# Corporate Sustainability Architecture: A Case-Study for Tata Steel

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## SELF-DECLARATION

This is to certify that the thesis submitted by me titled 'Corporate Sustainability Architecture: A Case-Study for Tata Steel' is my original work and has not previously formed the basis for the award of any Degree, Diploma, Associateship or Fellowship to this or any other University.

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## ABSTRACT

Businesses have a wide range of impact on the external environment at the same time exogenous factors directly and indirectly affect the business. Sustainability in corporate behavior has become fundamental to derive profit with purpose. This project report has been prepared to highlight emerging trends and practices in corporate sustainability architecture from the perspective of Tata Steel Ltd. The interlinkage between steel and sustainability have been highlighted in this study. The importance of finance which enables sustainable business growth has been established and the emergence of a sustainable finance framework for sustainable bond issuances have been discussed. The kind and the constituents of the framework from the Tata Steel perspective has been provided. ESG ratings also form part of this project report where key material gaps in performance related to sustainability have been identified for Tata Steel. Comparative analysis and benchmarking have been conducted to highlight various practices in this field. The findings of this study reveal that GHG emission reduction is one of the most fundamental sustainability issues. Projects like procurement of renewable energy for business operations, investment into low carbon production technologies, educational support for dependent communities have also been identified. The report concludes with general recommendations for corporates particularly steel producers which is related to the findings of this study.

## ACKNOWLEDGEMENT

This research became reality with the humble support of many individuals which includes my institutional project supervisor Dr. Amrendra Pandey and host organisation mentor Mr. Piyush Jha . I would like to express my deep gratitude towards Tata Steel's management and company officials in the corporate sustainability and corporate finance team.

The project has provided me with an insider perspective of corporate functionality especially related to sustainability and financing themes. I have travelled between Mumbai and Jamshedpur to interact with different teams on various facets related to corporate sustainability. Mr. Neeraj Singhvi and Mr. Manoj Kumar Tiwary, senior manager in corporate finance and corporate sustainability respectively have guided me for both research questions. It was due to their valuable assistance that I have been able to provide recommendations and findings as an end result during the three month long engagement. Continuous and meaningful support was received from Dr. Pandey in drafting this capstone report.

I would also like to thank senior officials in Tata Steel who have provided their valuable feedback and presented their perspective to showcase a macro picture related to sustainability and steel theme and its relevance in the Indian context.

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## LIST OF ABBREVEATIONS

| Abbreviation | Full Name |
|---|---|
| BOF | Basic Oxygen Furnace |
| $CO_2$ | Carbon-di-oxide |
| CSR | Corporate Social Responsibility |
| DJSI | Dow Jones Sustainability Index |
| EAF | Electric Arc Furnace |
| EBITDA | Earnings before Interest, Tax, Depreciation and Amortisation |
| ERM | Environmental Resources Management |
| ESG | Environmental, Social and Governance |
| FPIC | Free Prior Informed Consent |
| GDP | Gross Domestic Product |
| GHG | Greenhouse Gas Emissions |
| GRI | Global Reporting Initiative |
| HSBC | Hongkong and Shanghai Banking Corporation |
| ICMA | International Capital Market Association |
| IEA | International Energy Association |
| IEEFA | Institute for Energy Economics and Financial Analysis |
| IIGCC | Institutional Investor Group on Climate Change |

| | |
|---|---|
| IRMA | Initiative for responsible mining assurance |
| KPI | Key performance indicators |
| LTIFR | Loss time in injury frequency rate |
| MnT | Million Tons |
| MSCI | Morgan Stanley Capital International |
| POSCO | Pohang Iron and Steel Company |
| SBTi | Science Based Targets Initiative |
| SFF | Sustainable Finance Framework |
| SPT | Sustainable Performance Targets |
| SSAB | Svenskt Stål |
| WSA | World Steel Association |

# 1.0 INTRODUCTION

To envision a sustainable future requires incremental and significant shifts in corporate functionality in near, medium and long term. These changes are generally measured across environmental, social and governance (ESG) factors and objectives, financially relevant for the organization. To highlight some of the essential practices required for achieving the corporate sustainability targets and proposing the way forward has been the objective behind this study. Tata Steel Ltd. has been the host organization for the project and the findings of research is limited to Tata Steel.

Iron and Steel has always been considered the foremost requirement to support economic growth by providing necessary direct and indirect inputs for almost every other contributor to the national and global gross domestic product (GDP). Steel has always been regarded as a 'hard to abate' sector not only due to high emissions but also due to existing technology, long gestation periods, high abatement costs for projects and a wide range of stakeholders involved. Some of the challenges and opportunities will be discussed in greater detail in the following chapters. In the international arena, steel production is considered a key variable to determine a nation's economic capabilities along with military and technology. Therefore, engaging with the $10^{th}$ largest steel producing company globally in the context of an emerging economy like India has been an insightful experience.

At the backdrop of sustainability, Tata Steel is poised to fulfil its growth ambition from 31.03 million tons (MnT) of steel production in the financial year 2021-22 to 40 MnT capacity by 2030. Tata's have set out explicit sustainability targets for key ESG issues. However, carbon dioxide emissions have been most material due to rising global

temperatures as result of overaccumulation of green-house gases in the atmospheric layer. Every ton of steel produced in 2020 emitted on average 1.89 tons of carbon dioxide, equating to about 8 percent of global carbon dioxide emissions (World Steel Association, 2021, p. 03). Hence, decarbonization poses both timely opportunities and arduous challenges for Tata Steel.

The project report focuses on the financing needs for meeting sustainability goals for Tata Steel. Sustainable Finance Frameworks (SFF) have been specifically focussed upon which establishes a link between financial requirements and sustainability objectives of an entity. These frameworks are issued in accordance with the International Capital Markets Association (ICMA) guidelines on sustainable finance. Raising different kinds of bonds for sustainability purposes from capital markets requires such voluntary frameworks as best-market practice. Tata Steel has been considering developing a SFF to raise capital from debt markets to pursue its responsible growth journey in a sustainable manner. The analysis focussed upon providing recommendations to Tata Steel for the SFF and benchmarking of best practices across different industries. The recommendations have been prepared after assessing the Tata Steel specific context and requirements of investment banks.

An important piece in corporate sustainability functionality remains ESG ratings which describes the impact of ESG considerations on the financial performance of the entity. Institutional investors have been using ESG ratings as a screening tool to measure sustainability performance along with financial viability. This report would assess specific issues across E,S and G which have impacted Tata Steel's ESG ratings. The gap analysis and way forward would be suggested for Tata Steel to improve their existing ESG score.

