Power Industry

The Thermal Power industry includes any public or private organization which is involved in the generation of power or electricity by converting heat energy obtained by the burning of fuel, like coal, into electrical energy and establishing power grids for the distribution of the electricity generated (“Thermal Power Plant Working: Know Requirements, Components & Loss,” n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings.

The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.27 below gives the financial data for 10 years of the selected companies in this industry segment.

In 2017, for Adani Power Ltd, the ROE was -129.55 percent and the ROA was -14.49 percent. During the financial year, Adani saw a significant decline in revenues due to high interest expenses and a one time exceptional item related to the reversal of compensatory tariffs which affected the revenue recognition for the Mundra power plant. The net loss resulted in the negative ROE and ROA values (“Adani Power Annual Report 2016-2017,” n.d.). In 2022, the company's sales increased by a massive 5365.09 percent and expenses also increased by a massive 2212.15 percent. The upper outliers for an increase in sales and expenses were 129.09 percent and 129.53 percent respectively. The ROE ratio of 100.67 percent exceeded its upper limit of 22.85 percent and the ROA ratio of 7.01 percent exceeded its upper limit of 5.58 percent. Improved tariff realizations, recognition of regulatory income, and higher prior period revenues were the primary factors which resulted in the increase in sales. Expenses associates with realized prior period revenues, and high fuel and trading goods expenses contributed to the increase in expenses. Increase in profitability was the primary reason for the high ROE and ROA. The company also reduced financing costs and improved asset utilization during the financial year (“Adani Power Annual Report 2021-2022,” n.d.). In 2023 also, the ROE ratio of 69.40 percent and ROA ratio of 14.06 percent exceeded the respective upper bound values. The amalgamation of 6 susbsidiaries with the parent company improved operating efficiency, liquidity, and economies of scale resulting in the high ROE and ROA (“Adani Power Annual Report 2022-2023,” n.d.).

Table 3.7.27 – Financial Data for 10 years of Selected Companies in the Thermal Power Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Adani Power Ltd. **	**Δ Sales**	65%	-2.37%	21.39%	-13.40%	-26.02%	-59.58%	-44.78%	-69.65%	**5365.09%**	29.65%	-141.59%	129.09%
	Δ Expenses	38.25%	-0.78%	16.43%	2.94%	-26.88%	-63.47%	-39.01%	-51.87%	**2212.15%**	34.83%	-135.28%	129.53%
	PE Ratio	-48.04	-16.65	20.85	-2.49	-4.35	-18.88	-4.71	25.83	14.54	6.89	-53.10	52.06
	ROE	7.64%	-0.88%	1.06%	**-129.55%**	-0.24%	-2.46%	-18.68%	-6.17%	**100.67%**	**69.40%**	-22.10%	22.85%
	ROCE	10.35%	8.11%	10.58%	3.45%	4.03%	3.96%	4.38%	0.77%	19.21%	18.47%	-5.84%	20.34%
	ROA	1.53%	-0.18%	0.21%	**-14.49%**	-0.12%	-0.77%	-5.95%	-2.04%	**7.01%**	**14.06%**	-6.11%	5.58%
JSW Energy Ltd. *	**Δ Sales**	-9.34%	9.47%	-6.97%	-31.08%	4.23%	21.51%	-15.71%	-32.82%	25.71%	57.53%	-63.04%	67.42%
	Δ Expenses	-11.70%	12.15%	-11.96%	-15.17%	11.77%	23.02%	-20.76%	-39.01%	24.62%	**74.51%**	-66.38%	72.32%
	PE Ratio	12.88	14.49	7.88	16.35	**153.13**	17.14	6.38	18.14	28.74	26.81	-3.76	41.68
	ROE	11.49%	17.95%	14.91%	6.07%	0.70%	5.88%	9.44%	5.48%	9.93%	7.93%	-1.83%	18.85%
	ROCE	15.00%	16.00%	17.00%	7.00%	7.00%	6.00%	6.00%	4.00%	7.00%	6.00%	-4.50%	23.50%
	ROA	16.91%	18.66%	14.12%	11.71%	10.15%	11.01%	14.15%	11.11%	11.70%	6.78%	6.39%	18.79%
NLC India Ltd. **	**Δ Sales**	13.27%	-2.79%	5.84%	28.38%	-1.72%	-11.21%	13.33%	-1.83%	18.91%	33.14%	-30.78%	46.49%
	Δ Expenses	11.42%	-0.21%	10.86%	15.04%	6.94%	4.67%	2.57%	8.09%	16.55%	16.60%	-8.11%	27.49%
	PE Ratio	6.83	7.39	8.24	6.71	6.59	6.38	5.32	5.45	7.94	7.66	4.69	9.34
	ROE	10.80%	10.62%	7.78%	**19.41%**	13.86%	10.12%	11.18%	7.67%	8.95%	8.52%	4.94%	14.77%
	ROCE	8.32%	8.27%	5.70%	12.20%	12.72%	7.04%	10.88%	9.15%	10.10%	**17.83%**	2.90%	17.25%
	ROA	7.34%	7.39%	5.08%	8.61%	5.68%	3.65%	3.61%	2.76%	3.67%	3.54%	-1.34%	11.88%

NTPC Ltd. *	**Δ Sales**	9.52%	2.08%	-8.20%	11.78%	7.36%	13.85%	9.15%	1.89%	18.95%	**32.82%**	-11.51%	28.24%
	Δ Expenses	9.80%	6.83%	-12.42%	10.24%	8.53%	18.26%	0.37%	-0.49%	19.12%	**39.64%**	-19.42%	37.66%
	PE Ratio	8.67	12.12	9.84	12.77	13.27	9.70	7.18	7.06	7.85	10.04	2.73	16.93
	ROE	13.06%	12.16%	11.79%	10.96%	10.18%	12.34%	9.76%	11.64%	12.32%	11.50%	9.31%	14.06%
	ROCE	11.00%	8.00%	7.00%	9.00%	9.00%	7.00%	10.00%	9.00%	9.00%	10.00%	6.00%	12.00%
	ROA	9.86%	7.90%	8.26%	8.69%	7.96%	6.55%	8.37%	8.55%	9.71%	10.61%	5.91%	11.58%
Tata Power Company Ltd. *	**Δ Sales**	-9.78%	4.52%	-1.03%	-17.53%	6.91%	3.61%	-5.27%	-10.58%	**89.71%**	**54.76%**	-31.10%	28.76%
	Δ Expenses	-9.25%	5.07%	-8.55%	-11.88%	6.67%	5.81%	-5.98%	-6.42%	**96.66%**	**51.44%**	-29.73%	28.16%
	PE Ratio	**-66.60**	30.90	29.80	35.20	6.07	24.50	25.90	45.10	21.70	18.20	1.75	47.95
	ROE	7.26%	6.42%	8.82%	2.39%	**-24.25%**	12.46%	1.07%	5.45%	**25.57%**	23.85%	-9.44%	24.14%
	ROCE	4.15%	3.70%	11.74%	9.15%	12.25%	11.09%	10.82%	7.41%	10.44%	15.29%	2.25%	17.18%
	ROA	3.12%	3.01%	3.91%	0.97%	**-8.63%**	4.63%	0.39%	2.14%	5.90%	6.78%	-3.52%	9.23%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

For JSW Energy Ltd, the PE ratio of 153.13 in 2018 exceeded the upper limit value of 41.68. The reason for the high PE was a stable share price but a sharp decline in earnings compared to FY 2016-17. The decrease in power generation at the Vijayanagar and Ratnagiri power plants, provisions related to the advance provided to Jaiprakash Power Ventures Limited (JPVL) and increase in international coal prices contributed to the reduction in earnings ("JSW Energy Limited Annual Report 2017-2018," n.d.). During the FY 2022-23, JSW Energy recorded an increase in sales of 57.53 percent and an increase in expenses of 74.51 percent. While the increase in sales was within bounds, the increase in expenses exceeded the upper limit value of 72.32 percent. For the company, fuel costs increased by over 70 percent and financing costs increased by over 100 percent contributing to the increase in expenses ("JSW Energy Limited Annual Report 2022-2023," n.d.).

For NLC India Ltd, the ROE ratio of 19.41 percent in 2017 exceeded the upper limit bound of 14.77 percent. During FY 2016-17, NLC India recorded its highest profits since inception. This was made possible as the company managed its highest ever power generation of 21,033.10 million units (MU) from all its thermal power stations combined. Similarly, the total export of power was also at a record high of 17,719.46 MU ("NLC India Annual Report 2016-2017," n.d.). In 2022, the ROCE ratio for the company was 17.83 percent. This value was more than the upper bound value of 17.25 percent. During the financial year revenues increased by 33.14 percent, market capitalization increased by 23 percent and current ratio was at a healthy 1.85 signifying substantial liquidity. These factors contributed to the high ROCE ("NLC India Annual Report 2022-2023," n.d.).

For NTPC Ltd, the increase in revenues and increase in expenses in 2023 were 32.82 percent and 39.64 percent respectively. These increases were more than the upper bound values of 28.24 percent for an increase in sales and 37.66 percent for an increase in expenses. The increase in revenues was due to increased power generation by virtue of increased coal production in NTPC’s captive mines. Increase in operational expenses associated with increased coal production and power generation contributed to the increase in expenses (“NTPC Annual Report 2022-2023,” n.d.).

In 2014, the PE ratio for Tata Power Company Ltd was -66.60. This ratio was below the lower limit value of 1.75. During the financial year, Tata Power reported substantial net losses driven by impairment charges related to the Mundra power project, regulatory hurdles, high debt levels, and domestic and international operational challenges (“Tata Power Annual Report 2013-2014,” n.d.). In 2018, the ROE ratio was -24.25 percent. This was below the lower limit value of -9.44 percent. The same year, the ROA ratio was -8.63 percent. This value was also below the lower limit value of -3.52 percent. High impairment losses, high fuel costs, and losses due to contractual obligations contributed towards negative earnings resulting in the observed ROE and ROA ratios (“Tata Power Annual Report 2017-2018,” n.d.). During FY 2021-22, Tata Power recorded an 89.71 percent increase in sales, a 96.66 percent increase in expenses, and a ROE ratio of 25.57 percent. All of these three values exceeded the respective upper limit bounds of 28.76 percent, 28.16 percent, and 24.14 percent. The revenues from the company’s Odisha Discoms saw a substantial increase. In addition to this, power tariffs also increased contributing towards the overall revenue growth. Expenses were high due to high input costs and the company’s push towards green energy. The main reason for the high ROE was the high profitability for the reasons cited above (“Tata Power Annual Report 2021-2022,” n.d.). In FY 2022-23 Tata Power recorded a 54.76 percent increase in sales, and a 51.44 percent increase in expenses. During FY 2022-23, Tata Power continued with its focus on expanding renewable energy production and distribution efforts, improving the distribution networks, investments in new technologies like the development of a 4 GW solar cell and module manufacturing plant in Tamil Nadu, and acquisitions like that of NRSS XXXVI Transmission Limited and South East U.P. Power Transmission Company Limited, were the primary drivers behind the increase in both revenues and expenses (“Tata Power Annual Report 2022-2023,” n.d.).

Under the Thermal Power industry, we observed 22 deviations in the financial values captured for the 5 companies selected. Out of these devitaions, a total of 5 deviations can be attributed to ESG factors like the production and distribution of green energy. These 5 deviations were the increases in revenues and expenses, and a high ROE for Tata Power during FY 2021-22 and FY 2022-23.

3.7.28 The Real Estate Industry

The Real Estate industry includes any organization which covers such aspects of property like development, lease, marketing and management of residential, agricultural, commercial, and industrial properties (“All About the Real Estate Industry,” n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.28 below gives the financial data for 10 years of the selected companies in this industry segment.