It has been observed that Tata Steel is uniquely positioned as the only Indian company among top ten steel producer companies globally. With operations in different geographies around the world, Tata Steel would be required to equally match sustainability efforts of foreign counterparts at the same time increase production capacity to service the rising aspirations of a growing Indian economy. An integrated framework should be considered with a link between sustainable performance targets (SPTs) and sustainable projects (green and social) through which Tata Steel can justify its ambitions. On the environmental front carbon emission reduction in relative and absolute terms have been suggested for the horizon year 2030 which is in line with the sustainability commitments of Tata Steel. To emerge as a socially responsible steel producer, Tata Steel must consider educational training and infrastructure development projects relevant for the geographic setting of its operations. To improve their ESG related ratings material gaps were identified for key issues: Corporate governance, Carbon emissions, Community relations, Occupational health and safety and Emissions and Waste. Specific score improvement measures have also been suggested in the report after having studied different rating methodologies and requirements.

# 2.0 LITERATURE REVIEW

This section covers relevant secondary literature for the purpose of research on the topic. Various journals, industry reports, and existing frameworks of peer-companies have been studied. The literature has been categorized into the following themes for the purpose of this research:

2.1 Steel and sustainability

2.2 Investor expectations from steel makers

2.3 Emergence of sustainable finance

2.4 ESG rating integration and impact

2.5 ESG rating universe challenges

The above themes revolve around sustainability issues, opportunities and expectations from the steel sector. A holistic view has been considered in engaging with the relevant literature available in the national and international context.

## 2.1 Steel and sustainability

Sustainability includes various environmental issues and most importantly carbon emissions as applicable to the steel sector. Therefore across different literature decarbonization has been regarded as the foremost concern. The World Steel Association (WSA) public policy paper on climate change and steel production (World Steel Association, 2021) and IEA (International Energy Association) iron and steel technology road map (IEA, 2020) have highlighted different technology measures, energy efficiency improvement and scope for scrap recycling in sustainable development scenario for 2050. The study has also highlighted the need for policy support for first movers towards

sustainable steel production due to rising production costs and competition from conventional steel producers in different geographies. Similar observations have been made in the McKinsey study on decarbonization challenge for steel (Hoffman et al., 2020) where along with deployment of low-carbon technologies in steel production, the use of green hydrogen has been explored for the European markets. The challenge lies in scaling such production technology with high associated costs and low technical know-how. Another global study titled 'Making net-zero Steel Possible' (Delasalle & Speelman, 2022) has highlighted the need for investments in low-carbon steelmaking in the next decade and scenario analysis for a 1.5 degree aligned pathway up till 2050. It must be noted that after having scanned various sustainability commitments of major global steel players, it has been observed that the ambition for net-zero achievement has been set for the horizon year 2045 to 2050.

## 2.2 Investor expectations from steel makers

The literature survey captures current trends in investor sentiments for steel producing companies in pursuing sustainability commitments. The Institutional Investor Group on Climate Change (IIGCC) report (AIGCC et al., 2018) has been considered to gauge investor expectations. It was observed that investors would want steel companies to move beyond mere efficiency improvements and set ambitious scientifically verified targets aligned with the Paris Agreement. Corporate governance, transition plan and disclosures are important considerations from an investor perspective. To understand investor sentiments better HSBC was considered which has already pledged a 47.5 percent reduction in financed emissions (intensity terms) for iron, steel and aluminum sector by

2030. The HSBC report on ‘Steel for the Future’ (HSBC Center of Sustainable Finance, 2019) where the investment bank has provided expectations and possible pathways for steel companies to reduce emissions. Industry led initiatives like Responsible Steel certification is considered aligning steel companies with investor expectations.

## 2.3 Emergence of sustainable finance

The book ‘Sustainable Finance Principles’ (Schoenmaker & Schramade, 2019) has been fundamental in laying the required foundation for utilising a new financial tool to incorporate climate related risks and most importantly resource scarcity in economic models. The author argues in favour of a value creation framework for long-term value creation against conventional financial value. The book lays specific focus on sustainability challenges for corporations and use of tools like scenario analysis and stress testing to measure future uncertainties. The key learnings from the book is reflected in ‘Trends in Sustainable Investing’ (Uzsoki, 2020) wherein various global investors have shown proof by aligning their financial motives with climate related risks and opportunities. Surveys and data points showcase this movement of investor sentiments. For example: Sustainable debt issuances have increased from USD 5.1 billion in 2012 to cross USD 800 billion in 2021. The use of green bonds in meeting the sustainability commitments for corporations has been highlighted in the paper ‘Are green bonds funding the transition?’ (Tuhkanen & Vulturius, 2020). For this purpose 20 green bond issuers have been studied and their practices highlighted. Gaps have been identified in the use of proceeds of green bonds which points towards concerns of greenwashing. After engaging with the available literature it seems that financial markets are constantly progressing towards sustainable

assets and the capital pool has significantly increased. However challenges exist in internalization of associated risks and subsequent reporting to achieve corporate sustainability targets.

2.4 ESG rating integration and impact

ESG metrics integration into credit assessments will result in direct positive financial implications for companies moving in the sustainability direction by uncovering hidden risks, enhancement of saving potential, capital allocation and improvement in creditworthiness. The latest report by Institute for Energy Economics and Financial Analysis (IEEFA) on credit rating assessments and sustainability (Llango, 2023) points towards the need for intersection of ESG and Credit factors known as ESG Credit factors. Various case studies have been highlighted to show the current minimal implication of ESG factors into credit ratings. On similar lines the ERM rate the raters report 2023 (Brock et al., 2023) have highlighted the rise of sustainable investing and subsequent importance of ESG rating agencies. The report argues that ESG rating must feed into corporate rating and inform both investors and corporates on ESG performance in a transparent manner. Assessments have been to capture investor and corporate sentiments related to usefulness and quality of ESG ratings.

2.5 ESG rating universe challenges

Consistency and transparency have been identified as common barriers in establishing credibility of ESG ratings for greater adoption by investors and corporate decision-making. The Global Reporting Initiative (GRI) perspective on ESG rating (Global Reporting

Initiative, 2022) argues for a common baseline for ESG disclosures and another report on the ESG rating status (Mazzacurati,2021) highlights the need for greater correlation between different ESG rating providers from existing 60% to 99%. An article titled ‘ESG rating- Necessity for the Investor or the Company’ (Zumente & Lāce, 2021) showcases the divergence using t-test analysis and finds a correlation of 0.58 between two most popular ESG ratings.

# 3.0 METHODOLOGY

## 3.1 Problem Statement

Sustainability for corporations has gradually turned to become a business imperative. Numerous challenges will manifest as corporations progress towards sustainable business practices ranging from mobilization of adequate financial capital, reframing business models to capture risks and opportunities, availability of alternative technologies to facilitate transition and potential adverse impact upon concerned stakeholders. The lack of a classification system to finance the sustainability commitments for corporations has become a concern for investors. Greenwashing and misallocation have been posing a serious threat upon investor confidence. A publicly available guiding document will be required to indicate the financial means employed to meet sustainable ends from a corporate perspective.