For Brigade Enterprises Ltd, the ROA ratio of 1.96 percent in 2015 was below the lower limit value of 2.46 percent. The low ROA was due to a decline in profitability. Profits declined due to an increase in interest expenses, capital expenditures on work-in-progress, and provisions for losses and write-offs (“Brigade Enterprises Ltd. Annual Report 2014-2015,” n.d.). In 2021, the PE ratio of Brigade Enterprises was -126.51. This was below the lower limit for PE ratio of -1.06. The ROA ratio in the same year was 1.78

Table 3.7.28 – Financial Data for 10 years of Selected Companies in the Real Estate Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Brigade Enterprises Ltd. **	Δ Sales	16%	10.07%	29.10%	22.19%	-13.94%	40.95%	3.37%	-17.89%	40.77%	5.22%	-31.48%	62.68%
	Δ Expenses	9.29%	13.03%	21.31%	24.24%	-17.64%	40.62%	4.11%	-14.00%	33.12%	4.67%	-24.63%	52.39%
	PE Ratio	7.47	16.93	13.18	17.19	24.01	14.23	20.37	**-126.51**	**143.81**	37.58	-1.06	37.60
	ROE	7.05%	5.31%	10.13%	9.67%	7.75%	10.15%	10.25%	5.20%	8.66%	9.79%	3.00%	14.28%
	ROCE	4.80%	3.58%	5.82%	15.43%	4.75%	13.46%	13.44%	10.00%	11.32%	11.18%	-6.73%	24.69%
	ROA	3.03%	**1.96%**	3.35%	3.47%	3.13%	3.13%	3.40%	**1.78%**	3.51%	**4.21%**	2.46%	4.05%
DLF Ltd. **	Δ Sales	15.77%	6.17%	18.40%	-8.40%	-13.65%	-2.50%	31.14%	-8.93%	5.14%	11.09%	-39.20%	46.87%
	Δ Expenses	10.91%	-1.96%	25.76%	-2.51%	-9.90%	-6.20%	-12.22%	15.49%	-7.95%	-11.37%	-35.07%	33.35%
	PE Ratio	48.64	52.20	66.85	37.10	8.04	33.87	19.34	64.97	62.75	43.37	-3.46	98.25
	ROE	3.16%	5.45%	10.60%	4.05%	2.40%	3.39%	8.44%	3.88%	4.90%	8.02%	-2.29%	13.18%
	ROCE	2.13%	3.56%	6.97%	10.54%	6.21%	5.76%	9.49%	6.49%	7.76%	9.91%	1.10%	13.84%
	ROA	1.40%	2.61%	5.05%	2.08%	1.10%	1.85%	5.37%	2.68%	3.57%	6.19%	2.25%	8.84%
Godrej Properties Ltd. *	Δ Sales	55.50%	-22.14%	-27.66%	167.11%	-44.34%	157.91%	45.40%	-72.66%	158.42%	-21.59%	-264.16%	370.20%
	Δ Expenses	90.59%	-25.23%	-2.44%	96.74%	-13.12%	97.07%	26.49%	-46.59%	51.76%	-26.20%	-176.83%	235.51%
	PE Ratio	27.30	30.10	49.30	40.00	84.60	71.10	54.50	**-448.00**	81.10	50.20	-18.99	118.51
	ROE	8.89%	10.34%	8.98%	10.32%	7.18%	10.25%	5.63%	**-2.28%**	4.06%	6.17%	-0.50%	16.20%
	ROCE	8.00%	7.00%	4.00%	8.00%	3.00%	8.00%	11.00%	2.00%	6.00%	6.00%	-0.75%	13.25%
	ROA	4.60%	3.49%	2.08%	3.52%	2.61%	2.20%	2.58%	2.77%	0.31%	0.90%	4.92%	8.18%

Mahindra Lifespace Developers Ltd. **	**Δ Sales**	-0.23%	80.39%	-21.03%	25.49%	-26.02%	-0.43%	-6.15%	-73.80%	124.71%	104.93%	-143.27%	192.63%
	Δ Expenses	11.71%	32.01%	8.55%	48.93%	-29.94%	-1.67%	9.12%	-59.84%	88.31%	55.09%	-64.84%	110.43%
	PE Ratio	17.36	8.44	22.02	19.46	22.41	15.46	-5.11	**-40.77**	39.52	**53.71**	-7.98	40.49
	ROE	6.83%	**17.63%**	7.45%	3.27%	2.94%	3.34%	**-15.10%**	-3.61%	2.87%	9.37%	-3.72%	13.91%
	ROCE	4.33%	**12.09%**	5.68%	2.79%	2.93%	5.13%	0.62%	-4.55%	**-5.13%**	2.14%	-4.90%	10.83%
	ROA	3.57%	**10.44%**	4.06%	2.01%	2.12%	2.41%	**-11.30%**	**-2.56%**	1.85%	4.79%	-1.18%	7.01%
Phoenix Mills Ltd. **	**Δ Sales**	14.57%	9.98%	10.33%	-5.23%	4.39%	11.78%	-3.18%	12.28%	**-31.77%**	**44.88%**	-21.46%	32.33%
	Δ Expenses	17.46%	24.75%	0.00%	9.03%	11.31%	13.01%	4.67%	**-24.99%**	-8.16%	19.32%	-21.62%	39.13%
	PE Ratio	49.90	76.00	38.60	55.20	30.30	24.70	34.30	88.40	21.40	17.40	-15.56	95.54
	ROE	8.14%	**3.25%**	6.60%	5.49%	6.02%	6.30%	5.18%	6.90%	8.04%	5.98%	3.79%	8.64%
	ROCE	6.53%	2.43%	5.15%	8.93%	8.09%	8.24%	7.24%	7.99%	4.36%	6.58%	1.64%	11.92%
	ROA	5.82%	2.22%	4.53%	3.94%	4.42%	4.59%	3.73%	5.66%	6.46%	5.02%	1.90%	7.66%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

percent which was lower than the limit of 2.46 percent. The low values were attributed to negative earnings because of the pandemic but continued asset investment. The continued asset investment was for future growth prospects. This contributed to positive market sentiment resulting in high share prices during the FY (“Brigade Enterprises Ltd. Annual Report 2020-2021,” n.d.). The PE ratio in 2023 was 143.81. This was more than the upper limit for PE ratio of 37.60. During the FY 2021-22, Brigade Enterprises recorded an increase in revenues of 40.77 percent. This demonstrated good post pandemic recovery and resulted in increased profitability. The recovery coupled with positive market sentiments given the company's growth prospects caused an inflation in its share prices. These contributed to the high PE ratio (“Brigade Enterprises Ltd. Annual Report 2021-2022,” n.d.). In 2023, the ROA ratio for the company was 4.21 percent. This value exceeded the upper limit value of 4.05 percent. The high ROA was due to an increase in profitability but lower growth in assets compared to the growth in income. The growth in income was from the company’s leasing and hospitality segments. Brigade enterprises also benefited from exceptional items like gains from financial investments and reversal of impairment loss on investment properties (“Brigade Enterprises Ltd. Annual Report 2022-2023,” n.d.).

For DLF Ltd, none of the financial values were beyond the statistically significant upper and lower limit values computed for the 6 financial measures for the company.

In 2021, Godrej Properties Ltd recorded a PE ratio of -448.00 and an ROE ratio of -2.28 percent. Both these values were below the lower outlier value of -18.99 for the PE ratio and the lower outlier value of -0.50 percent for the ROE ratio. The second wave of the pandemic was after FY 2020-21. The recovery which the company showed in the start of 2021 revived positive market sentiments and share prices were high. Earnings were negative due to the pandemic induced business restrictions. This resulted in a high negative PE ratio. During FY 2020-21, Godrej Properties raised additional capital through a Qualified Institutional Placement (QIP). This resulted in an increase in the company's equity base. This, coupled with the net loss for the year, resulted in a low negative ROE value (“Godrej Properties Annual Report 2020-2021,” n.d.).

In 2015, the ROE, ROCE and ROA ratios for Mahindra Lifespace Developers Ltd were 17.63 percent, 12.09 percent, and 10.44 percent. These three values exceeded the upper limit bounds for 13.91 percent, 10.83 percent, and 7.01 percent. During the financial year, the company withnessed a significant increase in profitability compared to the previous year due to doubling of the residential units sold, and revenue realization in some major projects completed. This was the main reason why the ROE, ROCE and ROA ratios were high (“Mahindra Lifespace Annual Report 2014-2015,” n.d.). In 2020, the ROE ratio of -15.10 percent and the ROA of -11.30 percent were below the respective lower limit values of -3.72 percent for ROE and -1.18 percent for ROA. the company provided for a one-time aggregate impairment loss of INR 23.7 million for its investment in the joint venture entity Mahindra Home Private Limited (MHPL). This resulted in a net loss and consequently a significant decline in its net profit margin and return on net worth. Hence, the ROE and ROA ratios were high negative (“Mahindra Lifespace Annual Report 2019-2020,” n.d.). In 2020-2021, Mahindra Lifespaces’s share price recovered from the lows in FY 2019-2020. However, the pandemic restrictions resulted in negative earnings for the company. Hence, the PE ratio was a high negative and ROA also was negative although less than the previous year (“Mahindra Lifespace Annual Report 2020-2021,” n.d.). In 2022, the ROCE ratio of -5.13 percent was below the lower limit value of -4.90 percent. The company reported an exceptional gain from the reversal of a provision for an impairment loss related to the residential project Luminare in National Capital Region (NCR). The company had a high capital base on the back of asset investments.

This high capital base, combined with the fact that the exceptional gains are one-time and not recurring resulted the low ROCE (“Mahindra Lifespace Annual Report 2021-2022,” n.d.). In 2023, the PE ratio of 53.71 was above the upper limit value of 40.49. As in 2022, the profitability continued to be high for the company during FY 2022-23. Share prices continued to rally upwards given the positive market outlook resulting in the high PE ratio (“Mahindra Lifespace Annual Report 2022-2023,” n.d.).

For Phoenix Mills Ltd the ROE ratio of 3.25 percent in 2015 was slightly below the lower value of 3.79 percent. In 2015, Phoenix Mills reported a substantial drop in net profit, which fell to ₹114 crore from ₹203 crore in 2014. This decline in profitability directly impacted the ROE, as ROE is calculated by dividing net income by shareholders' equity. The decline in profitability was due to an increase in non-operating interest expenses, and increase in impairment provisions (“Phoenix Mills Limited Annual Report 2014-2015,” n.d.). In 2021, Phoenix Mills recorded a decline in expenses of 24.99 percent which was higher than the limit for decline of 21.62 percent. The reason for the decline was the pandemic induced decrease in economic activity resulting in lower employee costs and no operational expenses. The increase in revenues recorded in 2021 was due to other income from the sale of property, plant and equipment, not related to the operations (“Phoenix Mills Limited Annual Report 2020-2021,” n.d.). In 2022, the decline in sales was 31.77 percent. This exceeded the limit for a decline in sales of 21.46 percent. Phoenix Mills extended its concessions and reliefs on lease rentals to its licensees which began during the periods impacted by Covid19. There was also the absence of the other income like in the previous year. This resulted in the decline in revenues (“Phoenix Mills Limited Annual Report 2021-2022,” n.d.). The company recorded an increase in revenues of 44.88 percent in 2023. This exceeded the upper limit value of 32.33 percent for an increase in revenues. The primary reason was the increase in operational revenues attributed to operational expansions like the launch of Phoenix Mall of Asia in Bangalore and Phoenix Mall of the Millennium in Pune (“Phoenix Mills Limited Annual Report 2022-2023,” n.d.).

Of the 20 deviant financial values studied in this section, there were no deviations which occurred due to the companies implementing ESG attributes.

3.7.29 The Telecom Industry

The Telecom industry includes all organizations that are involved in providing information and communication facilities over a large geographical area. These companies create the infrastructure which allow voice and data to be sent electronically anywhere in the world (“Industries at a Glance: Telecommunications: NAICS 517 : U.S. Bureau of Labor Statistics,” n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.29 below gives the financial data for 10 years of the selected companies in this industry segment.