ESG ratings have been reflective of sustainable performance of corporations in business practices. Corporations face ESG specific financially material risks in their business operations. These gaps could potentially impact borrowing capabilities as investors tend to integrate ESG metrics in investment decisions. Moreover, improved ESG ratings strengthen brand reputation to showcase sensitiveness towards sustainability at the highest decision-making.

The above mentioned concerns remain valid for Tata Steel Ltd. which is the host organization for the purpose of this study. Therefore, both the problems would be examined from a Tata Steel perspective.

## 3.2 Research questions

- What should constitute within the Sustainable Finance Framework for Tata Steel Ltd?
- Identification of ESG specific gaps and what measures should be undertaken for improvement in score from Tata Steel perspective?

## 3.3 Objective of research

The objective of this study is to assess and improve the corporate sustainability architecture for Tata Steel Ltd. The research aims to provide recommendations for developing a Sustainable Finance Framework for Tata Steel in accordance with the International Capital Market Association (ICMA) guidelines for the purpose of raising money from the debt markets. It would also focus upon measures to be undertaken for improving the existing ESG score of Tata Steel after identifying gaps.

## 3.4 Methodology followed

The research carried out to provide recommendations and benchmarking of best practices from the Tata Steel perspective related to SFFs and ESG ratings. The research has been largely dependent on secondary sources available online. This includes scanning sustainability reports of peer companies, ICMA guidelines, issued frameworks across different industries, second party opinions, rating methodologies and performance reports of Tata Steel. The Bloomberg terminal was also utilized to track bond issuances made. After completing secondary research continuous engagement was established with company officials to understand the specific needs, achievable targets and importance of

ESG ratings. Three different ESG rating agencies and their methodologies have been considered here to arrive at the recommendations. Interaction with investment banks was established in the form of learning sessions on sustainable finance practices wherein their expectations were captured. Therefore, the analysis required a mixed research assessing both qualitative and quantitative company specific targets. A comparative analysis and benchmarking exercise has been conducted across different companies (steel and non-steel) to identify best practices. The following research process have been followed in conducting this research:

- Scanning integrated annual reports to profile selected steel companies across different geographies as per discussion with company officials
- Reviewing and benchmarking sustainable finance frameworks issued by companies to identify specific nuances and matching with the needs and requirements for Tata Steel
- Tracking different sustainability bonds issuances made in 5 year time period
- Identifying the best fit of the framework from Tata Steel perspective based on the findings and discussion with company officials
- Comprehending the relevance of ESG ratings for Tata Steel and engagement method with rating agencies
- Identifying three major rating providers after discussion with senior officials
- Reviewing the methodology of the rating providers which includes understanding their specific requirements, rating process, engagement and scoring mechanism.

- Spotting and analyzing specific gaps in ESG performance from reports and questionnaires across three rating agencies and prioritizing tasks to be undertaken for improving rating
- Comparing performance on specific ESG gasps with competitor steel producers

3.5 Data Sources

The following sources were referred so as to document this study:

- ICMA green bond, social bond, sustainability-linked bond principles
- Integrated annual reports of industry peers
- ICMA sustainable bonds database
- Existing sustainable finance frameworks of 15 companies
- Second party opinions of issued frameworks
- Investor expectations of steel companies
- Existing sustainable finance frameworks of investment banks
- Reviewing rating methodology of: MSCI, Sustainalytics and DJSI
- Tata Steel specific ESG risk reports and disclosures
- ERM rate the raters 2023

# 4.0 RESULTS AND KEY FINDINGS

## 4.1 Tata Steel's current positionality

This section describes and compares Tata Steel's current state in the global stage among steel producers. Key variables such as: Earnings before Interest, Tax, Depreciation and Amortisation (EBITDA), Production (volume), Physical presence, Operation type, Number of employees and Sustainability targets have been considered for comparison purposes. This section aims to provide an account of Tata Steel Ltd as compared to industry peers.

Tata Steel currently ranks 10th globally in terms of annual steel production with close to 31 million metric tonnes (MT). It remains the only Indian company to remain in the top 10 list which is dominated by Chinese players like China Baowu Group, Ansteel Group and Shagang Group. ArcelorMittal, POSCO and Nippon are non-Chinese players. Therefore, the geographical presence of major steel producers is largely restricted to emerging markets like India and China. It must also be noted that today the largest steel producers from China are state owned companies. Tata Steel remains a privately held company (Tata Sons) and has majority of its operations in India. To draw a fair and equal comparison, Chinese players have not been included in the list due to state support provided and only private players are considered.

Tata Steel is largely dependent on blast furnace technology (more than 95% operations) for steel production and has growth ambitions of 40 million MT by 2030. The following companies have been looked at to develop an understanding of the steel industry before delving into research problems:

- ArcelorMittal, Luxembourg

- Gerdau Steel, Brazil
- Nippon Steel, Japan
- SSAB, Sweden

The above list comprises companies from both developing and developed economies along with large and small steel players for a holistic comparison. It was observed that Tata Steel has physical presence in 4 countries whereas on an average the selected peers have 11 countries. With respect to operations, except for SSAB all other players have integrated (end to end) operations. Average EBITDA (2021) for peers is USD 9.04 billion whereas Tata Steel's EBITDA remains USD 6.2 billion. With respect to sustainability related commitments with horizon years made, Tata Steel has made the highest number of commitments on account of carbon-di-oxide ($CO_2$), fresh-water consumption, biodiversity loss, work-force diversity and various others. $CO_2$ emission reduction has been the only sustainability target for peers. Table 1 below draws a comparative picture of Tata Steel Ltd and selected peers for financial year 2021-22 in developed and developing countries.

| Steel Player | EBITDA ($ Billion) | Production (million MT) | Physical Presence (countries) | Operation Type | No. of Employees | Sustainable Targets |
|---|---|---|---|---|---|---|
| ArcelorMittal | 19.4 | 62.9 | 16 | Integrated | 158,000 | Carbon reduction and Women diversity |

| | | | | | | |
|---|---|---|---|---|---|---|
| Gerdau Steel | 4.46 | 13.3 | 9 | Integrated | 36,000 | Carbon reduction |
| Nippon Steel | 9.759 | 49.46 | 15 | Integrated | 106,000 | Carbon reduction and Women diversity |
| SSAB | 2.576 | 8.18 | 4 | Converter | 14,000 | Carbon reduction, Safety and Women diversity |
| Tata Steel | 6.2 | 31.03 | 4 | Integrated | 36,000 | Carbon reduction, Biodiversity loss, Water consumption, Diversity, Safety and others |

Table 1: Tata Steel basic comparison with some peers companies

4.2 Introducing sustainable finance framework

This section presents the findings for the first research question highlighted in this study. Before delving into the research problem, it must be understood that financing frameworks are guidance documents issued voluntarily before raising green, social, sustainable or sustainability-linked bonds. These frameworks are prepared in accordance with the International Capital Markets Association (ICMA) guidelines. Third party agency verification (in the form of second party opinions) of such frameworks is required in accordance with the ICMA guidelines to establish credibility among potential investors. The framework is an articulation of the entity's financial policy for meeting the financing needs for the identified environmental or/and social objectives.

It was observed that there exists two kinds of frameworks adopted by the market for the purpose of bond issuances for sustainable goals namely: Sustainable (green or/and social) finance and Sustainability linked finance framework. The key difference between both frameworks is earmarking of funds raised and defining of eligible projects or setting sustainable performance targets (SPTs). For a Sustainability-linked framework the proceeds raised can be used for general corporate purposes however, one or more SPT with specific key performance indicators (KPIs) must be revealed. Failure to achieve the set SPT as mentioned in the framework within the stipulated time-frame will result in penalty for the issuer. The penalty is generally observed in the form of a coupon step up by 75 basis points (could be higher or lower). ICMA does not mention the imposition of the penalty and the framework is also silent on the nature or quantum of penal provisions. These provisions must be articulated by the issuer in the prospectus before bond issuances. In the case of green or social bonds frameworks, the proceeds are specifically allocated towards

financing or refinancing eligible projects identified by the issuer. Additionally, annual monitoring and evaluation procedures, allocation of funds and reporting on the impact metrics must be provided by the issuer of the sustainable finance framework. Table 2 highlights the difference between both kinds of frameworks.

| Basis of Distinction | Green/Social/Sustainable Finance Framework | Sustainability-linked Finance Framework |
|---|---|---|
| Purpose | Direct linkage between investments and projects | Indirect positive impacts on the selected targets |
| Criteria | Eligible projects/assets | Identified material targets |
| Capital Deployment | Specifically earmarked towards projects/assets | General corporate purposes |
| Commitment Level by Issuer | Comparatively lower | Higher levels of commitment required |
| Reputational Risk | Moderate level of risk | High levels of risk |
| Penalty | No penalty specified | Bond characteristics might change |
| Available Pool of Capital | Larger pool of capital available | Current capital pool smaller |

| | | |
|---|---|---|
| Guidelines | ICMA Green Bond Principles<br>ICMA Social Bond Principles<br>ICMA Sustainable Bond Principles | ICMA Sustainability-linked Bond Principles |

Table 2: Difference Sustainability and Sustainability-linked financing frameworks

4.2.1 Kind of framework to be issued

It has been observed that in the case of Tata Steel, no single framework would suit its circumstance and region specific context. Tata Steel is a privately held steel company operating (largely) in an emerging economy like India where demand for steel will continue to increase in coming decades. At the same time, Tata Steel must equally match the sustainability efforts made by industry peers especially from Europe and Japan.

After having scanned 15 financing frameworks and 469 green and sustainability-linked issuances of more than USD 100 million across different sectors, it is suggested that Tata Steel develops an integrated financing framework incorporating sustainability and sustainability-linked bond principles.. After scanning ICMA Sustainability bond data-base, out of 469 issuances, 202 bonds with specific green criteria (Green bonds) and 67 sustainability-linked bonds were identified. Figure 1 reveals the specific type of bond issuances (in value terms) made since 2018 based on S&P ratings and research data. The existing capital invested in green bonds, social bonds and sustainability bonds is 8.48 times higher than for sustainability-linked bonds in the year 2022. On the contrary, to align with best market practices like Ultratech and SSAB, sustainability-linked frameworks are issued with step-up penalties. Of the 15 financing frameworks studies, it was observed that 8

entities have issued either green/social/sustainable finance frameworks, 6 have issued sustainability-linked financing framework and 1 entity has developed an integrated framework (sustainable plus sustainability-linked). Of these 15 frameworks thoroughly studied, 9 issues were in the hard to abate sectors. Within hard to abate, 5 players have sustainability-linked financing framework. It must be noted that the sustainability-linked financing framework has been developed and adopted since 2021 whereas green bonds were first issued in 2008. As per a recent OECD report on sustainability bonds in developing nations, a strong case has been presented for sustainability-linked bonds due to greater uptake by corporates and investors (OECD, 2022, p. 18-19). Table 3 reveals some of the key variables of the 15 financial frameworks studied from across different sectors. Therefore, data reveals that there has been greater uptake for green bonds (sustainability bonds) by the market at the same time best practices to meet sustainability commitments in line with Indian players like UltraTech Cement and JSW Steel, sustainability-linked bonds must be considered.

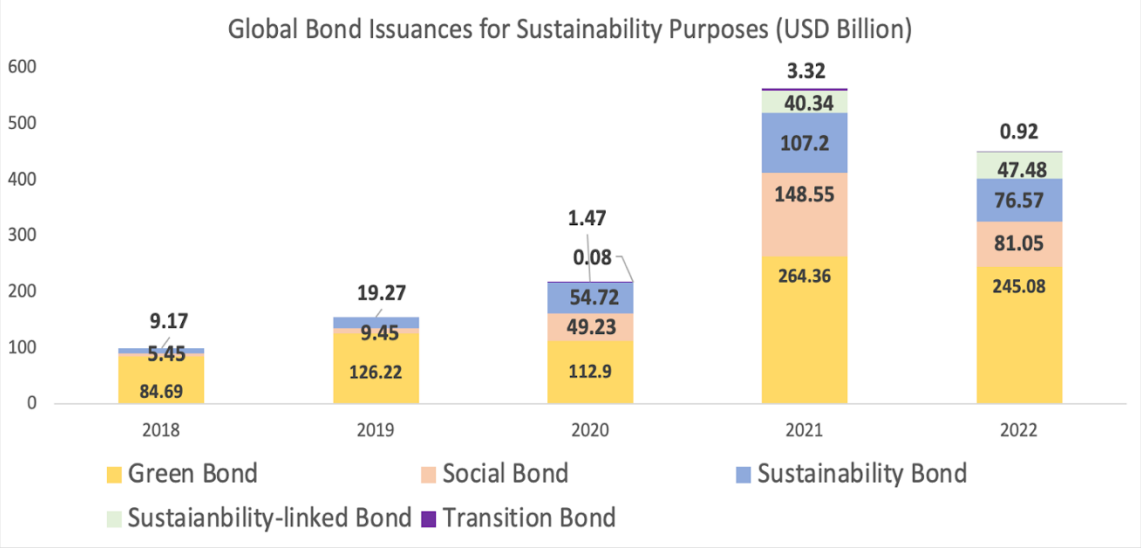


Figure 1: Global bond issuances made between 2018-2022 for sustainability purposes

| Company | Country | Sector | Type of Framework | Issued Year |
|---|---|---|---|---|
| POSCO | South Korea | Steel | Sustainable | April, 2019 |
| Colgate | USA | Retail | Sustainable | October,2021 |
| Nippon | Japan | Steel | Sustainable (Green) | February, 2023 |
| Fortescue | Australia | Mining | Sustainable | November, 2021 |
| BASF SE | Germany | Chemicals | Sustainable (Green) | May, 2020 |
| General Motors | USA | Automotive | Sustainable | July, 2022 |
| Phillips | Netherlands | Technology | Sustainable | April, 2019 |
| Duke Energy | USA | Energy | Sustainable | November, 2021 |
| LafargeHolcim | Switzerland | Cement | Sustainability-linked | November, 2020 |

| | | | | |
|---|---|---|---|---|
| Enbridge | Canada | Energy | Sustainability-linked | June, 2021 |
| SSAB | Sweden | Steel | Sustainability-linked | May, 2021 |
| JSW Steel | India | Steel | Sustainability-linked | June, 2021 |
| Nokia | Finland | Telecom | Sustainability-linked | February, 2023 |
| UltraTech | India | Cement | Sustainability-linked | February, 2021 |
| Valeo | France | Automotive | Integrated | July, 2021 |