For Bharti Airtel Ltd, in 2018, the PE ratio was 324. This was more than the upper bound value of 236.33. The reason was that share price continued to be high even when EPS declined by more than half. Low revenues, high costs, regulatory challenges, and significant investments in infrastructure contributed to the low EPS (“Bharti Airtel Annual Report 2017-2018,” n.d.). In 2020, Bharti Airtel reported an ROE of -35.70 percent which was less than the limit of -29.10 percent. In October 2019, the Supreme Court of India upheld the definition for Adjusted Gross Revenues (AGR) as proposed by the Department of Telecommunications; (DoT). This resulted in a substantial financial

Table 3.7.29 – Financial Data for 10 years of Selected Companies in the Telecom Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Bharti Airtel Ltd. **	**Δ Sales**	8.45%	19.53%	-0.36%	3.29%	-13.71%	-3.08%	8.27%	17.95%	8.02%	21.22%	-21.98%	38.11%
	Δ Expenses	4.53%	6.75%	10.00%	8.40%	0.51%	11.69%	9.54%	6.23%	5.89%	10.12%	0.11%	15.75%
	PE Ratio	29.30	23.70	26.20	155.00	**324.00**	-8.77	-13.60	125.00	61.50	50.60	-102.88	236.33
	ROE	9.89%	16.86%	6.96%	-9.80%	0.07%	-1.90%	**-35.70%**	**-32.57%**	-4.59%	-0.11%	-29.10%	25.84%
	ROCE	8.34%	12.76%	4.94%	7.49%	3.09%	-0.12%	0.95%	4.05%	5.66%	7.80%	-3.26%	14.31%
	ROA	6.72%	10.44%	4.20%	-5.17%	0.03%	-0.83%	-12.01%	-9.07%	-1.27%	-0.02%	-15.22%	14.19%
Indus Towers Ltd. **	**Δ Sales**	8.08%	33.54%	-23.23%	25.37%	8.69%	9.91%	-15.15%	**104.98%**	**90.74%**	2.05%	-38.36%	73.42%
	Δ Expenses	6.20%	1.93%	-7.64%	-0.67%	18.56%	7.91%	-0.68%	**118.10%**	**88.91%**	29.10%	-39.75%	66.20%
	PE Ratio	33.4	38.9	22.5	27.50	19.20	14.30	14.20	11.30	20.80	22.30	-0.56	42.34
	ROE	6.14%	15.17%	7.01%	16.65%	13.61%	17.74%	12.58%	20.99%	**28.71%**	9.66%	-0.23%	28.08%
	ROCE	7.55%	14.07%	6.71%	15.87%	16.76%	22.79%	16.89%	16.61%	**25.59%**	12.25%	6.48%	23.09%
	ROA	0.05%	0.12%	0.06%	0.13%	0.12%	0.15%	0.09%	0.07%	0.13%	0.04%	0.02%	0.21%
Mahanagar Telephone Nigam Ltd. *	**Δ Sales**	-1.08%	0.18%	-8.06%	-8.13%	-17.35%	-16.19%	-22.74%	-15.10%	-17.94%	-19.44%	-32.37%	6.49%
	Δ Expenses	**-32.23%**	-3.28%	-5.36%	0.38%	-10.44%	-6.63%	-9.10%	**-58.43%**	**10.96%**	-6.13%	-19.57%	5.67%
	PE Ratio	0.29	0.16	-0.40	-0.71	-0.45	-0.21	-0.10	-0.49	-0.55	-0.40	-1.01	0.40
	ROE	155.09%	-140.93%									-288.94%	303.10%
	ROCE	-12.00%	-8.00%	-7.00%	-12.00%	-13.00%	-16.00%	-18.00%	-4.00%	-5.00%	-7.00%	-21.38%	1.63%
	ROA	-3.23%	-2.76%	-4.23%	-5.97%	-7.03%	-8.83%	-8.66%	0.56%	-2.46%	-3.83%	-12.59%	2.95%

Tata Communications Ltd. **	**Δ Sales**	0.92%	3.09%	0.20%	1.02%	10.38%	-1.69%	8.19%	9.60%	9.94%	8.22%	-11.52%	21.72%
	Δ Expenses	-4.18%	-2.01%	8.35%	6.81%	3.90%	4.90%	2.37%	2.12%	5.92%	**14.90%**	-4.42%	13.19%
	PE Ratio	122.88	212.92	122.74	16.58	-37.76	-187.89	-77.30	29.40	15.70	24.50	-210.10	285.11
	ROE	6.87%	8.07%	4.41%	7.45%	3.02%	**-5.39%**	2.53%	10.61%	11.90%	6.75%	-3.45%	14.74%
	ROCE	5.98%	7.40%	4.02%	6.81%	2.76%	4.80%	8.28%	12.03%	14.01%	12.24%	-3.90%	20.09%
	ROA	4.74%	5.74%	3.13%	5.24%	2.06%	**-3.50%**	1.54%	6.78%	7.92%	4.36%	-2.60%	10.55%
Vodafone Idea Ltd. *	**Δ Sales**	18.76%	19.48%	14.47%	-1.47%	-21.12%	32.45%	21.31%	-6.80%	-8.28%	9.67%	-42.62%	56.46%
	Δ Expenses	11.63%	14.33%	10.67%	5.49%	-12.05%	**48.47%**	-8.54%	-16.13%	-9.48%	12.46%	-41.48%	44.49%
	PE Ratio	46.08	41.20	28.90	**-153.90**	-15.77	-3.59	-0.12	-0.60	-1.10	-0.96	-39.89	58.57
	ROE	-27.43%	-30.50%	-31.08%	-28.84%	-26.52%	-11.01%	**-122.02%**	19.87%	12.89%	8.63%	-80.79%	54.43%
	ROCE	11.00%	12.00%	10.00%	4.00%	-3.00%	-7.00%	-5.00%	-5.00%	-5.00%	-4.00%	-25.25%	28.75%
	ROA	17.79%	17.86%	14.56%	10.58%	6.15%	1.79%	6.57%	8.33%	8.23%	8.08%	-2.97%	23.49%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

liability for the company, as it made additional provisions for license fees and spectrum usage charges, along with applicable interest, penalties, and interest on penalties. Hence the ROE was high negative (“Bharti Airtel Annual Report 2019-2020,” n.d.). During the FY 2022-21, the ROE ratio continued to suffer for the same reasons as in the previous financial year. The ROE of -32.57 percent was less than the limit of -29.10 percent (“Bharti Airtel Annual Report 2020-2021,” n.d.).

Indus Towers Ltd recorded increases in sales of 104.98 percent in 2021 and 90.74 percent in 2022. The increase in expenses in 2021 was 118.10 percent and the increase in expenses in 2022 was 88.91 percent. The upper bound for an increase in revenues for Indus Towers was 73.42 percent. The upper bound for an increase in expenses was 66.20 percent. The merger Indus Towers Limited with Bharti Infratel Limited into Indus Towers Limited became effective in November 2020. This merger expanded the operations and the asset base of Indus towers contributing to the high revenues and expenses during the 2020-21 financial year (“Indus Towers Annual Report 2020-2021,” n.d.). Increase in data demand from consumers increased B2C opportunities and the government’s push on communication infrastructure increased B2B opportunities. These developments resulted in the continued increase in revenues and expenses in FY 2021-22 (“Indus Towers Annual Report 2021-2022,” n.d.). During the same financial year, the ROE and ROA ratios of 28.71 percent and 25.59 percent respectively exceed the upper bound values of 28.08 percent for ROE and 23.09 percent for ROCE. An increase of over 20 percent in net profit margin was the primary contributor to the high ROE and ROCE ratios. The other contributing factors were efficient capital management and improved capital utilization.

For Mahanagar Telephone Nigam Ltd (MTNL), the decline in expenses in 2014 was 32.23 percent. This exceeded the limit for a decline in expenses of 19.57 percent.

The decline in expenses was mainly due to a reduction in employee costs ("MTNL Annual Report 2013-2014," n.d.). During the FY 2020-21, the expenses once again declined by 58.43 percent exceeding the statistically significant value for a decline in expenses of 19.57 percent. MTNL implemented the Voluntary Retirement Scheme (VRS) during FY 2019-20. This resulted in a significant drop in employee costs during FY 2020-21. Besides this, the company also reduced operating costs, financing costs, and marketing expenses ("MTNL Annual Report 2020-2021," n.d.). In 2022, MTNL recorded an increase in expenses of 10.96 percent which exceede the upper bound value of 5.67 percent. Employee costs increase significantly from INR 41.3 million to INR 55.5 million owing to higher salaries, allowances, and other benefits like provident fund contributions. In addition to this, the company incurred penal interest for delay in payments to MSME vendors, and interest on the reversal of input tax credit on GST. These were the primary reasons behind the increase in expenses ("MTNL Annual Report 2021-2022," n.d.).

For Tata Communications Ltd, the ROE and ROA ratios of -5.39 percent and -3.50 percent in 2019 exceeded the lower bounds of -3.45 percent for ROE and -2.60 percent for ROA. The negative ROE and ROA were attributed primarily to the exceptional one-time loss of INR 66.7 million. The amount primarily included the impairment of goodwill and intangibles recognized by its investee, STT Tai Seng Pte Limited ("Tata Communications Annual Report 2018-2019," n.d.). During FY 2022-23 Tata Communications registered a 14.90 percent increase in expenses which exceeded the upper bound value of 13.19 percent for an increase in expenses. The major contributing factor was the increase in employee benefit expenses to INR 155 million from INR 127 million during the previuos year. The other contributing factors were network and transmission costs, maintenance costs, and input costs associated with light and power ("Tata Communications Annual Report 2022-2023," n.d.).

In FY 2016-17, Vodafone Idea Ltd's PE ratio was -153.90. This was below the statistically significant value of -39.89. Owing to high depreciation and financing costs on account of infrastructure investment in the previous years, the company reported negative earnings during the financial year. On the other hand, the average share price remained relatively stable and high. Hence, the PE ratio was a high negative value ("Vodafone Idea Annual Report 2016-2017," n.d.). Vodafone Idea recorded an increase in expenses of 48.47 percent in FY 2018-19. This exceeded the upper bound value of 44.49 percent. Employee benefit expenses increased by over 50 percent. Depreciation expenses increased by over 70 percent. Financing costs almost doubled and operating expenses increase by around 48 percent. All these contributed to the significant increase in expenses ("Vodafone Idea Annual Report 2018-2019," n.d.). The ROE ratio in FY 2019-20 was -122.02 percent which exceeded the limit of of -80.79 percent. The primary reason was the high net loss of INR 731,315 million for the year as reported by the company. The company recorded exceptional charges amounting to INR 387,242 million which included charges towards AGR (Adjusted Gross Revenue), towards One Time Spectrum Charges (OTSC), integration and merger costs, and depreciation and impairment costs. Financing costs and operating expenses were also quite high. All these contributed to significant losses for the business ("Vodafone Idea Annual Report 2019-2020," n.d.).

A total of 18 deviations in the financial values were analysed for 5 selected companies under the Telecom Industry. None of the deviations were due to ESG related regulations and/or implementations. Two companies, Bharti Airtel and Vodafone Idea suffered due to the Supreme Court ruling on the definition of Adjusted Gross Revenue (ADR). This however had nothing to do with ESG.

3.7.30 The Textiles Industry

The Textiles industry will include any organization that is involved in the large scale production, processing and distribution of fabrics (“Textile Industry | Definition, History & Processes - Lesson | Study.com,” n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.30 below gives the financial data for 10 years of the selected companies in this industry segment.

For Arvind Ltd, the increase in sales of 25.00 percent and the increase in expenses of 22.76 percent during FY 2013-14 exceeded the upper bounds of 21.12 percent for an increase in expenses and 22.36 percent for an increase in expenses. The increase in revenues was due to the strong demand in the Denim and woven fabric business like the shirting segment. The incease in expenses was due to increase in input costs and employee benefit expenses (“Arvind Limited Annual Report 2013-2014,” n.d.). During FY 2020-21, Arvind Ltd's revenues declined by 32.31 percent which was more than the limit for decline at 7.74 percent. Similarly, expenses declined by 30.36 percent which was more than the limit for decline at 6.89 percent. The PE ratio was -103.20 which was below the limit for PE ratio at -2.66. The pandemic induced disruptions had a severe impact on the company’s business during the first half of FY 2020-21. This was the reason for the decline in revenues and expenses. However, the company's efforts in cost management coupled with a slight increase in demand with the number of lockdowns coming down during the second half of FY 2020-21 helped in minimizing losses. The share prices also held steady. Hence, the PE ratio, which is computed as share price divided by earnings per share, was a high negative (“Arvind Limited Annual Report 2020-2021,” n.d.). During FY 2021-22, Arvind Ltd recorded a 63.81 percent increase in revenues and a 57.15 percent increase in expenses. Both these values exceeded the respective upper bound values of 21.12 percent for an increase in sales and 22.36 percent for an increase in expenses. The recovery in revenue realized was due to a robust post pandemic recovery which saw demand, both domestic and international, increase by nearly 50 percent across segments. The increase in expenses was driven by higher input costs to meet the high demand (“Arvind Limited Annual Report 2021-2022,” n.d.).

For Gokaldas Exports Ltd the increase in revenues of 47.37 percent during FY 2021-22 exceeded the upper bound value of 41.51 percent. Post pandemic business recovery was the main reason for the significant increase in revenues. There was a strong demand for the company's products in the North American markets (“Gokaldas Exports Annual Report 2021-2022,” n.d.).

In the case of Himatsingka Seide Ltd, all the financial values were within the statistically significant upper and lower limits calculated for each financial measure considered in the study.

In FY 2020-21, Vardhman Textiles Ltd recorded a PE ratio of 23.13. The ratio exceeded the upper limit for this ratio at 13.18. Despite the challenges posed by the pandemic, Vardhman managed to maintain a steady financial performance recording an operating profit margin of over 10 percent. This resulted in investor confidence and high share prices (“Vardhman Textiles Annual Report 2020-2021,” n.d.). During FY 2021-22, the increase in revenues was 58.39 percent. The upper limit for an increase in revenues was 27.76 percent. Post Covid19 recovery in manufacturing and a steep increase in commodity prices resulted in the increase in revenues. The company managed around 13 percent increase in the production of yarn, around 25 percent increase in the production of grey fabric, and around 50 percent increase in the production of processed fabric.