Table 3: Basic profile of financing frameworks of 15 entities

A case example of Valeo was identified from the 15 frameworks scanned. The French automaker employs more than 1,14,000 employees operating in 31 countries with 49.6 million tonnes of Co2eq emissions (scope 1, 2 and 3) in 2019 baseline. Valeo has issued an integrated framework and has set 2 SPTs for absolute emission reduction including scope 3 upstream and downstream. Moreover, Valeo has raised bonds worth EUR 700 million with a coupon rate of 1 percent in 2021 for maturity in 2028 with the sustainability linked finance framework (Smckinley, 2021). Though Valeo has in place a sustainable (green) financing framework, it has not yet issued any bonds under this framework but has identified green projects in line with its sustainability strategy.

The integrated framework would provide flexibility to the company to present its sustainability commitment to match with financing needs/requirements under both methodologies. It would provide investors both asset specific and target specific approaches towards investments. With an integrated framework, the company can have capital allocated for eligible projects directly and used for general corporate purposes. The framework would adequately capture the unique position of the company between higher crude steel production to match Nippon and POSCO at the same time aggressively pursue a low carbon pathway for near to medium term sustainability goals. No other corporate entity in India has so far released an integrated framework.

### 4.2.2 Identified projects and targets

This section would highlight the SPTs and eligible projects to be included in the financing framework for Tata Steel. Almost every issuer (out of 15) have set targets or identified projects which have either direct or indirect impact on their current levels of GHG (majorly $CO_2$ emissions). On the environmental front, for issuers of Sustainable finance frameworks eligible project categories included: use of renewable energy for business operations, components for electricity operated cars and their batteries, circular economy products and research and development expenditure related to low carbon technologies. Of the 8 issuers of the Sustainable finance framework, 6 had identified social projects related to education of underprivileged children, employment generation and socio-economic advancement for vulnerable sections of the population. There existed 5 Issuers of sustainability-linked financing framework and have focussed only upon reducing carbon emissions within a defined time period. Only 1 issuer of sustainability-linked financing framework has

identified time-bound social targets for ethnic diversity in workforce and women representation in the board. Most of the targets have been set for the horizon year 2030. It was observed that relative importance for social issues is less compared to environmental ones due to lower uptake by corporates in the frameworks and individual net-zero commitments. However, the existing corporate social responsibility (CSR) allocation for Tata Steel revealed the highest expenditures for educational support for children and clean drinking water projects. Table 4 reveals the company specific target/projects as identified in financing frameworks.

| Company | Eligible Projects or Sustainable Performance Targets (SPTs) | |
|---|---|---|
| | Environmental | Social |
| POSCO | EV batteries & Renewable energy | Underprivileged education, SMEs growth & Venture investment |
| Colgate | • Circular economy adapted products, technologies and process<br>• Elimination of plastic waste in production process for pollution prevention and control<br>• Energy efficiency | • Access to Essential services like education, awareness programs, shelter for children and pets<br>• Investment for social well-being of minority communities |

| | | |
|---|---|---|
| | • Renewable energy generation and procurement<br>• Sustainable water management | |
| Nippon | • Non-oriented Electrical sheets for eco-friendly car motors | None |
| Fortescue | • Renewable Energy<br>• Energy efficiency<br>• Green Hydrogen and Ammonia<br>• Energy storage<br>• Clean transportation<br>• Pollution control<br>• Sustainable water management | • Employment generation<br>• Access to educational and vocational training<br>• Socio-economic advancement and empowerment |
| BASF SE | • Eco-efficient and Circular economy products, technologies and processes | None |

| | | |
|---|---|---|
| | (Accelerator, Carbon mgt, Low carbon transport, chemical recycling and related R&D)<br>• Renewable energy | |
| General Motors | • Clean Transportation | • Socio-economic advancement and empowerment |
| Phillips | • R&D expenditures for green innovation<br>• Implementation of circular products and solutions<br>• Sustainable business operations | • R&D related to financially sustainable care<br>• Improved access to care for underserved communities |
| Duke Energy | • Renewable Energy<br>• Green Innovation<br>• Energy efficiency<br>• Clean transportation | • Socio-economic advancement and empowerment by providing small business |

| | | |
|---|---|---|
| | • Climate Change adaptation<br>• Green Buildings | opportunities for target population |
| LafargeHolcim | • To reach 475 kg net Co2/ton of cementitious material in scope 1 by end of 2030 (17.5% decrease from 2018 baseline) | None |
| Enbridge | • 35% reduction in scope 1 and 2 GHG emission intensity by 2030 relative to 2018 baseline | • 28% representation of ethnic and racial groups in workforce by 2025<br>• 40% representation of women in board by 2025 |
| SSAB | • 35% reduction in Scope 1 and 2 emissions by 2035 (2018 levels)- SBTi approved GHG methodology | None |
| JSW Steel | • 23% reduction in Co2 emissions intensity per | None |

| | | |
|---|---|---|
| | tonne of crude steel produced from 2020 baseline by 2030 | |
| Nokia | • Reduce absolute scope 1, 2 and 3 Co2eq emissions by 50% by 2030 from 2019 baseline | None |
| UltraTech | • To reduce 22.2% of carbon emissions for every ton of cementitious material it produces by March 31, 2030 from the levels of March 2017 | None |
| Valeo | • Clean Transportation<br>• Renewable Energy<br>• Energy efficiency<br>**********<br>• 37.95 million tonnes of Co2eq emissions reduction in 2025 | • Increase purchases from suppliers subject to the evaluation of their sustainable development practices to 82% by 2025 (currently 81%) |

| | | |
|---|---|---|
| | • 27.88 million tonnes of Co2eq emissions reduction in 2030 | |