Table 3.7.30 – Financial Data for 10 years of Selected Companies in the Textiles Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Arvind Ltd. **	**Δ Sales**	**25%**	10.14%	3.00%	10.35%	6.76%	0.68%	3.76%	**-32.31%**	**63.81%**	3.33%	-7.74%	21.12%
	Δ Expenses	**22.76%**	9.21%	4.40%	12.12%	9.03%	0.73%	4.02%	**-30.36%**	**57.15%**	4.24%	-6.89%	22.36%
	PE Ratio	4.32	6.74	7.59	10.96	10.81	10.40	5.32	**-103.20**	12.63	5.49	-2.66	18.73
	ROE	15.30%	14.64%	11.60%	0.61%	7.91%	7.08%	6.00%	3.15%	1.96%	10.49%	-7.33%	22.51%
	ROCE	9.34%	9.14%	7.11%	16.73%	12.00%	13.41%	13.20%	6.96%	15.34%	14.17%	2.01%	21.17%
	ROA	5.98%	5.67%	4.50%	0.28%	3.54%	2.84%	2.51%	1.40%	0.79%	5.40%	-3.57%	10.42%
Gokaldas Exports Ltd. **	**Δ Sales**	15.85%	-0.96%	3.11%	-17.12%	13.01%	10.85%	16.90%	-12.57%	**47.37%**	25.09%	-24.82%	41.51%
	Δ Expenses	4.54%	-0.75%	1.76%	-12.71%	10.83%	5.03%	18.98%	-13.69%	40.85%	21.66%	-25.72%	42.55%
	PE Ratio	-42.41	25.17	4.02	-10.83	-13.08	19.42	3.99	16.51	32.11	11.48	-45.85	57.42
	ROE	-5.94%	21.95%	28.50%	-27.92%	-23.74%	10.69%	14.15%	8.99%	16.44%	19.97%	-34.15%	51.03%
	ROCE	-3.75%	18.47%	28.14%	-5.54%	5.56%	26.33%	18.70%	15.12%	19.09%	23.11%	-13.28%	43.34%
	ROA	-1.18%	5.33%	8.37%	-5.81%	-3.88%	3.11%	3.44%	2.61%	9.52%	13.28%	-12.00%	19.37%
Himatsingka Seide Ltd. *	**Δ Sales**	37.82%	-3.66%	7.81%	36.79%	15.67%	7.92%	-8.25%	5.06%	69.98%	-28.19%	-50.96%	80.99%
	Δ Expenses	39.27%	-5.81%	-1.89%	39.10%	13.55%	2.76%	-4.03%	12.51%	75.05%	-23.23%	-57.80%	87.02%
	PE Ratio	10.70	17.00	21.00	20.00	10.60	9.37	-8.48	14.50	-10.40	-10.60	-34.61	46.96
	ROE	8.50%	11.86%	14.08%	17.06%	16.43%	13.85%	0.97%	-4.06%	9.58%	-4.42%	-13.89%	30.77%
	ROCE	10.00%	13.00%	17.00%	16.00%	14.00%	13.00%	10.00%	6.00%	9.00%	4.00%	2.50%	20.50%
	ROA	10.59%	10.49%	13.66%	13.16%	10.73%	10.49%	7.95%	5.72%	9.45%	4.90%	4.77%	14.25%

**Vardhman Textiles Ltd. ** **	**Δ Sales**	24.34%	11.07%	-2.23%	1.59%	2.81%	9.64%	-1.40%	-6.31%	**58.39%**	4.85%	-17.70%	27.76%
	Δ Expenses	17.41%	22.86%	-6.16%	1.47%	9.50%	5.81%	3.01%	-5.20%	38.09%	20.10%	-24.51%	45.79%
	PE Ratio	4.48	8.20	9.25	8.11	12.00	8.48	5.71	**23.13**	**1.81**	8.41	2.19	13.18
	ROE	22.94%	11.86%	15.37%	22.97%	11.73%	13.07%	9.55%	6.41%	20.08%	9.29%	-3.11%	32.11%
	ROCE	18.00%	10.00%	16.00%	15.00%	11.00%	14.00%	9.00%	7.00%	**25.00%**	11.00%	2.00%	24.00%
	ROA	18.57%	15.15%	15.66%	15.99%	10.95%	13.24%	10.02%	8.46%	20.71%	11.68%	3.98%	23.06%
**Welspun Living Ltd. ** **	**Δ Sales**	17.55%	23.86%	11.14%	14.15%	-11.89%	8.87%	-2.04%	12.54%	12.42%	-14.64%	-18.90%	33.33%
	Δ Expenses	25.31%	6.29%	7.37%	17.72%	-3.84%	9.84%	-5.83%	8.48%	18.56%	-9.74%	-26.89%	41.33%
	PE Ratio	10.98	6.62	13.50	24.66	15.15	28.56	4.28	15.05	15.18	32.16	-4.42	38.31
	ROE	2.84%	**35.60%**	**34.12%**	13.92%	12.51%	5.69%	16.91%	15.77%	11.28%	4.28%	-7.22%	30.93%
	ROCE	1.15%	17.38%	6.78%	6.78%	6.87%	11.50%	16.59%	20.15%	16.57%	6.77%	-7.93%	31.29%
	ROA	0.72%	10.56%	12.09%	4.90%	4.86%	2.26%	7.63%	8.63%	6.33%	2.54%	-4.77%	16.27%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

That same year, the PE ratio was 1.81. This was less than the statistically significant lower limit of 2.19. Earnings had almost doubled in FY 2021-22 compared to FY 2020-21 while the share prices remained steady. Thus, the PE ratio came out to be low. The ROCE value of 25.00 percent was more than the upper bound value of 24.00 percent. The contributing factors to the high ROCE were the significant increase in profitability, efficient capital utilization as evidenced from higher production, and effective cost management as evidenced from operating profit margins ("Vardhman Textiles Annual Report 2021-2022," n.d.).

For Welspun Living Ltd, the ROE ratios of 35.60 percent and 34.12 percent in FY 2014-15 and FY 2015-16 exceeded the upper bound ROE ratio of 30.93 percent. The high ROE for Welspun India in FY 2014-15 was a combination of around 24 percent revenue growth, payments of INR 3 per share as interim dividend and INR 7.50 as final dividend, optimized capital structure with a balance of debt and equity, and effective cost management strategies ("Welspun Living Annual Report 2014-2015," n.d.). In FY 2015-16, there was around 30 percent increase in profits compared to FY 2014-15. This allowed Welspun to maintain the high ROE. However, as input costs had increased, the ROE ratio was slightly less than the previous financial year ("Welspun Living Annual Report 2015-2016," n.d.).

In the Textiles Industry, we observed 14 financial values deviating from the respective upper and lower bound values. However, none of these deviations were due to ESG related factors.

3.7.31 The Tyre Industry

The Tyre industry will include any organization that is involved in the large scale production, and distribution of tyres for cars and other vehicles ("What is Tire Industry |

IGI Global," n.d.). Table 3.7 lists the five companies whose financials were studied. The companies were selected based on their Crisil ESG ratings. The rationale for selecting the specific companies was explained under section 3.5. Table 3.7.31 below gives the financial data for 10 years of the selected companies in this industry segment.

For Apollo Tyres Ltd, all the financial values were within the lower and upper bounds calculated for each of the six financial measures studied.

During FY 2015-16 Balkrishna Industries Ltd recorded a decline in revenues of 14.72 percent. This decline was more than the limit for decline at 10.59 percent. That same year, expenses also declined by 22.20 percent. This decline was also more than the limit for decline at 21.10 percent. For Balkrishna Industries European and North American markets constituted a significant protion of revenues. During the financial year, there was a significant drop in the demand for off-highway tyres. The decline in expenses was primarily due to the decline in sales along with minor factors like a drop in raw material prices ("Balkrishna Industries Annual Report 2015-2016," n.d.). During FY 2021-22 Balkrishna Industries recorded an increase of 43.57 percent in sales and an increase of 58.42 percent in expenses. The increase in sales was more than the upper limit value of 36.97 percent. The increase in expenses was more than the upper limit value of 54.03 percent. Revival in demand across the mining and agricultural markets, and export demand for the European and US markets contributed to the rise in revenues. The increase in expenses was due to increased production demands and capital expenditure like the project investment at the Bhuj plant and the enhancement of carbon black capacities ("Balkrishna Industries Annual Report 2021-2022," n.d.).

For CEAT Ltd, the increase in expenses of 30.08 percent in FY 2021-22 exceeded the upper limit for an increase in expenses of 21.26 percent. During the financial year, expenses increased due to increases in raw material costs, freight and logistics costs,

Table 3.7.31 – Financial Data for 10 years of Selected Companies in the Tyre Industry

Company	Metric	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Lower Outlier	Upper Outlier
Apollo Tyres Ltd. *	**Δ Sales**	2.35%	2.93%	-2.34%	2.02%	15.31%	19.92%	-10.41%	6.01%	24.85%	18.10%	-20.85%	40.36%
	Δ Expenses	0.03%	0.54%	-6.03%	5.78%	19.08%	20.12%	-11.09%	0.32%	36.29%	14.93%	-26.81%	44.95%
	PE Ratio	11.90	6.91	8.24	20.20	16.00	19.40	9.53	17.00	26.50	18.60	-3.49	32.82
	ROE	22.02%	19.39%	17.00%	15.08%	7.40%	6.77%	4.80%	3.06%	5.43%	8.58%	-10.36%	32.65%
	ROCE	22.00%	26.00%	31.00%	19.00%	12.00%	11.00%	7.00%	11.00%	5.00%	9.00%	-8.13%	38.88%
	ROA	20.90%	22.55%	17.32%	12.26%	8.32%	9.81%	8.44%	10.91%	9.75%	12.11%	0.34%	25.49%
Balkrishna Industries Ltd. *	**Δ Sales**	12.10%	5.62%	**-14.72%**	15.78%	19.29%	17.92%	-8.81%	20.41%	**43.57%**	18.68%	-10.59%	36.97%
	Δ Expenses	6.18%	13.39%	**-22.20%**	9.77%	28.66%	17.63%	-10.16%	12.49%	**58.42%**	28.60%	-21.10%	54.03%
	PE Ratio	9.87	13.21	13.69	18.69	28.07	24.87	15.95	27.72	28.77	35.67	-6.34	48.58
	ROE	25.04%	20.76%	16.06%	20.23%	18.02%	16.62%	19.16%	19.63%	20.70%	13.99%	11.55%	26.01%
	ROCE	19.00%	17.00%	15.00%	20.00%	22.00%	22.00%	19.00%	23.00%	23.00%	14.00%	10.75%	28.75%
	ROA	17.72%	13.68%	16.04%	19.54%	18.76%	20.16%	18.72%	22.18%	18.30%	13.83%	12.14%	23.66%
CEAT Ltd. **	**Δ Sales**	9.64%	4.56%	-1.41%	3.64%	8.27%	10.75%	-1.57%	12.19%	22.83%	20.99%	-8.06%	23.76%
	Δ Expenses	5.47%	3.67%	-5.37%	7.55%	9.86%	11.25%	0.37%	10.15%	**30.08%**	18.85%	-6.16%	21.26%
	PE Ratio	11.00	9.82	12.00	34.60	19.90	16.40	13.20	24.70	53.00	31.50	-13.95	56.05
	ROE	26.24%	18.70%	22.72%	15.72%	10.94%	10.50%	8.13%	13.07%	1.72%	6.16%	-5.13%	31.80%
	ROCE	16.69%	14.24%	16.37%	11.31%	17.16%	12.95%	9.68%	13.60%	5.50%	10.19%	2.42%	23.89%
	ROA	7.51%	8.22%	11.43%	7.98%	5.83%	4.76%	3.14%	5.23%	0.60%	2.17%	-2.93%	14.34%

Goodyear India Ltd. *	**Δ Sales**	5.82%	1.17%	10.63%	-12.63%	10.11%	14.85%	-8.70%	2.64%	**35.94%**	20.19%	-16.85%	32.19%
	Δ Expenses	2.69%	0.06%	8.98%	-14.47%	11.51%	19.44%	-7.87%	-2.17%	43.73%	20.18%	-30.21%	46.06%
	PE Ratio	9.09	14.31	9.27	15.33	19.76	21.38	15.72	15.11	19.88	20.10	6.51	27.86
	ROE	22.21%	20.38%	19.50%	18.01%	16.20%	11.77%	9.70%	16.23%	14.39%	20.28%	6.99%	27.95%
	ROCE	37.00%	34.10%	33.76%	30.12%	26.79%	19.31%	13.44%	20.91%	17.98%	25.13%	0.00%	52.56%
	ROA	16.19%	17.53%	21.24%	18.34%	15.54%	12.36%	10.39%	15.59%	12.60%	16.41%	7.47%	23.12%
JK Tyre & Industries Ltd. *	**Δ Sales**	9.61%	2.94%	-3.88%	2.63%	7.93%	17.93%	-19.93%	0.69%	30.92%	19.75%	-20.84%	37.86%
	Δ Expenses	5.52%	1.45%	-9.10%	8.43%	13.91%	15.45%	-20.92%	-2.90%	38.74%	20.62%	-27.13%	40.39%
	PE Ratio	2.77	7.23	4.09	7.97	**55.96**	12.82	6.63	8.40	13.76	14.54	-3.33	23.64
	ROE	24.25%	23.53%	26.68%	19.11%	3.37%	7.72%	6.47%	11.95%	7.37%	7.73%	-14.99%	44.87%
	ROCE	16.00%	18.00%	22.00%	13.00%	7.00%	11.00%	8.00%	12.00%	10.00%	10.00%	2.13%	23.13%
	ROA	14.42%	13.48%	15.83%	10.89%	7.00%	9.87%	8.79%	11.94%	8.83%	10.43%	3.07%	19.11%

* *Source:* (Stock Screener and Fundamental Analysis Tool for Indian Stocks - screener.in, n.d.)