Table 4: Issuers and Identified projects and targets

The integrated framework should have SPTs, green and social projects for Tata Steel. A link can be considered establishing between projects and SPTs in a manner where investment raised under sustainable finance framework would directly/indirectly impact the set SPTs and vice-versa. Moreover, 2 different SPTs would be required based on the geographical context of Tata Steel business operations. Tata Steel has operations in Europe and India. It was observed that in the European context, the sustainability themes are more mature due to government regulations, customer demand, push from shareholders and competitor landscape. Therefore, more stringent targets would be required for European business. Of the sustainability-linked issuers from the hard to abate sectors, only 1 issuer from 5 issuers, had set $CO_2$ emission reduction targets in absolute terms. This shows that companies growth imperatives resulting in increased carbon emissions in absolute terms and gradually developing sustainability practices to reduce emission intensity. The KPIs and SPTs identified for Tata Steel have been selected to align with the sustainability commitments as disclosed in the integrated reports are as follows:

India operations

- KPI 1- $CO_2$ emission intensity (tonnes of $CO_2$/tonne of steel production 2018 baseline)
- SPT 1- <1.8 tonnes of $CO_2$ /tonne of steel production by 2030

Europe operations

- KPI 2- $CO_2$ emission reduction ( % reduction 2018 baseline)
- SPT 2- 30 percent reduction in $CO_2$ emissions from 2018 baseline by 2030

Green Projects (Capital and Revenue expenditures)

- Direct/indirect investment in electric arc furnace (EAF) technology
- Installation or procurement of renewable energy
- Investment into low-carbon fleet operations
- Research and development fostering innovation for low carbon steel production

Social Projects

- Educational support and Infrastructure development
- Clean drinking water projects
- Primary and secondary health care facilities
- Preserving tribal art and culture

## 4.3 ESG ratings and analysis

This section presents the findings of the second research problem. ESG ratings have been used to inform corporations of their exposure to risks and performance on account of sustainability. These ratings have been also looked upon by investors to assess the likely impact of non-financial indicators on financial performance of their portfolio companies. The common findings of the three ESG rating agencies have been identified and discussed from Tata Steel's perspective. The reports of MSCI, Sustainalytics and DJSI have been considered for the purpose of this study. Table 5 provides a brief description of each of these rating agencies.

| Rating agency | Headquarter location | Incorporation | Parent Organisation | Coverage | Scope of Work |
|---|---|---|---|---|---|
| DJSI | Switzerland | 1999 | Standard & Poor's | 10,000 companies & 61 industries | ESG Indices, Scoring & Best-in class benchmarks |
| Sustainalytics | Netherlands | 2018 | Morning Star | 12,000 companies & 138 sub-industries | Risk ratings & Research data |
| MSCI | USA | 2010 | Morgan Stanley | 8500 companies & 650,000 securities | ESG Ratings, Data & Analytical Tools |

Table 5: Basic profile of MSCI, DJSI and Sustainalytics

The current ESG ratings/score for Tata Steel varies between the above mentioned rating providers. This variation is captured in table 6 to highlight the latest ESG ratings of Tata Steel.

| Rating Agency | DJSI | Sustainalytics | MSCI |
|---|---|---|---|
| Scale | 0-100 (Worst-Best) | (0-10) Positive (10-20) Limited (20-30) Medium (30-40) High (40-100) Severe | (AAA)- Leader (AA)- Leader (A)- Average (BBB)- Average (BB)- Average (B)- Laggard (CCC)- Laggard |
| Tata Steel Ltd | 70/100 | 30.7/100 (High Risk) | B (Laggard) |

Table 6: Current ESG scores/ratings provided by the MSCI, DJSI and Sustainalytics

4.3.1 Rating methodologies

These rating agencies have followed different methodologies and processes to engage and then rate Tata Steel. It was observed that DJSI requires an annual elaborate disclosure on a range of activities to provide a score whereas Sustainalytics and MSCI would partially

engage with the company and rely on publicly disclosed information. DJSI would assess the company's performance based on a common set of disclosures across all sectors with differential sector specific weights. Whereas Sustainalytics and MSCI would focus on sector specific weighted material indicators. The ratings are re-assessed by the rating providers annually based on the commitment, performance updates and strategic decisions impacting ESG pillars. With respect to the methodology, a common observation was made with respect to associated controversies for the company. A contentious issue posing threat to business operations was duly captured by rating agencies in score calculation processes. However, due to lack of full transparency in scoring methodology, it would be difficult to highlight upon the formula for such incorporation. The following table points out key underpinnings of the methodologies of each of the rating agencies covered in this study.

| Rating agency | Engagement with company | Rating Scale | Methodology Coverage | Comments |
|---|---|---|---|---|
| S&P DJSI | Full | 0-100 | Generalized disclosure based across all sectors | S&P Corporate sustainability handbook 2023 dictates disclosures required along with sector and question specific weights |

| | | | | |
|---|---|---|---|---|
| Sustainalytics | Partial | 0-10 | Generalized with sector specific indicators | ESG exposure along with exposure management is assessed based on sun-industry exposure, company specific factors |
| MSCI | Negligible | AAA-CCC | Generalized with sector specific indicators | Assesses publicly available information only. Uses two different methods for E,S and Governance score calculation. The final numeric score is converted into a letter rating |

Table 7: Indicates rating methods of MSCI, DJSI and Sustainalytics

4.3.2 Performance gaps identified

The common set of gaps or ESG specific risks that have been identified for Tata Steel and measures to be undertaken for score improvement purposes will be covered in this section. The common material topics which have been assigned highest weightage having severe risk exposure, where required action could improve score for Tata Steel Ltd. are as follows:

- Corporate Governance
- Carbon Emissions
- Emissions, Effluents and Waste management

- Occupational Health and Safety
- Community Relations

Other issues which were identified as relevant though not common across all three rating agencies are as follows:

- Water Stress
- Labour Management

It was observed that Tata Steel faces high risk exposure on material issues higher than industry average. At the same time, Tata Steel has displayed strong risk management practices for these issues as well. Corporate governance remains a common theme for all companies being rated. However, the weightage assigned for corporate governance differs among MSCI, DJSI and Sustainalytics. The weightage ranges between 7-33 percent for the rating providers considered. The reason for the wide divergence is primarily due to methodology followed. For example: DJSI requires disclosure for 23 material topics common for all companies of which the highest weightage is 9 percent and lowest is 2 percent. DJSI assigns 7 percent weightage to corporate governance. MSCI considers 6 issues material for steel sub-industry of which corporate governance is issued 33 percent weightage. The scoring process and methodology differs, although common insights provided by the agencies can be derived to inform decision-making towards score improvement for Tata Steel. The following sub-issues were identified related to Corporate governance from ESG rating reports for Tata Steel:

- Related party transactions in the purview of non-independent directors
- Board committees not fully-independent
- Claw-back and deferral bonus provisions are missing

- Over boarding of non-executive directors
- Higher gender diversity required
- Lack of relevant industry experience for non-executive directors
- Guidelines required for management stock ownership required
- CEOs current stock ownership is low
- Lack of majority of independent directors in board