** *Source:* (Business News Today: moneycontrol.com, n.d.)

and energy costs (“CEAT Annual Report 2021-2022,” n.d.).

During FY 2021-22, Goodyear India Ltd's revenues increased by 35.94 percent. This increase exceeded the upper bound for an increase in sales of 32.19 percent. Increase in market demand post the pandemic was the privary driver in the increase in revenues. In addition to this, there was significant growth in the company's agriculture segment (“Goodyear India Annual Report 2021-2022,” n.d.).

For JK Tyre & Industries Ltd, the PE ratio for FY 2017-18 was 55.96. This was more than the upper bound for PE ratio of 23.64. This was because the share price continued to be high but EPS declined from INR 14.64 to INR 1.9. For JK Tyre, there were several reasons for a decline in the earnings. The increase in raw material prices, high oil prices, disruptions in the first half of the financial year due to the implementation of the Goods and Services Tax (GST), spillover effects of demonetisation, and the ban on non-BS IV vehicles affecting tyre sales (“JK Tyre Annual Report 2017-2018,” n.d.). The ban on non-BS IV vehicles is an ESG related matter. For JK Tyre & Industries Ltd the commercial vehicle segment is a significant market. A large number of vehicles became non-operational due to BS IV non-compliance after April 2017 resulting in a decline in the tyre sales for the company.

Out of the 7 deviations observed in the financial values of the 5 companies studied under the Tyre Industry, the one deviation in the PE ratio for JK Tyre & Industries Ltd during the FY 2017-18 could be attributed to ESG factors.

3.7.32 Summary of the deviations in financial values

From section 3.7.1 to 3.7.31, we analysed the financial values under 6 financial measures of 156 companies spanning 31 industry segments over a period of 10 years from FY 2013-14 to FY 2022-23. Our purpose was to capture statistically significant deviations and investigate if these deviations were related to environmental, social, or governance (ESG) related factors. We observed a total of 447 deviations and found that only 16 of these could be attributed to ESG related factors. Table 3.7.32 summarizes our findings.

Table 3.7.32 – Summary of deviations observed

Industry	Total Deviations	ESG Related Deviations
Auto Ancillary	14	0
Auto OEM	14	1
Building Materials	8	0
Cement	12	0
Chemical	14	0
Construction EPC	13	0
Consumer Durable	14	0
Consumer Electricals	12	0
Consumer Products	17	0
Financial Services	13	0
FMCG	7	0
Healthcare	26	0
Heavy Engineering	4	0
Holding	24	0
Hotel	35	0
Industrial and Capital Goods	14	2
Insurance	8	2
Internet	21	0
IT	10	0
Lending	10	0
Logistics	12	0

Media	15	0
Metals	21	3
Oil and Gas	8	2
Paints	11	0
Pharmaceuticals	9	0
Thermal Power	22	5
Real Estate	20	0
Telecom	18	0
Textiles	14	0
Tyre	7	1
Totals	**447**	**16**

A total of 9360 financial values (156 companies multiplied by 60 financial values for each company) were analysed for statistically significant deviations. There were 447 significant deviations. 16 of these deviations were reported as being caused due to ESG implementation by the concerned company. Hence, the probability that a randomly chosen financial value will show a statistically significant deviation due to an ESG implementation by the company is 0.0017 or 0.17 percent.

3.8 Statistical Data Analysis

In this section we analysed the interaction between ESG scores, industry sectors, and financial performance measures using three different approaches. The first set of analysis was about the interaction between the overall ESG scores and a financial performance measure like ROE. We used Pearson's correlation coefficient for this. The findings are presented under section 3.8.1. The second set of analysis was on the interaction between individual E, S, and G scores and an industry sector like the

“Healthcare Industry”. Here we used the two factor ANOVA without replication approach. The findings are presented under section 3.8.2. The third set of analysis was studying the interaction between specific E, S, and G factors and the corresponding E, S, and G scores. For example, how a company’s focus on an individual “Environment” factor like “Energy and Emissions” can impact its “Environment” score. In this case we used the one-way ANOVA approach. The findings are presented under section 3.8.3. Microsoft Excel and online statistical calculators like the one available at www.danielsoper.com was used for these analyses.

CRISIL started publishing companywise ESG scores since 2021 (CRISIL Sustainability Reports Homepage, n.d.). However, given the pandemic induced disruptions for a majority of 2020 and 2021, we have used the published ESG scores of companies for 2021-2022 (“CRISIL Sustainability Yearbook, 2022,” n.d.) and 2022-2023 (“CRISIL ESG Ratings 2023,” n.d.) only.

3.8.1 Relation between ESG score and financial measures

For the puspose of analysing the relation between the ESG score and a financial measure, we considered the top two companies in each of the 31 industry sectors in our research sample. The companies were ranked on the basis of its ESG score published by CRISIL. Hence, we analysed the correlation between overall ESG scores and six financial performance measures which were Sales, Expenses, PE ratio, ROE, ROCE, and ROA for 2021-2022, 2022-2023, and 2021-2023. We also analysed the correlation between the individual E, S, and G scores of the selected companies on their financial performance. The overall correlation is presented first followed by the correlation of E, S, and G scores with the six financial performance measures - Sales, Expenses, PE ratio, ROE, ROCE, and ROA.

Table 3.8.1.1 – Correlation between ESG Scores and Financial Measures (2021 – 2022)

Financial Measures	Correlation (r)	t-value (df = 60)	t-critical	p value	Significance (α)
Sales	0.2467	1.9720	2.0003	0.0532	0.05
Expenses	0.2336	1.8606	2.0003	0.0677	0.05
PE Ratio	-0.0518	-0.4010	2.0003	0.6898	0.05
ROE	-0.0739	-0.5740	2.0003	0.5688	0.05
ROCE	-0.1446	-1.1312	2.0003	0.2626	0.05
ROA	0.1694	1.3312	2.0003	0.1882	0.05

The above table gives the correlation between the CRISIL ESG scores and the six financial performance measures we have considered in this research for the year 2021-22. Considering a two-tailed t test, we calculated the t value and corresponding p value for each of the correlation coefficients. The t and p values allowed us to test the significance of the correlation coefficients ("Testing the Significance of the Correlation Coefficient | Introduction to Statistics," n.d.). None of the correlation figures for the year 2021-22 were significant.

Table 3.8.1.2 – Correlation between ESG Scores and Financial Measures (2022 – 2023)

Financial Measures	Correlation (r)	t-value (df = 60)	t-critical	p value	Significance (α)
Sales	**0.4322**	3.7129	2.0003	0.0005	0.05
Expenses	**0.3781**	3.1640	2.0003	0.0024	0.05
PE Ratio	-0.0583	-0.4524	2.0003	0.6527	0.05
ROE	**0.2773**	2.2360	2.0003	0.0291	0.05
ROCE	0.2335	1.8604	2.0003	0.0677	0.05
ROA	0.0468	0.3629	2.0003	0.7180	0.05

The above table gives the correlation between the CRISIL ESG scores and the six financial performance measures we have considered in this research for the year 2022-23. The correlation values of 0.4322 between the ESG score and sales amount, 0.3781 between the ESG score and expenses, and 0.2773 between the ESG score and ROE are statistically significant.

Table 3.8.1.3 below gives the correlation between the CRISIL ESG scores and the six financial performance measures we have considered in this research for two years from 2021-2023. The correlation values of 0.3289 between the ESG score and sales amount, and 0.2948 between the ESG score and expenses are statistically significant.

Table 3.8.1.3 – Correlation between ESG Scores and Financial Measures (2021 – 2023)

Financial Measures	**Correlation (r)**	**t-value (df = 122)**	**t-critical**	**p value**	**Significance (α)**
Sales	**0.3289**	3.8470	1.9796	0.0002	0.05
Expenses	**0.2948**	3.4077	1.9796	0.0009	0.05
PE Ratio	-0.0472	-0.5208	1.9796	0.6035	0.05
ROE	0.1093	1.2142	1.9796	0.2270	0.05
ROCE	0.0687	0.7606	1.9796	0.4484	0.05
ROA	0.1070	1.1888	1.9796	0.2368	0.05

Table 3.8.1.4 through Table 3.8.1.6 below gives the correlation between the E scores and the six financial performance measures we have considered in this research for 2021-2022, 2022-2023, and 2021-2023. The correlation values of 0.4325 between the E score and sales amount, and 0.3840 between the E score and expenses in 2022-2023 were statistically significant. The correlation values of 0.2802 between the E score and sales amount, and 0.2534 between the E score and expenses from 2021 to 2023 were statistically significant. These findings were consistent with the findings for the correlation tests for overall ESG scores and fianncial performance measures like sales, expenses, ROE, ROCE, and ROA.

Table 3.8.1.4 – Correlation between E Scores and Financial Measures (2021 – 2022)

Financial Measures	**Correlation (r)**	**t-value (df = 60)**	**t-critical**	**p value**	**Significance (α)**
Sales	0.1599	1.2550	2.0003	0.2144	0.05
Expenses	0.1549	1.2148	2.0003	0.2292	0.05
PE Ratio	-0.0002	-0.0015	2.0003	0.9992	0.05
ROE	-0.1251	-0.9759	2.0003	0.3335	0.05
ROCE	-0.1293	-1.0100	2.0003	0.3166	0.05
ROA	0.1481	1.1600	2.0003	0.2506	0.05

Table 3.8.1.5 – Correlation between E Scores and Financial Measures (2022 – 2023)

Financial Measures	**Correlation (r)**	**t-value (df = 60)**	**t-critical**	**p value**	**Significance (α)**
Sales	**0.4325**	3.7156	2.0003	0.0004	0.05
Expenses	**0.3840**	3.2214	2.0003	0.0021	0.05
PE Ratio	-0.0766	-0.5951	2.0003	0.5541	0.05
ROE	0.2268	1.8038	2.0003	0.0763	0.05
ROCE	0.2031	1.6067	2.0003	0.1134	0.05
ROA	0.0201	0.1557	2.0003	0.8768	0.05

Table 3.8.1.6 – Correlation between E Scores and Financial Measures (2021 – 2023)

Financial Measures	**Correlation (r)**	**t-value (df = 122)**	**t-critical**	**p value**	**Significance (α)**
Sales	**0.2802**	3.2241	1.9796	0.0016	0.05
Expenses	**0.2534**	2.8933	1.9796	0.0045	0.05
PE Ratio	-0.0125	-0.1381	1.9796	0.8905	0.05
ROE	0.0545	0.6029	1.9796	0.5477	0.05
ROCE	0.0478	0.5286	1.9796	0.5980	0.05
ROA	0.0814	0.9021	1.9796	0.3688	0.05

Table 3.8.1.7 through Table 3.8.1.9 below gives the correlation between the S scores and the six financial performance measures we have considered in this research for 2021-2022, 2022-2023, and 2021-2023. The correlation values of 0.3661 between the S score and sales amount, and 0.3376 between the S score and expenses in 2021-2022 were statistically significant. The correlation values of 0.4437 between the S score and sales amount, 0.4160 between the S score and expenses, 0.4037 between the S score and ROE,

and 0.3307 between the S score and ROCE in 2022-2023 were statistically significant. The correlation values of 0.3790 between the S score and sales amount, 0.3540 between the S score and expenses, and 0.1847 between the S score and ROE from 2021 to 2023 were statistically significant. These findings for the correlation between S scores and financial performance measures were also consistent with the correlation test between overall ESG scores and financial performance measures

Table 3.8.1.7 – Correlation between S Scores and Financial Measures (2021 – 2022)

Financial Measures	**Correlation (r)**	**t-value (df = 60)**	**t-critical**	**p value**	**Significance (α)**
Sales	**0.3661**	3.0474	2.0003	0.0034	0.05
Expenses	**0.3376**	2.7781	2.0003	0.0073	0.05
PE Ratio	-0.2032	-1.6075	2.0003	0.1133	0.05
ROE	-0.0287	-0.2224	2.0003	0.8251	0.05
ROCE	-0.1019	-0.7934	2.0003	0.4309	0.05
ROA	0.1970	1.5565	2.0003	0.1248	0.05

Table 3.8.1.8 – Correlation between S Scores and Financial Measures (2022 – 2023)

Financial Measures	**Correlation (r)**	**t-value (df = 60)**	**t-critical**	**p value**	**Significance (α)**
Sales	**0.4437**	3.8351	2.0003	0.0003	0.05
Expenses	**0.4160**	3.5435	2.0003	0.0008	0.05
PE Ratio	-0.0488	-0.3785	2.0003	0.7068	0.05
ROE	**0.4037**	3.4179	2.0003	0.0011	0.05
ROCE	**0.3307**	2.7143	2.0003	0.0087	0.05
ROA	0.1759	1.3841	2.0003	0.1715	0.05

Table 3.8.1.9 – Correlation between S Scores and Financial Measures (2021 – 2023)

Financial Measures	**Correlation (r)**	**t-value (df = 122)**	**t-critical**	**p value**	**Significance (α)**
Sales	**0.3790**	4.5237	1.9796	0.0000	0.05
Expenses	**0.3540**	4.1808	1.9796	0.0001	0.05
PE Ratio	-0.1714	-1.9216	1.9796	0.0571	0.05
ROE	**0.1847**	2.0758	1.9796	0.0400	0.05
ROCE	0.1431	1.5970	1.9796	0.1129	0.05
ROA	0.1727	1.9366	1.9796	0.0551	0.05

Table 3.8.1.10 through Table 3.8.1.12 below gives the correlation between the G scores and the six financial performance measures we have considered in this research for 2021-2022, 2022-2023, and 2021-2023. In this case however, none of the correlation coefficients were statistically significant.

Table 3.8.1.10 – Correlation between G Scores and Financial Measures (2021 – 2022)

Financial Measures	**Correlation (r)**	**t-value (df = 60)**	**t-critical**	**p value**	**Significance (α)**
Sales	0.1401	1.0960	2.0003	0.2775	0.05
Expenses	0.1382	1.0809	2.0003	0.2841	0.05
PE Ratio	0.0507	0.3932	2.0003	0.6956	0.05
ROE	0.1066	0.8305	2.0003	0.4095	0.05
ROCE	-0.0269	-0.2084	2.0003	0.8359	0.05
ROA	0.0910	0.7078	2.0003	0.4818	0.05

Table 3.8.1.11 – Correlation between G Scores and Financial Measures (2022 – 2023)

Financial Measures	**Correlation (r)**	**t-value (df = 60)**	**t-critical**	**p value**	**Significance (α)**
Sales	0.0665	0.5162	2.0003	0.6076	0.05
Expenses	0.0310	0.2402	2.0003	0.8110	0.05
PE Ratio	0.0416	0.3225	2.0003	0.7482	0.05
ROE	0.0672	0.5217	2.0003	0.6038	0.05
ROCE	0.0404	0.3132	2.0003	0.7552	0.05
ROA	-0.0157	-0.1216	2.0003	0.9041	0.05

Table 3.8.1.12 – Correlation between G Scores and Financial Measures (2021 – 2023)

Financial Measures	**Correlation (r)**	**t-value (df = 122)**	**t-critical**	**p value**	**Significance (α)**
Sales	0.0955	1.0597	1.9796	0.2914	0.05
Expenses	0.0725	0.8029	1.9796	0.4236	0.05
PE Ratio	0.0505	0.5585	1.9796	0.5775	0.05
ROE	0.0770	0.8530	1.9796	0.3953	0.05
ROCE	0.0096	0.1060	1.9796	0.9158	0.05
ROA	0.0338	0.3735	1.9796	0.7094	0.05

In the above analysis, the correlation between overall ESG scores and sales, and overall ESG scores and expenses were statistically significant in 2022-2023 and for the combined period from 2021-2023. The correlation between overall ESG scores and ROE was significant in 2022-2023. The correlation between E scores and sales, and E scores and expenses were statistically significant in 2022-2023 and for the combined period from 2021-2023. The correlation between S scores and sales, and S scores and expenses were statistically significant for all the time periods studied. The correlation between S scores and ROE were statistically significant in 2022-2023 and for the combined period from 2021-2023. The correlation between S scores and ROCE was significant in 2022-2023. None of the correlation coefficients between G scores and financial measures were statistically significant. In general, a correlation coefficient lower than -0.5 and above +0.5 is considered statistically significant in social sciences ("The Correlation Coefficient: What It Is and What It Tells Investors," n.d.). If we considered this as our benchmark, none of the correlation coefficients, neither for the overall ESG scores nor for the individual E, S, and G scores, were statistically significant.

3.8.2 Relation between ESG scores and Industry Sectors

For the puspose of analysing the relation between ESG scores and industry sectors, the data used was the same as in the case of the correlation analysis. The statistical model used was two factor ANOVA without replication. One factor in the model was the individual Environment, Social, and Governance scores as published by CRISIL and the second factor was the 31 industry sectors in this research. Given the ESG data available, we carried out the analysis for 2021-2022, 2022-2023, and 2021-2023.

In Table 3.8.2.1, we analysed if there was a significant difference between the E, S, and G score means for the various industry sectors in 2021-2022, and if there was a significant difference in the mean E, S, and G scores in 2021-2022. The F statistic in the case of E, S, G score means for various industry sectors was 5.396 and the p value was 1.52×10^{-8} (≈ 0). The F critical value was 1.649 and the level of significance was 0.05. Given the values, the differences in mean values were statistically significant. The F statistic in the case of significant variation in E, S, G score means was 202.651 and the p value was 2.05×10^{-27} (≈ 0). The F critical value was 3.150 and the level of significance was 0.05. As the F values were more than the F critical values for the test setup, or the p values were lower than the significance level of 0.05, the differences in mean values were statistically significant.

Table 3.8.2.1 – ESG Score and Industry Sector ANOVA (2021 – 2022)

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Sector	2773.4632	30	92.4488	**5.3958**	**0.0000**	1.6491
Average E, S, and G scores	6944.1867	2	3472.0933	**202.6514**	**0.0000**	3.1504
Error	1028.0000	60	17.1333			
Total	10745.6499	92				

In Table 3.8.2.2, we analysed if there was a significant difference between the E, S, and G score means for the various industry sectors in 2022-2023, and if there was a significant difference in the mean E, S, and G scores in 2022-2023. The F statistic in the case of E, S, G score means for various industry sectors was 3.706 and the p value was 7.84×10^{-6} (≈ 0). The F critical value was 1.649 and the level of significance was 0.05. Given the values, the differences in mean values were statistically significant. The F statistic in the case of significant variation in E, S, G score means was 184.574 and the p value was 2.32×10^{-26} (≈ 0). The F critical value was 3.150 and the level of significance was 0.05. Given the values, the differences in mean values were statistically significant.

Table 3.8.2.2 – ESG Score and Industry Sector ANOVA (2022 – 2023)

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Sector	2308.5385	30	76.9513	**3.7061**	**0.0000**	1.6491
Average E, S, and G scores	7664.8009	2	3832.4004	**184.5735**	**0.0000**	3.1504
Error	1245.8125	60	20.7635			
Total	11219.1518	92				

In Table 3.8.2.3, we analysed if there was a significant difference between the E, S, and G score means for the various industry sectors in 2021-2023, and if there was a significant difference in the mean E, S, and G scores in 2021-2023. The F statistic in the case of E, S, G score means for various industry sectors was 3.963 and the p value was 5.07×10^{-11} (≈ 0). The F critical value was 1.425 and the level of significance was 0.05. Given the values, the differences in mean values were statistically significant. The F statistic in the case of significant variation in E, S, G score means was 340.5129 and the p value was 1.2×10^{-50} (≈ 0). The F critical value was 3.071 and the level of significance was 0.05. Given the values, the differences in mean values were statistically significant.

Table 3.8.2.3 – ESG Score and Industry Sector ANOVA (2021 – 2023)

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Sector	5082.0095	61	83.3116	**3.9627**	**0.0000**	1.4249
Average E, S, and G scores	14317.8740	2	7158.9370	**340.5129**	**0.0000**	3.0705
Error	2564.9260	122	21.0240			
Total	21964.8095	185				

In the above analysis, we found that the interaction between ESG scores and industry sectors, overall or combined, was statistically significant as all the F values exceeded the F critical values and all the p values were lower than the level of significance at 0.05.

3.8.3 Relation between ESG score and a specific ESG implementation

The puspose of analysing the relation between the ESG score and a specific ESG implementation is to establish biases, if any, towards specific ESG parameters whatever be the reason. A study of annual reports did not indicate company preferences towards any specific E, S, and G parameters. For example, all the companies in our sample had strived towards reducing energy consumption, ensuring proper disclosures, waste management, and the like. In order to achieve this objective, we used a completely randomized design one-way ANOVA. This is a statistical method for analysing data when there multiple comparisions but only one factor. The comparisions were on the various parameters and the factor was the E, S, or G score ("The Open Educator - 1. What is One Way/Single Factor ANOVA," n.d.).

We took the top two companies in each of our 31 industry sectors ranked on ESG scores for 2021-2022 and 2022-2023 ending up with 62 data points for the two time periods and 124 data points for the combined period. These data points were randomly distributed in equal numbers into the E, S, and G parameters which CRISIL considered while assigning ESG scores to companies. Table 3.8.3.1 lists the factors used in 2021-2022 and 2022-2023. For the combined period from 2021 to 2023, we considered the E parameters of 2021-2022 as we assumed "Energy and emissions" to include both "GHG (Green House Gas) emissions" and "Energy use". For the same period, in case of the G parameters, we considered the list of 2022-2023 as it combined three parameters in 2021-2022 into one and we assumed that combined parameters compensated better for distribution errors. The S parameters remain unchanged over the two assesment periods of 2021-2022 and 2022-2023.

Table 3.8.3.1 – E, S, and G parameters considered by CRISIL

E (Environment) Parameters	
2021-2022 *	**Energy and emissions**
	Waste generation and recycling
	Water use
	Resource use and biodiversity
2022-2023 **	**GHG emissions**
	Energy use
	Waste management
	Water management
	Resource use, green products & biodiversity
S (Social) Parameters	
2021-2022 * & 2022-2023 **	Employee and worker management
	Supply chain management
	Communities
G (Governance) Parameters	
2021-2022 *	**Board composition**
	Board independence
	Board functioning and experience
	Management track record and control
	Disclosure (quality and timeliness)
	Shareholder relations
2022-2023 **	**Board composition, independence and functioning**
	Management track record
	Shareholder relations
	Disclosures practices

* Source: (“CRISIL Sustainability Yearbook, 2022,” n.d.)

** Source: (“CRISIL’s ESG scoring methodology 2023,” n.d.)

In Table 3.8.3.2 through Table 3.8.3.4 below we analysed the difference in the E parameter means. In each case, the F values were less than the F critical value and the p values were greater than the significance level of 0.05. This indicated that the differences in the E parameter means were not statistically significant. Hence, E scores were not biased towards any of the parameters.