Carbon emissions have been regarded as the most material issue especially for the steel industry. While profiling the peer companies in the steel production sector, publicly disclosed carbon emission reduction targets were common. According to a study by HSBC center for sustainable finance per ton of steel of production using basic oxygen furnace technology would release 2.3 tons of $CO_2$ (HSBC Centre of Sustainable Finance, 2019). Thus, rating agencies would scrutinize the carbon related performance with relatively higher weightage to incorporate in the overall score for Tata Steel. Weightage in the range of 9-17 percent was assigned. The highest weightage was assigned for carbon emissions by Sustainalytics. The issues which have been highlighted by the selected rating agencies with respect to carbon emissions are as follows:

- Very high risk exposure above industry average
- Moderate carbon emission reduction targets
- Increasing direct emissions compared to previous years
- Scientific verification of the stated targets required

Another material issue as identified from rating assessments made for Tata Steel is emissions, effluents and waste management. These non-GHG emissions are toxic in nature and include $SO_x$, $NO_X$, dust and particulate matter which cause air pollution and pose

degraded health and well-being. Tata Steel with its integrated operations from raw material extraction, mine operations and mineral processing releases such pollutants. Rating agencies have identified performance gaps in toxic emissions management which can lead to penal provisions, fines and additional regulatory supervision. It was observed that between Sustainalytics and MSCI differences exist in the score provided for toxic emissions and waste management. Sustainalytics has identified one major gap in Tata Steel's performance whereas MSCI considers worst performance, highest risk exposure, low risk management measures along with others. The following sub-issues have been considered relevant for Tata Steel:

- Tailings management and standards must be IRMA certified (Initiative for responsible mining assurance)
- Very high risk exposure
- Poor risk management assessment practices
- No compliance audits for air emissions disclosed publicly
- No targets set for $SO_x$ and $NO_X$ emissions

Occupational health and safety remains a common material issue. Health and safety risks pose a threat to employee well-being and are linked to working conditions. Use of heavy machinery, explosive substances, blast furnace operations and chemicals can impact company finances. Various performance improvement measures need to be taken by Tata Steel to improve their current score. The following issues related to occupational health and safety have been identified:

- Increasing loss time in injury frequency rate (LTIFR) for contractual and permanent workforce
- Associated controversies
- High risk exposure

Tata Steel business setting and wide spread mandates establishes strong and mutually beneficial relationships with local communities and population. Therefore due to significant environmental and economic impacts, community relations are directly linked to financial performance of Tata Steel. Community opposition poses a significant threat and can cause serious long term business viability issues. The following set of sub-issues have been highlighted by the rating agencies for Tata Steel:

- Lack of indigenous rights policy
- Community consultation framework is missing

After having identified such gaps, it was observed that desired corporate action requires prioritization of certain issues. Therefore, with the help of colour coding for material issues and measures to be undertaken, a focussed approach towards rating improvement was adopted. The following colour indicates levels of urgency and priority required-

<u>For ESG specific gap:</u>

- Red- Common for all three rating agencies and high financial materiality
- Orange- Common for two rating agencies and moderately financially material

<u>For score improvement measures:</u>

- Green- Easily realizable target in the short term
- Yellow- Possible only in medium-long term

Table 8 presents a consolidated list of specific ESG gaps for Tata Steel along with measures required to be undertaken for score improvement.

| Key Issue | Weightage Range | Specific Gap | Rating Agency | | | Score Improvement Measures |
|---|---|---|---|---|---|---|
| | | | Sustain-alytics | DJSI | MSCI | |
| CORPORATE GOVE | 7% - 33% | Over-boarding of non-executive directors (NED) | Yes | Yes | Yes | Choice of Non-executive director who sits on less than three additional boards and have relevant industry experience |
| | | Committees not fully independent | Yes | | Yes | Nomination, Audit & Remuneration committee fully independent |
| | | RPTs in purview of non-independent directors | Yes | | Yes | Establishing a majority of independent directors |

| | | | | | | |
|---|---|---|---|---|---|---|
| RNANCE | | Claw-back, Stock Ownership & Sustainability Linked Incentive policy | Yes | | Yes | Establishing and publicly disclosing policies related for board governance |
| | | Gender diversity | Yes | Yes | Yes | Increasing from 20% to 30% |
| | | | | | | |
| CARBON EMISSI I | 9% - 17% | Rising emission intensity | Yes | | Yes | Measuring in $CO_2$ eq terms along with use of clean sources of energy, EAF |
| | | No SBTi verification | | Yes | Yes | Targets must be scientifically verified |
| | | Target year for net-zero deforestation | | Yes | | Target year for net-zero deforestation must be communicated to DJSI. Else, this |

| | | | | | | |
|---|---|---|---|---|---|---|
| O N S | | | | | | commitment must be withdrawn. |
| | | | | | | |
| C O M M U N I T Y R E L A T I O | 5% - 16% | No Indigenous rights policy | Yes | Yes | | Developing a policy in accordance with the Free, Prior and Informed Consent (FPIC) |
| | | Better community involvement | Yes | Yes | | Community consultation framework needs to be developed |

| | | | | | | |
|---|---|---|---|---|---|---|
| N S | | | | | | |
| | | | | | | |
| H E A L T H & S A F E T Y | 8% - 15% | LTIR & LTIFR increasing | Yes | Yes | Yes | Linking compensation to safety performance and automation of hazardous processes |
| | | Data transparency issues for fatality rate | Yes | Yes | | Information required for previous years |
| | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| TOXIC EMISSIONS & WAST | 9.5% - 14% | Tailings management and standards | Yes | | | Obtain international certification from IRMA. Re-using industrial by-products |
| | | Non-disclosure on compliance audits for air emissions | | | Yes | Disclosing required information |
| | | No set targets for SOx and NOx emissions | | | Yes | Setting and publicly disclosing targets |

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Table 8: Summarizes ESG specific gaps across material issues and measures for score improvement

## 5.0 DISCUSSION AND RECOMMENDATIONS

This section discusses the findings of the previous section and provides recommendations related to selected themes in the corporate sustainability architecture. The discussion has been carried out for both the research questions and is presented below:

The report focuses on Tata Steel's sustainability related practices: Sustainable finance framework and ESG ratings. The steel sector has been the overarching theme in this study from a Tata Steel perspective. It was observed that global demand for steel is likely to be serviced by emerging market economies like India and China. Currently produces more than 50 percent of the world's crude steel and followed by India which produces only 11 percent of what China does in the year 2021. However, the Indian government has ambitious plans to double the country's annual steel production capacity to 300 million metric tons by 2030. Therefore, it can be concluded that the Indian steel sector is likely to grow in the coming decades.

It was also observed that the steel sector faces numerous challenges while transitioning towards sustainable modes of production. The nature of these challenges could be: regulatory, financial, technological, operational, geographical and others. In India, due to low/negligible supply of natural gas, to shift from the current carbon intensive basic oxygen furnace to low carbon steel production methods is an onerous task. Electric arc furnaces, direct reduced iron induced production and green hydrogen are possible technological alternatives. It is for these reasons along with others that steel is regarded as a hard to abate sector. Sustainability issues which were identified across different geographies for steel companies were: Rising carbon emissions, occupational health-safety and societal/community relations. The manner in which these issues will affect steel producers

is dependent on various factors and is beyond the scope of this study. These issues have been discussed in much detail from Tata Steel perspective in the previous section.