Table 3.8.3.2 – One-way ANOVA on E parameter means (2021 – 2022)

Groups	*Count*	*Sum*	*Average*	*Variance*
Energy and emissions	15	814	54.2667	70.2095
Waste generation and recycling	15	819	54.6000	133.5429
Water use	15	803	53.5333	46.9810
Resource use and biodiversity	15	811	54.0667	259.6381

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	8.9833	3	2.9944	0.0235	0.9951	2.7694
Within Groups	7145.2000	56	127.5929			
Total	7154.1833	59				

Table 3.8.3.3 – One-way ANOVA on E parameter means (2022 – 2023)

Groups	*Count*	*Sum*	*Average*	*Variance*
GHG emissions	12	658	54.8333	125.6061
Energy use	12	533	44.4167	57.5379
Waste management	12	613	51.0833	74.0833
Water management	12	619	51.5833	130.6288
Resource use, green products & biodiversity	12	588	49	22

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	708.5667	4	177.1417	2.1610	0.0855	2.5397
Within Groups	4508.4167	55	81.9712			
Total	5216.9833	59				

Table 3.8.3.4 – One-way ANOVA on E parameter means (2021 – 2023)

Groups	*Count*	*Sum*	*Average*	*Variance*
Energy and Emissions	31	1731	55.8387	75.8065
Waste generation and recycling	31	1754	56.5806	85.5849
Water use	31	1839	59.3226	58.1591
Resource use and biodiversity	31	1729	55.7742	80.4473

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	259.2500	3	86.4167	1.1522	0.3310	2.6802
Within Groups	8999.9355	120	74.9995			
Total	9259.1855	123				

In Table 3.8.3.5 through Table 3.8.3.7 below we analysed the difference in the S parameter means. In each case, the F values were less than the F critical value and the p values were greater than the significance level of 0.05. This indicated that the differences in the S parameter means were not statistically significant. Hence, S scores obtained by a company in our sample was independent of its focus on “Employee and worker management”, “Supply chain management”, and “Communities”.

Table 3.8.3.5 – One-way ANOVA on S parameter means (2021 – 2022)

Groups	*Count*	*Sum*	*Average*	*Variance*
Employee and worker management	20	1079	53.9500	24.0500
Supply chain management	20	1104	55.2000	28.3789
Communities	20	1170	58.5000	57.0000

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	221.0333	2	110.5167	3.0298	0.0562	3.1588
Within Groups	2079.1500	57	36.4763			
Total	2300.1833	59				

Table 3.8.3.6 – One-way ANOVA on S parameter means (2022 – 2023)

Groups	*Count*	*Sum*	*Average*	*Variance*
Employee and worker management	20	1207	60.3500	20.6605
Stakeholder management and product quality	20	1167	58.3500	12.7658
Communities	20	1199	59.9500	27.8395

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	44.8000	2	22.4000	1.0969	0.3409	3.1588
Within Groups	1164.0500	57	20.4219			
Total	1208.8500	59				

Table 3.8.3.7 – One-way ANOVA on S parameter means (2021 – 2023)

Groups	*Count*	*Sum*	*Average*	*Variance*
Employee and worker management	41	2571	62.7073	75.4622
Supply chain management	41	2593	63.2439	90.9890
Communities	41	2580	62.9268	84.1695

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	5.9675	2	2.9837	0.0357	0.9649	3.0718
Within Groups	10024.8293	120	83.5402			
Total	10030.7967	122				

In Table 3.8.3.8 through Table 3.8.3.10 below we analysed the difference in the G parameter means. In each case, the F values were less than the F critical value and the p values were greater than the significance level of 0.05. This indicated that the differences in the G parameter means were not statistically significant. Hence, G scores obtained by a company in our sample was independent of its focus on a specific G parameter.

Table 3.8.3.8 – One-way ANOVA on G parameter means (2021 – 2022)

Groups	*Count*	*Sum*	*Average*	*Variance*
Board composition	10	706	70.6000	24.7111
Board independence	10	695	69.5000	27.6111
Board functioning and experience	10	696	69.6000	25.3778
Management track record and control	10	718	71.8000	19.9556
Disclosure (quality and timeliness)	10	699	69.9000	19.6556
Shareholder relations	10	737	73.7000	8.9000

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	133.7500	5	26.7500	1.2717	0.2896	2.3861
Within Groups	1135.9000	54	21.0352			
Total	1269.6500	59				

Table 3.8.3.9 – One-way ANOVA on G parameter means (2022 – 2023)

Groups	*Count*	*Sum*	*Average*	*Variance*
Board composition, independence and functioning	15	1057	70.4667	16.5524
Management track record	15	1020	68.0000	37.0000
Shareholder relations	15	1037	69.1333	10.1238
Disclosures practices	15	1085	72.3333	26.5238

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	156.1833	3	52.0611	2.3087	0.0863	2.7694
Within Groups	1262.8000	56	22.5500			
Total	1418.9833	59				

Table 3.8.3.10 – One-way ANOVA on G parameter means (2021 – 2023)

Groups	*Count*	*Sum*	*Average*	*Variance*
Board composition, independence and functioning	31	2053	66.2258	34.5140
Management track record	31	2020	65.1613	62.0065
Shareholder relations	31	2046	66.0000	58.3333
Disclosures practices	31	2018	65.0968	43.5570

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	30.8629	3	10.2876	0.2074	0.8911	2.6802
Within Groups	5952.3226	120	49.6027			
Total	5983.1855	123				

The one-way ANOVA analysis presented in Table 3.8.3.2 through Table 3.8.3.10 showed that companies do not have specific preferences towards specifc ESG parameters.

3.9 Research Design Limitations

The reasearch was designed to answer four questions as stated under section 3.3. The research setup to answer the question if ESG implementation had a significant impact on financial performance depended on the assumption that a company will make explicit mention of how ESG implementations affected its financial bottomlines in its annual report. While the assumption is a valid one, there is no compulsion for companies to declare the impact of ESG implementations on its finances.

For the remaining three questions, i) statistically significant correlation between ESG scores and financial performance of a company, ii) relation between E, S, and G scores and Industry Sectors, and iii) relation between ESG score and a specific ESG implementation, we depended on ESG scores published by CRISIL. CRISIL, while a credible rating agency, started publishing comprehensive ESG scores only from 2021. Hence, we had only 3 years of data to work with. Out of the three years, we used the data for 2022 and 2023 only. The data published in 2021 was likely to be impacted by the COVID19 pandemic. The smaller dataset is definitely a limitation.

The three questions involving ESG scores dealt with the relationship between one categorical and one numerical variable. Analysing such relationships involving categorical variables is more challenging compared to establishing relationships between numerical variables. To study the relation between ESG score and a specific ESG implementation, we had to randomly divide our list of 151 companies into various categorical groups. For this we use the RAND() function available in Microsoft Excel and hence assumed that the function made a perfect randomized allocation of the companies into the categorical groups.

The aforesaid limitations cover all the challenges we faced in setting up the research design.

3.10 Conclusion

In this chapter, we provided the detailed methodology used to study the interplay between ESG implementation, financial performance, and company biases towards specifc E, S, and G factors. We analyzed financial data of 155 companies across 31 industry sectors over a ten year period from 2014 to 2023.

The data analysis used outlier detection techniques like inter-quartile range and Z-scores to analyse the impact of ESG implementation on financial performance. Correlation analysis, and variations of ANOVA tests were used to study the relationship bewteen ESG scores and financial performance, ESG scores and industry sectors, and ESG scores and specific ESG implementations.

The analysis presented above must be considered along with the limitations cited for each of the four research questions. To analyse the first question, we depended on companies explicitly disclosing the impact of ESG implementation on financial performance in the annual report. For the remaining three questions, we used the ESG scores published by CRISIL in 2022 and 2023. Only two years of ESG data may not be adequate for a comprehensive analysis. Finally, to study company preferences for specific ESG implementations, we needed to randmoly divide the 155 companies into various environmental, social and governance factors. For the purpose we used the RAND() function in Microsoft Excel assuming that it provided a perfect randomized distribution. We cannot guarantee that the RAND() function gave a completely random distribution.

CHAPTER IV:

RESULTS

4.1 Do ESG implementations impact financial performance of companies?

In the Auto OEM sector, Tata Motors Ltd. reported an impact on earnings due to a transition to BS VI compliant emmision norms for its vehicles in 2022. In the Industrial and Capital Goods sector, statistically significant high values of ROE and ROA for Apar Industries during 2022-2023 was attributed to ESG related implementations. During the same year, General Insurance Company of India Ltd. operating under the Insurance sector recorded high ROE and ROCE values due to significant cut in its CSR expenditure. In the same time line, operating under the Metal industry, Hindustan Zinc Ltd reported statistically significant high ROE, ROCE, and ROA ratios which were partially attributed to ESG related implementations by the company. Indraprastha Gas Ltd. attributed its increase in earnings and spending during 2022-2023 to favourable government policies promoting clean energy. This company operates under the Oil and Gas industry. For Tata Power Company Ltd. operating under the Thermal Power industry, the increases in reveneues and expenses during 2021-2022 and 2022-2023, and the high ROE in 2021-2022 were attributed to ESG implementations like the company's push towards green energy by expanding renewable energy production and distribution efforts. JK Tyre & Industries Ltd., operating under the Tyre industry, returned a high PE ratio in 2017-18. The high PE was due to reduced earnings given the ban on non-BS IV vehicles affecting tyre sales.

Out of a total of 9360 financial values, 447 values showed significant deviations beyond statistically significant upper and lower bounds. Out of the 447 deviations, 16 deviations were atrributed to ESG implementations and regulations. Hence, the probability that a randomly selected financial value will show a significant deviation and that the deviation will be due to an ESG implementation came out to be 0.0017 or 0.17 percent.

4.2 Is there a relationship between ESG score and financial performance?

Pearson's correlation coefficients were calculated between ESG scores and various financial values captured to answer the previous question. After that the significance of the coefficients were determined using t and p values. The results are presented following each null hypothesis that was formulated for the purpose.

1. **H_0: There is no correlation between ESG Scores and Financial Measures**

   For the correlations calculated for the data for 2021 – 2022, all the t values were less than the t critical value and the p values were greater than the significance level of 0.05 as can be seen in Table 3.8.1.1. For the correlations calculated for the data for 2022 – 2023, the correlations between ESG scores and Sales, ESG scores and Expenses, and ESG scores and ROE turned out to be statistically significant as can be seen in Table 3.8.1.2. Overall, for the entire duration from 2021 to 2023, the correlation between ESG scores and Sales, and the correlation between ESG scores and Expenses as can be seen in Table 3.8.1.3.

2. **H_0: There is no correlation between E Scores and Financial Measures**

   For the correlations calculated for the data for 2021 – 2022, all the t values were less than the t critical value and the p values were greater than the significance level of 0.05 as can be seen in Table 3.8.1.4. For the correlations calculated for the data for 2022 – 2023, the correlations between E scores and Sales, and E scores and Expenses turned out to be statistically significant as can be seen in Table 3.8.1.5. Overall, for the entire duration from 2021 to 2023, the correlation between E scores and Sales, and the correlation between E scores and Expenses as can be seen in Table 3.8.1.6.

3. **H_0: There is no correlation between S Scores and Financial Measures**
   For the correlations calculated for the data for 2021 – 2022, the correlations between S scores and Sales, and S scores and Expenses were statistically significant as can be seen in Table 3.8.1.7. For the correlations calculated for the data for 2022 – 2023, the correlations between S scores and Sales, Expenses, ROE, and ROCE turned out to be statistically significant as can be seen in Table 3.8.1.8. Overall, for the entire duration from 2021 to 2023, the correlation between S scores and Sales, Expenses, and ROE were statistically significant as can be seen in Table 3.8.1.9.

4. **H_0: There is no correlation between G Scores and Financial Measures**
   For all the three timelines 2021-2022, 2022-2023, and 2021-2023, the correlations between the G score and financial measures were not statistically significant as the t values were less than the t critical value and the p values were greater than the significance level of 0.05. These findings were presented in Table 3.8.1.10, 3.8.1.11, and 3.8.1.12.

4.3 Is there a relation between ESG scores and Industry sectors?

Two factor ANOVA without replication was used to identify relationships between E, S, and G scores and industry sectors. If the E, S, and G scores did not depend on the industry sector, the differences in the mean values should not be statistically significant. The two factor ANOVA provided us with F and p values. We compared these F and p values to the corresponding F critical value and significance level and determined their statistical significance. The results are presented in Table 4.3.1. This table summarizes the findings from Table 3.8.2.1 through Table 3.8.2.3. The null hypothesis formulated was **H_0: There is no relation between ESG Scores and Industry sectors as the differences in mean E, S, and G scores are not statistically significant**.

Table 4.3.1 showed that for each of the three timeframes, 2021-2022, 2022-2023, and 2021-2023, the F statistic was greater than the corresponding F critical value and p values were lower than the level of significance. This indicated that the difference in the mean E, S, and G scores were statistically significant and we rejected the null hypothesis.