Sustainable finance has been in focus in this report. Sustainable finance encompasses a range of financial products/measures like: Bond instruments, Impact investing/financing, CSR spending and various others. It was observed that steel players are expected to have ambitious scientifically verified public sustainability targets. Scientific verification implies that targets should be aligned with the Paris Agreement goals (1.5 degree pathway) and sector specific methodology needs to be designed for measuring such alignment rather than an outright one size fits all approach. SBTi is currently in the final stage of developing such a methodology for the steel sector. Hence, scientific verification for sustainability commitments of steel players is not provided at this given point of time. It was also observed that a framework becomes integral to win investor confidence to raise sustainable finance. The report has focussed on green, social and sustainability linked bonds principles as developed by ICMA. It was also observed that currently the cost of borrowing using such sustainable finance frameworks is not cheap as compared with conventional issuances. However, investors would like to promote both sustainability and growth and therefore the framework is recognized as a regular market practice. It is also expected that in a few years as the sustainable finance market matures, financial incentives in the form of greater capital flow and borrowing costs for sustainable projects will emerge.

The measure of sustainability performance is captured through the ESG ratings. The ESG ratings universe is in early stages and therefore faces issues like: Transparency, measurability, integration, correlation and others. Moreover, contextualization of such ratings provided is also important because certain issues might be considered relevant in

Western nations which might not be as relevant in Asian countries. The regulatory landscape is missing for ESG rating providers and also work in progress. For steel players a range of ESG specific risks have been identified in the previous section. These risks can impact operational and financial performance. Another issue which has been identified is integration of ESG ratings with traditional credit ratings. Various credit rating providers have internal methods to consider ESG metrics while assessing the creditworthiness of corporates. These methods lack transparency and do not measure sustainability performance at the fullest. An exercise was carried out to derive a correlation between sustainability and credit ratings of MSCI and Moody's respectively for S&P 50 companies. The results revealed negligible correlation (4.85 percent- refer figure 2) between both the variables. This shows current credit ratings and not being affected by ESG performance of an entity. Going forward, capital allocation, divestment and cost of borrowing decisions will gradually be influenced by both ESG and credit ratings.

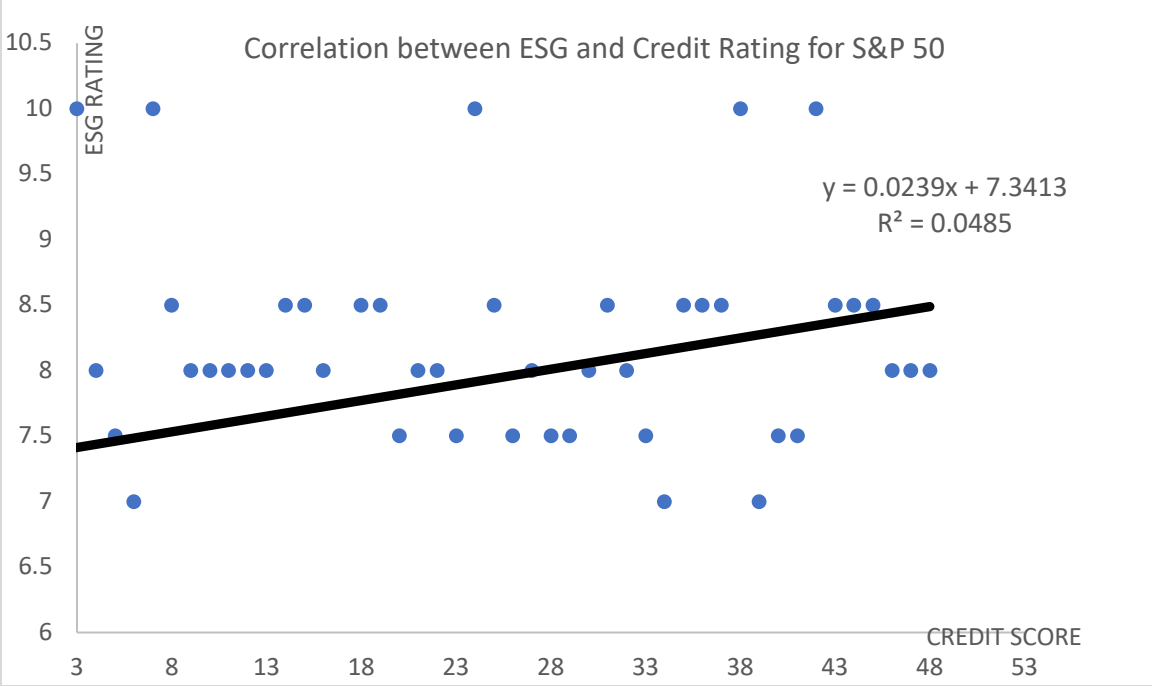


Figure 2: Correlation between ESG and credit ratings for S&P 50

The report concludes with the following recommendations in a summarized manner:

- Steel producers must have time-bond publicly disclosed ambitious sustainability commitments which should not vary year-on-year.
- These commitments should be realizable with the mentioned time-period
- A clear strategy must be revealed by steel producers to achieve sustainability targets alongside their growth and expansion plans
- Steel makers must consider not only GHG emissions as material environmental concern but also non-GHG emissions like NOx, SOx and dust emissions which pose a threat human health and well-being
- Research and development expenditure needs to be enhanced to discover new technologies for sustainable means of production
- To compete with Chinese steel producers in the global market, adequate governmental support would be required for Indian players
- Internal tracking and monitoring of various sustainable finance instruments like green or sustainability-linked bonds is integral for desired results
- The progress made after deployment of financial resources for sustainable ends must be duly reported in the annual sustainability reports
- Penal provisions mentioned in sustainability-linked bonds must be stringent enough to derive investor confidence
- Corporates must undertake efforts to comprehend methodologies and requirements of ESG rating providers. Constant engagement must be established with rating agencies.

- Corporates must identify common gaps in ESG performance highlighted by various rating agencies to inform their decision-making and prioritize their action
- Various voluntary associations and sector specific initiatives exist to guide different stakeholders to guide and move towards sustainable business practices. Corporates must identify such national and international groups according to the businesses to learn best practices and knowledge sharing purposes

The future direction of similar industry specific research reports should identify relations between various different themes in the corporate sustainability architecture. The other facets which require much needed attention are: Sustainability reporting and compliance norms, Industrial decarbonisation strategies, Biodiversity risks and natural capital loss. It would be interesting to study the effect of one or more of these themes on others. Moreover, sustainable finance frameworks and ESG ratings will have to be considered jointly in an integrated manner in the future research work. Case examples as provided in this report for other sectors will also be required in future work.

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