Table 4.3.1 – ESG Score and Industry Sector ANOVA results summary

Year	F Statistic	F Critical	p value	Significance level
2021-2022	5.3958	1.6491	1.52E-08 (≈ 0)	0.05
2022-2023	3.7060	1.6491	7.84E-06 (≈ 0)	0.05
2021-2023	3.9626	1.4249	5.07E-11 (≈ 0)	0.05

4.4 Do companies prefer specific ESG implementations?

In Table 3.8.3.1, we listed the E, S, and G parameters used by CRISIL to give ESG scores to companies. Then we used a completely randomized design one-way ANOVA to investigate if companies demonstrated biases towards a specific type of E, S, and G implementation. For example, was there a greater preference shown by a company towards the parameter “Energy and emissions” versus “Water use” when it came to Environmental parameters of ESG implementation.

The completely randomized design one-way ANOVA provided us with F and p values. We compared these F and p values to the corresponding F critical value and significance level and determined their statistical significance. The results are presented in Table 4.4.1. This table summarizes the findings from Table 3.8.3.2 through Table 3.8.2.10. The null hypothesis formulated was **H_0: Companies do not exhibit preferences towards specific ESG implementations**.

Table 4.4.1 showed that for each of the three timeframes, 2021-2022, 2022-2023, and 2021-2023, the F statistic values were less than the corresponding F critical values and p values were greater than the level of significance. This indicated that there was not enough evidence to show that companies exhibited biases towards any specific ESG parameter and so the null hypothesis cannot be rejected.

Table 4.4.1 – Company bias towards specific ESG parameters ANOVA results summary

Year	**Parameter Area**	**F statistic**	**F critical**	**P value**	**Significance Level**
2021-2022	Environmental (E)	0.0235	2.7694	0.9951	0.0500
	Social (S)	3.0298	3.1588	0.0562	0.0500
	Governance (G)	1.2717	2.3861	0.2896	0.0500
2022-2023	Environmental (E)	2.1610	2.5397	0.0855	0.0500
	Social (S)	1.0969	3.1588	0.3409	0.0500
	Governance (G)	2.3087	2.7694	0.0863	0.0500
2021-2023	Environmental (E)	1.1522	2.6802	0.3310	0.0500
	Social (S)	0.0357	3.0718	0.9649	0.0500
	Governance (G)	0.2074	2.6802	0.8911	0.0500

4.5 Summary of Results

The results presented above can be summarized using the following four statements.

i. The probability that a randomly selected financial value among change in sales, change in expenses, PE, ROE, ROCE, and ROA ratios will show a significant deviation from one financial year to the next and that the deviation will be due to an ESG implementation came out to be 0.17 percent.

ii. The correlation between ESG scores and financial measures are statistically significant when we consider ESG score and change in sales, and ESG score and change in expenses. For the remaining four measures, the correlation was not statistically significant.

iii. There seemed to be a statistically significant relation between ESG scores and Industry sectors.

iv. Companies did not exhibit any bias or preference towards a specific ESG parameter that CRISIL used to give ESG scores to companies.

4.6 Conclusion

We analysed the financial data published by 155 Indian companies across 31 industry sectors over a 10 year period from 2014 to 2023. We also anlysed the Environmental (E), Social (S), and Governance (G) scores obtained by these 155 companies from CRISIL during 2021-2022 and 2022-2023. From the annual reports we found that very few companies attributed a change in their financial performance to ESG related factors. Correlation analysis showed us that there was some degree of correlation between ESG implementation and a change in sales and expenses. ANOVA analyses indicated a relation between ESG score obtained by a company and the industry sector to which it belonged. These analyses also indicated that companies did not exhibit any preference towards a specific type of ESG implementation.

CHAPTER V:

DISCUSSION

5.1 Discussion of Results

From the data analysis and the results presented in the preceding chapters, we found that ESG impementation did not impact our 31 industry sectors (complete list is provided in Table 3.7) and 6 financial performance measures (specified in section 3.2) in equal measure. We also found that Governance related factors did not have any correlation with our chosen financial performance measures. Detailed discussions on each of the four reasearch questions are presented below.

5.2 Discussion of Research Question One

The first research question we studied was "Do ESG implementations impact financial performance of companies?". For this question we analysed the financial performance of 155 companies over a ten year period from 2014 till 2023. We observed 447 statistically significant deviations of which only 0.17 percent deviations could be linked to ESG related factor. For example, in 2022, Tata Motors Ltd. attributed a decline of earnings due to a transition to BS VI compliant emission norms in its vehicles. We also observed that most of the ESG related deviations being reported were reported during 2022-2023. These observations had been noted under section 4.1. This may be due to the government making it mandatory for the top 1000 Indian companies based on market capitalization to prepare a report called the BRSR (Business responsibility and sustainability report) containing detailed ESG disclosures from FY 2022-23. This regulation had been noted under section 1.1.

5.3 Discussion of Research Question Two

The second research question we studied was “Is there a relationship between ESG score and financial performance?”. The correlation between overall ESG scores, and changes in sales and expenses were statistically significant. Individual Environmental (E) scores and changes in sales and expenses, and individual Social (S) scores and changes in sales and expenses also showed statistically significant positive correlation. However, there was no statistically significant correlation between individual Governance (G) scores and changes in sales and expenses.

The above findings should be accurate as these were in line with general understanding. An implementation of environmental related measures require companies to make capital investments in green technologies. Companies usually work around the increased expenses by increasing product and service prices. Hence, companies realize an increase in revenues. Similarly, focussing on social issues, investing in CSR activities, and the like, can raise the goodwill value of companies and thereby positively impact revenues. On the other hand, governance related changes may not have any impact on financial performance. For example, a company may bring in newer improved reporting and audting mechanisms which may not have any impact on revenues and expenses.

5.4 Discussion of Research Question Three

The third research question we studied was “Is there a relation between ESG scores and Industry sectors?”. We used the two factor ANOVA without replication as this technique helped us to find the interaction between industry sectors and environmental scores, between industry sectors and social scores, and between industry sectors and governance scores. Our tests showed that the difference of mean environmental scores, mean social scores, and mean governance scores were statistically significant for each of the 31 industry sectors we considered. This means that the kind of industry scores impacted environmental, social, and governance scores. If this was not the case, the difference in means would not have been statistically significant.

The above findings should be accurate as these confirm to general intuitions. For example, an initiative which substantially reduces its dependency on coal for power generation, should be rated different compared to an initiative of migrating from electric heating of office buildings to solar heating.

5.5 Discussion of Research Question Four

The fourth research question we studied was “Do companies prefer specific ESG implementations?”. The investigation for this question was the most challenging as annual reports showed a plethora of initiatives across environmental, social and governance parameters without mentioning any preferences. Hence, we used a completely randomized design one-way ANOVA to study company preferences towards specific ESG implementations. To study preferences towards environmental parameters, we randomly divided the companies among various environmental parameters listed in Table 3.8.3.1. We assumed that the random distribution of companies nullified selection bias. The same approach was taken to study company preferences towards social and governance parameters.

Our investigations did not provide us with the evidence based on which we could reject the null hypothesis that there is no biases exhbited by companies towards specific ESG parameters. These results confirmed with the data in the annual reports regarding company commitments to environmental, social and governance related causes. In other words, annual report mentions included most of the ESG parameters that CRISIL used for rating purposes, if not all of the parameters.

CHAPTER VI:

SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

6.1 Summary

This research investigated the impact of ESG initiatives on the financial performance of companies. It used data from 155 companies across 31 industry sectors from 2013-2014 till 2022-2023. For the given timeline, we investigated statistically significant deviations in year on year changes in sales, changes in expenses, PE ratios, ROE ratios, ROCE ratios, and ROA ratio. Only a miniscule 0.17 percent of the total deviations observed could be attributed to ESG related factors.

This study also used ESG scores published by CRISIL, for 2022 and 2023, and investigated the correlation between the ESG scores and financial performance measures, the relationship between industry sectors and ESG scores, and company preferences towards specific ESG parameters used by CRISIL for ESG scoring purposes. The correlation between ESG scores and changes in sales and expenses were statistically significant. The correlation between social scores obtained by a company and its ROE and ROCE ratios during 2022-2023 was statistically significant. Governance scores were not correlated to financial performance. The relation between ESG scores and industry sectors were statistically significant. Finally, there was no evidence to suggest that companies showed preferences towards specific ESG parameters.

6.2 Implications

The findings from this study suggest that investment in ESG initiatives or compliance to ESG regulations does impact financial preformance measures albeit not uniformly with the impact on some measures not apparent. The data used here showed that social initiatives impacted a wider spectrum of financial measures when compared to environmental initiatives. On the other hand, the impact of governance initiatives were not apparent in this study. Our investigations showed that while industry sector influenced the environmental, social, and governance scores that companies obtained, companies themselves did not demonstrate preferences towards specific ESG parameters.

All the results obtained in this research validated common place understanding and regular intuition. However, given the amount of evidence based on which we made this observation, we would caution readers against assuming causality. The impact of ESG on financial bottomlines is complex and subtle and this study, like others, reveal that more data and analysis is always more helpful.

6.3 Recommendations for Future Research

CRISIL started publishing ESG scores for companies from 2021. Hence, for this study we considered the scores published in 2022 and 2023. We excluded the scores in 2021 as most businesses were not 100 percent operational given the pandemic induced lockdowns and operating restrictions. Future studies should analyze data over a longer period to identify long term trends in the correlation between ESG scores and financial performance. Such longitudinal studies can also identify long term trends in companies' preferences towards ESG parameters, and the impact of the industry they are in on environmental, social, and governance scores. Similarly, expanding the scope of ESG parameters beyond those used by CRISIL in their scoring system may uncover additional insights into the relations between ESG parameters and financial performance.

After analysing annual reports for the causes behind statistically significant deviations in financial values from one year to the next, we found that only 0.17 percent of these deviations could be attributed to ESG related factors. However, around 69 percent out of the 0.17 percent were reported during FY 2022-2023. Was this an outcome of the Government of India making it mandatory for companies to provide BRSR (Business responsibility and sustainability report) disclosures from FY 2022-23? This will be an interesting question to investigate.

We had noted in section 3.9 that companies do not explicitly mention the impact of ESG implementations on their financial performance in their annual reports. Future reasearch using the case study approach or the interview approach might provide additional insights on how ESG implementations are planned and managed.

Finally, focused studies in individual industry sectors may reveal more specific information on the questions we investigated.

6.4 Conclusion

This research attempted to perform a comprehensive analysis of the impact of Environmental, Social, and Governance (ESG) regulations and/or implementations on the financial performance of Indian companies. The study examined 155 companies across 31 industry sectors over a ten year period from 2014 till 2023. Following are the key findings in the study.

- Impact on financial performance due to ESG implementation was very low. Only 16 out of 447 statistically significant year on year deviations in the financial values could be linked to ESG factors.
- Statistically significant positive correlation was found between Environmental (E) scores and sales, and expenses. Statistically significant positive correlation was also found between Social (S) scores and sales, expenses, and Return on Equity (ROE). However, there was no statistically significant correlation between Governance (G) scores and any of the six

financial measures (Sales, expenses, PE ratio, ROE, ROCE, and ROA) considered in the study.

- The research found that the nature of the industry sector to which a company belonged did influence its ESG score.
- Companies did not demonstrate any preference for specific environmental, social, and governance features.

This study suggested that ESG impact on financial performance may not be just causal but more complex and multifaceted. An analysis of the annual reports suggested that companies usually integrated ESG initiatives into their overall business strategy in order to realize long term financial benefits. Hence, the impact of ESG implementation may not be readily apparent. Social implementations seems to impact a wider spectrum of financial measures compared to environmental implementations. Governance on the contrary did not show any correlation with financial performance.

The research also had some limitations. The impact of ESG implementations on financial performance was studied under the assumption that companies explicitly mentioned the same in their annual reports. Two years of ESG scores may not be adequate for drawing conclusions regarding the relationship between ESG scores and financial performance, or the relationship between ESG scores and industry sectors, or identifying company preferences towards specific ESG parameters. The use of the Microsoft Excel randomized function to categorize companies into various environmental, social and governance parameters for analysis may not guarantee a perfectly randomized distribution.

To conclude, this research provided a comprehensive study on how ESG implementations impacted the financial performance of Indian companies. It explored how industry sectors influenced ESG scores, and if companies demonstrated biases towards specific ESG parameters. The results of the study aligned with common understanding and intuition. The study revealed that the relationship between ESG and financial performance is complex and subtle. More data and analysis will help in improving our understanding regarding the intricate relationship between ESG implementation and a firms financial performance.

APPENDIX A

DATA USED AND ANALYSIS ROUGH WORK

The data used and analysis rough work is provided in the following links. SSBM emails can access the links directly. Other users can request access to the data by sending a request email at chandan@ssbm.ch with the purpose and verifyable indentity clearly mentioned in the email.

Download data used and analysis presented in section 3.7

Download data used and analysis presented in section 3.8

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